REQUEST FOR PROPOSAL
(FOR DESIGN/BUILD CONTRACT)

SOLICITATION NO. W9128F-04-R-0031

ADAL MISSION SUPPORT FACILITY
PDC NO. TDKA 033002

PETERSON AFB, Colorado

JULY 2004

U.S. ARMY CORPS OF ENGINEERS
OMAHA DISTRICT

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NOTE TO OFFERORS:

SECTION 00600

A COPY OF SECTION 00600, REPRESENTATIONS, CERTIFICATIONS & OTHER STATEMENTS OF OFFERORS HAS BEEN INCLUDED ON CD-ROM FOR FILL-IN PURPOSES ONLY. ANY ALTERATIONS TO THIS DOCUMENT OTHER THAN COMPANY FILL-IN INFORMATION WILL MAKE THIS DOCUMENT NULL AND VOID. SEE FOLDER ON CD-ROM LABELED "SECTION 00600".

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REQUEST FOR PROPOSAL
(FOR DESIGN/BUILD CONTRACT)

ADAL MISSION SUPPORT FACILITY
PDC NO. TDKA 033002

PETERSON AFB, COLORADO

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SOLICITATION, OFFER, AND AWARD (Construction, Alteration, or Repair)	1. SOLICITATION NO.	2. TYPE OF SOLICITATION	3. DATE ISSUED	PAGE OF PAGES
	W9128F-04-R-0031	☐ SEALED BID (IFB) ☒ NEGOTIATED (RFP)	13 JUL 2004	1 OF 7

IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.

4. CONTRACT NO.	5. REQUISITION/PURCHASE REQUEST NO.	6. PROJECT NO.

7. ISSUED BY CODE CT

U S ARMY ENGINEER DISTRICT, OMAHA
106 South 15th Street
Omaha, Nebraska 68102-1618

8. ADDRESS OFFER TO

U.S.ARMY CORPS OF ENGINEERS, OMAHA
Attn: CONTRACTING DIVISION (CENWO-CT)
106 South 15th Street
Omaha, Nebraska 68102-1618

9. FOR INFORMATION CALL: ▶	A. NAME	B. TELEPHONE NO. (Include area code) (NO COLLECT CALLS)
	See SECTION 00100, Para. 15	See SECTION 00100, Para. 15

SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS (Title, identifying no., date):

The Offeror hereby agrees to do all the work described in these documents entitled:

ADAL MISSION SUPPORT FACILITY
PDC NO. TDKA 033002
PETERSON AFB, COLORADO

RETURN WITH PROPOSAL: INFORMATION REQUIRED BY SECTION 00110; SECTION 00010 (SF1442); AND SECTION 00600

OTHER BONDING INFORMATION: SEE CONTRACT CLAUSES CLAUSE "PERFORMANCE AND PAYMENT BONDS".

*-SEE SECTION 00800, PARA.1 AND SECTION 00110:PROPOSAL SUBMISSION REQUIREMENTS, INSTRUCTIONS AND EVALUATION (Contractor to Propose Number of Calendar days)
** Copies (Item 13.A below) - See Section 01110 PROPOSAL SUBMISSION REQUIREMENTS, INSTRUCTIONS AND EVALUATION

11. The Contractor shall begin performance within 10 calendar days and complete it within * calendar days after receiving

☐ award, ☒ notice to proceed. This performance period is ☒ mandatory, ☐ negotiable. (See _____ .)

12A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? (If "YES," indicate within how many calendar days after award in Item 12B.)	12B. CALENDAR DAYS
☒ YES ☐ NO	10

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and ** copies to perform the work required are due at the place specified in Item 8 by 1400 (hour) local time 13 AUG 2004 (date). If this is a sealed bid solicitation, offers must be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee ☐ is, ☒ is not required.

C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.

D. Offers providing less than 60 calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

14. NAME AND ADDRESS OF OFFEROR (Include ZIP Code)	15. TELEPHONE NO. (Include area code)
DUNS Number:	16. REMITTANCE ADDRESS (Include only if different than Item 14)
CODE FACILITY CODE	

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within 60 calendar days after the date offers are due. (Insert any number equal to or greater than the minimum requirement stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)

AMOUNTS ▶ See attached PRICING SCHEDULE

Contractor's Fax No._____ CAGE CODE _____

Contractor's E-Mail address_____

18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGMENT OF AMENDMENTS

(The offeror acknowledges receipt of amendments to the solicitation - give number and date of each)

AMENDMENT NO.										
DATE										

20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)	20B. SIGNATURE	20C. OFFER DATE

AWARD (To be completed by Government)

21. ITEMS ACCEPTED:

22. AMOUNT	23. ACCOUNTING AND APPROPRIATION DATA

24. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified) ▶	ITEM 26	25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO ☐ 10 U.S.C. 2304(c) ( ) ☐ 41 U.S.C. 253(c) ( )

26. ADMINISTERED BY CODE	27. PAYMENT WILL BE MADE BY
U.S. Army Engineer District, Omaha 106 South 15th Street Omaha, Nebraska 68102-1618	USAED Omaha c/o USACE Finance Center 5722 Integrity Drive Millington, TN 38054-5005

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

☐ 28. NEGOTIATED AGREEMENT (contractor is required to sign this document and return_____ copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications incorporated by reference in or attached to this contract.	☐ 29. AWARD (Contractor is not required to sign this document.) Your offer on this solicitation, is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.
30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN (Type or print)	31A. NAME OF CONTRACTING OFFICER (Type or print)

30B. SIGNATURE	30C. DATE	31B. UNITED STATES OF AMERICA BY	31C. AWARD DATE

PRICING SCHEDULE

BASIC ITEMS				
Item No.	Description	Quantity	Unit	Total Amount
0001	**All work complete for the addition and alterations to existing Mission Support Facility, except for Option Items listed below.**			
	Construction Cost	Job	Lump Sum	$_____
	Design Cost	Job	Lump Sum	$_____
Total Basic for the ADAL Mission Support Facility (Construction + Design)			**$ _____**	
OPTION ITEMS				
O-0001	**Additional amount for providing trees, shrubs, and other landscaping features (ie. Edging, irrigation system, etc.) Required between the 33 feet and 82 feet lines outside the new building addition (included in Basic Item 0001) in lieu of the basic sodding and irrigation requirement for this area. See Section 01002 SITE WORK for requirements.**			
	Construction Cost	Job	Lump Sum	$_____
	Design Cost	Job	Lump Sum	$_____

OPTION ITEMS (CONT)				
O-0002	**All work complete for the demolition of Existing Building 365 and provide the new parking lot located northeast of Dover St.. See RFP drawing Sheet C3.01 for parking lot layout.**			
	Construction Cost	Job	Lump Sum	$_____
	Design Cost	Job	Lump Sum	$_____
O-0003	**Additional amount for providing the larger footprint building addition to the Mission Support Facility in lieu of the building addition provided under Basic Item No. 0001.**			
	Construction Cost	Job	Lump Sum	$_____
	Design Cost	Job	Lump Sum	$_____
O-0004	**Deductive Amount from Option O-0001 to provide landscaping features required by Option O-0003 (larger footprint building) as explained in Section 01002 SITE WORK.**			
	Construction Cost	Job	Lump Sum	$_____
	Design Cost	Job	Lump Sum	$_____

OPTION ITEMS (CONT)				
O-0005	**All work complete to provide additional air conditioning in existing Mission Support Facility Communications Room (Room 1100).** **Construction Cost** **Design Cost**	Job Job	Lump Sum Lump Sum	$_____ $_____
O-0006	**All work complete for relighting the existing Atrium Break Area located in the existing Mission Support Facility.** **Construction Cost** **Design Cost**	Job Job	Lump Sum Lump Sum	\ $_____ $_____
O-0007	**All work complete to provide backup air conditioning in the Addition Second Floor Server Room.** **Construction Cost** **Design Cost**	Job Job	Lump Sum Lump Sum	$_____ $_____
O-0008	**Additional amount to provide a single power service with single shutdown switch in lieu of separate power services for the existing Mission Support Facility and the new addition.** **Construction Cost** **Design Cost**	Job Job	Lump Sum Lump Sum	$_____ $_____

OPTION ITEMS (CONT)				
O-0009	**All work complete for new water distribution line running from Suffolk Street to the Mission Support Facility. See RFP Sheet U1.01 for layout.** **Construction Cost** **Design Cost**	Job Job	Lump Sum Lump Sum	$_____ $_____
O-0010	**All work complete for improvements to existing Mission Support Facility penthouse area (i.e. storage units, fire sprinkler system, etc.).** **Construction Cost** **Design Cost**	Job Job	Lump Sum Lump Sum	$_____ $_____
O-0011	**All work complete for demolition of existing Building 880 (Design and Construction).**	Job	Lump Sum	$_____
O-0012	All work complete for fire protection standpipe for stairwells in existing and new building addition.	Job	Lump Sum	$_____

GRAND TOTAL AMOUNT FOR THE ADAL MISSION SUPPORT FACILITY	
GRAND TOTAL AMOUNT (BASIC + ALL OPTIONS)	**$_____**

NOTES:

1. See SECTION 00100, INSTRUCTIONS, CONDITIONS, & NOTICES TO OFFERORS FOR AWARD for evaluation of options. The Government reserves the right to exercise the options within 60 days after issuance of Notice to Proceed, except Option O-0003. The exercising of Option O-0003 will be determined by Notice to Proceed.. Option O-4 will not be exercise without first exercising Options O-0003 and Option O-0001. Option No. O-0010 will not be exercised without first exercising Option No. 0003.

2. Prices must be entered for all items of the schedule. Total amount offers submitted without prices being entered on the individual items will be considered non-responsive and subject to rejection. Additions will be subject to verification by the Government. In case of variation between the lump sum prices and the total amount, the lump sum prices will be considered the price proposed.

3. The Options Items are considered cost additions and therefore positive numbers should be entered. If the offeror determines the option results in a decreased price, a negative number should be entered. Evaluation of Options remains unchanged.

4. Completion time will not be adjusted for award of any options in addition to the Basic Project.

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SECTION 00100

INSTRUCTIONS, CONDITIONS AND NOTICES TO OFFERORS
(July 2000, Revised January 2004)

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SECTION 00100

INSTRUCTIONS, CONDITIONS AND NOTICES TO OFFERORS

1 DEFINITION OF "DESIGN-BUILD" PROCESS

The "Design-Build Process is the procurement of a facility utilizing a Request for Proposal (RFP) to solicit for the design and construction of a facility by a single contractual entity. The contractual entity may be a "Design-Build" firm, or joint venture between an architect-engineer (A-E) and construction firm, or a construction management (CM) firm joint venture with an A-E and a construction firm.

2 SOLICITATION RESTRICTIONS

2.1 GENERAL CONTRACTOR

This solicitation is unrestricted (not limited to small business concerns).

2.2 ESTIMATED DESIGN AND CONSTRUCTION COST

The estimated design and construction cost of this project is between $7,500,000 and $10,000,000.

2.3 RESERVED

2.4 SUBMISSION, MODIFICATION, REVISION, AND WITHDRAWAL OF PROPOSALS.

See FAR 52.215-1 INSTRUCTIONS TO OFFERORS-COMPETITIVE ACQUISTION, subparagraph "(c) *Submission, modification, revision, and withdrawal of proposals*." below for acceptable methods. Note: Electronic commerce or facsimile are not acceptable methods, unless indicated otherwise.

2.5 RETURN ADDRESS REQUIREMENTS

Offeror(s) must ensure that **ALL** mail sent to the Omaha District, U.S. Army Corps of Engineers, either pre-contract or post-contract award, has a return mailing address on the outside of the envelope, package, box, etc. **ANY MAIL** addressed to the U.S. Army Corps of Engineers, including but not limited to bids, modifications to bids, proposals, revised proposals, bonds, correspondence, etc., **will be REJECTED** by the US Army Corps of Engineers mail room facility located at 106 South Street, Omaha, Nebraska 68102-1618 if it does not contain a return mailing address. **There will be no exceptions.**

3 (FAR 52.217-5) EVALUATION OF OPTIONS (JUL 1990)

Except when it is determined in accordance with FAR 17.206(b) not to be in the Government's best interests, the Government will evaluate offers for award purposes by adding the total price for all options to the total price for the

basic requirement. Evaluation of options will not obligate the Government to exercise the option(s).

4 (FAR 52.211-2) AVAILABILITY OF SPECIFICATIONS LISTED IN THE DOD INDEX OF SPECIFICATIONS AND STANDARDS (DODISS) AND DESCRIPTIONS LISTED IN THE ACQUISITION MANAGEMENT SYSTEMS AND DATA REQUIREMENTS CONTROL LIST, DOD 5010.12-L (DEC 2003)

Copies of specifications, standards, and data item descriptions cited in this solicitation may be obtained—

(a) From the ASSIST database via the Internet at http://assist.dla.mil; or

(b) By submitting a request to the—

Department of Defense Single Stock Point (DoDSSP)
Building 4, Section D
700 Robbins Avenue
Philadelphia, PA 19111-5094
Telephone (215) 697-2179
Facsimile (215) 697-1462.

(End of provision)

5 (FAR 52.215-1) INSTRUCTIONS TO OFFERORS--COMPETITIVE ACQUISITION (JAN 2004)

(a) *Definitions*. As used in this provision—

"Discussions" are negotiations that occur after establishment of the competitive range that may, at the Contracting Officer's discretion, result in the offeror being allowed to revise its proposal.

"In writing," "writing," or "written" means any worded or numbered expression that can be read, reproduced, and later communicated, and includes electronically transmitted and stored information.

"Proposal modification" is a change made to a proposal before the solicitation's closing date and time, or made in response to an amendment, or made to correct a mistake at any time before award.

"Proposal revision" is a change to a proposal made after the solicitation closing date, at the request of or as allowed by a Contracting Officer as the result of negotiations.

"Time," if stated as a number of days, is calculated using calendar days, unless otherwise specified, and will include Saturdays, Sundays, and legal holidays. However, if the last day falls on a Saturday, Sunday, or legal holiday, then the period shall include the next working day.

(b) *Amendments to solicitations*. If this solicitation is amended, all terms and conditions that are not amended remain unchanged. Offerors shall acknowledge receipt of any amendment to this solicitation by the date and time specified in the amendment(s).

(c) *Submission, modification, revision, and withdrawal of proposals*. (1) Unless other methods (*e.g.*, electronic commerce or facsimile) are permitted in the solicitation, proposals and modifications to proposals shall be submitted in paper media in sealed envelopes or packages (i) addressed to the office specified in the solicitation, and (ii) showing the time and date specified for receipt, the solicitation number, and the name and address of the offeror. Offerors using commercial carriers should ensure that the proposal is marked on the outermost wrapper with the information in

paragraphs (c)(1)(i) and (c)(1)(ii) of this provision.

(2) The first page of the proposal must show—

(i) The solicitation number;

(ii) The name, address, and telephone and facsimile numbers of the offeror (and electronic address if available);

(iii) A statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation and agreement to furnish any or all items upon which prices are offered at the price set opposite each item;

(iv) Names, titles, and telephone and facsimile numbers (and electronic addresses if available) of persons authorized to negotiate on the offeror’s behalf with the Government in connection with this solicitation; and

(v) Name, title, and signature of person authorized to sign the proposal. Proposals signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the issuing office.

(3) *Submission, modification, revision, and withdrawal of proposals*.

(i) Offerors are responsible for submitting proposals, and any modifications or revisions, so as to reach the Government office designated in the solicitation by the time specified in the solicitation. If no time is specified in the solicitation, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that proposal or revision is due.

(ii)(A) Any proposal, modification, or revision received at the Government office designated in the solicitation after the exact time specified for receipt of offers is “late” and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late offer would not unduly delay the acquisition; and—

(*1*) If it was transmitted through an electronic commerce method authorized by the solicitation, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of proposals; or

(*2*) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of offers and was under the Government’s control prior to the time set for receipt of offers; or

(*3*) It is the only proposal received.

(B) However, a late modification of an otherwise successful proposal that makes its terms more favorable to the Government, will be considered at any time it is received and may be accepted.

(iii) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the proposal wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(iv) If an emergency or unanticipated event interrupts normal Government processes so that proposals cannot be received at the office designated for receipt of proposals by the exact time specified in the solicitation, and urgent Government requirements preclude amendment of the solicitation, the time specified for receipt of proposals will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(v) Proposals may be withdrawn by written notice received at any time before award. Oral proposals in response to oral solicitations may be withdrawn orally. If the solicitation authorizes facsimile proposals,

proposals may be withdrawn via facsimile received at any time before award, subject to the conditions specified in the provision at 52.215-5, Facsimile Proposals. Proposals may be withdrawn in person by an offeror or an authorized representative, if the identity of the person requesting withdrawal is established and the person signs a receipt for the proposal before award.

(4) Unless otherwise specified in the solicitation, the offeror may propose to provide any item or combination of items.

(5) Offerors shall submit proposals in response to this solicitation in English, unless otherwise permitted by the solicitation, and in U.S. dollars, unless the provision at FAR 52.225-17, Evaluation of Foreign Currency Offers, is included in the solicitation.

(6) Offerors may submit modifications to their proposals at any time before the solicitation closing date and time, and may submit modifications in response to an amendment, or to correct a mistake at any time before award.

(7) Offerors may submit revised proposals only if requested or allowed by the Contracting Officer.

(8) Proposals may be withdrawn at any time before award. Withdrawals are effective upon receipt of notice by the Contracting Officer.

(d) *Offer expiration date*. Proposals in response to this solicitation will be valid for the number of days specified on the solicitation cover sheet (unless a different period is proposed by the offeror).

(e) *Restriction on disclosure and use of data*. Offerors that include in their proposals data that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, shall—

(1) Mark the title page with the following legend:
This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed—in whole or in part—for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror as a result of—or in connection with—the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [*insert numbers or other identification of sheets*]; and

(2) Mark each sheet of data it wishes to restrict with the following legend:
Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal.

(f) *Contract award*. (1) The Government intends to award a contract or contracts resulting from this solicitation to the responsible offeror(s) whose proposal(s) represents the best value after evaluation in accordance with the factors and subfactors in the solicitation.

(2) The Government may reject any or all proposals if such action is in the Government’s interest.

(3) The Government may waive informalities and minor irregularities in proposals received.

(4) The Government intends to evaluate proposals and award a contract without discussions with offerors (except clarifications as described in FAR 15.306(a)). Therefore, the offeror’s initial proposal should contain the offeror’s best terms from a cost or price and technical standpoint. The Government reserves the right to conduct discussions if the Contracting Officer later determines them to be necessary. If the Contracting Officer determines that the number of proposals that would otherwise be in the competitive range exceeds the number at which an efficient competition

can be conducted, the Contracting Officer may limit the number of proposals in the competitive range to the greatest number that will permit an efficient competition among the most highly rated proposals.

(5) The Government reserves the right to make an award on any item for a quantity less than the quantity offered, at the unit cost or prices offered, unless the offeror specifies otherwise in the proposal.

(6) The Government reserves the right to make multiple awards if, after considering the additional administrative costs, it is in the Government's best interest to do so.

(7) Exchanges with offerors after receipt of a proposal do not constitute a rejection or counteroffer by the Government.

(8) The Government may determine that a proposal is unacceptable if the prices proposed are materially unbalanced between line items or subline items. Unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more contract line items is significantly overstated or understated as indicated by the application of cost or price analysis techniques. A proposal may be rejected if the Contracting Officer determines that the lack of balance poses an unacceptable risk to the Government.

(9) If a cost realism analysis is performed, cost realism may be considered by the source selection authority in evaluating performance or schedule risk.

(10) A written award or acceptance of proposal mailed or otherwise furnished to the successful offeror within the time specified in the proposal shall result in a binding contract without further action by either party.

(11) If a post-award debriefing is given to requesting offerors, the Government shall disclose the following information, if applicable:

(i) The agency's evaluation of the significant weak or deficient factors in the debriefed offeror's offer.

(ii) The overall evaluated cost or price and technical rating of the successful and the debriefed offeror and past performance information on the debriefed offeror.

(iii) The overall ranking of all offerors, when any ranking was developed by the agency during source selection.

(iv) A summary of the rationale for award.

(v) For acquisitions of commercial items, the make and model of the item to be delivered by the successful offeror.

(vi) Reasonable responses to relevant questions posed by the debriefed offeror as to whether source-selection procedures set forth in the solicitation, applicable regulations, and other applicable authorities were followed by the agency.

(End of provision)

6 CHANGES PRIOR TO RECEIVING OFFERS

The right is reserved, as the interest of the Government may require, to revise the specifications and/or Request For Proposal drawings prior to the date set for receiving offers. Such revisions will be announced by an amendment or amendments to this Request For Proposal. **It shall be the responsibility of the prospective offeror, subcontractor or supplier to obtain copies of amendments from the website listed in paragraph: PLAN HOLDER'S LIST below**. The Government may (but not required) send an amendment notification to let prospective offerors know that an amendment has been

issued.

7 (FAR 52.216-1) TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a firm fixed price contract resulting from this solicitation.

(End of provision)

8 DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER

(a) The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation "DUNS" followed by the DUNS number that identifies the offeror's name and address exactly as stated in the offer. The DUNS number is a nine-digit number assigned by Dun and Bradstreet Information Services.

(b) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one. A DUNS number will be provided immediately by telephone at no charge to the offeror. For information on obtaining a DUNS number, the offeror, if located within the United States, should call Dun and Bradstreet at 1-800-333-0505. The offeror should be prepared to provide the following information:

(1) Company name.

(2) Company address.

(3) Company telephone number.

(4) Line of business.

(5) Chief executive officer/key manager.

(6) Date the company was started.

(7) Number of people employed by the company.

(8) Company affiliation.

(c) Offerors located outside the United States may obtain the location and phone number of the local Dun and Bradstreet Information Services office from the Internet home page at http://www.customerservice@dnb.com. If an offeror is unable to locate a local service center, it may send an e-mail to Dun and Bradstreet at globalinfo@mail.dnb.com.

(End of provision)

9 SMALL BUSINESS SIZE STANDARD

The small business size standard is gross annual receipts for its preceding 3 fiscal years did not exceed $28.5 million.

10 NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS)

In accordance with Sector 23 of the NAICS Manual, the work in this

solicitation is assigned classification code 236220.

11 NOT USED

12 (FAR 52.236-28) PREPARATION OF PROPOSALS—CONSTRUCTION (OCT 1997)

(a) Proposals must be (1) submitted on the forms furnished by the Government or on copies of those forms; and (2) manually signed. The person signing a proposal must initial each erasure or change appearing on any proposal form.

(b) The proposal form may require offerors to submit proposed prices for one or more items on various bases, including—

(1) Lump sum price;
(2) Alternate prices;
(3) Units of construction; or
(4) Any combination of paragraphs (b)(1) through (b)(3) of this provision.

(c) If the solicitation requires submission of a proposal on all items, failure to do so may result in the proposal being rejected without further consideration. If a proposal on all items is not required, offerors should insert the words "no proposal" in the space provided for any item on which no price is submitted.

(d) Alternate proposals will not be considered unless this solicitation authorizes their submission.

(End of provision)

13 (FAR 52.233-2) SERVICE OF PROTEST (AUG 1996)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgement of receipt from District Counsel, 106 South 15th Street, Omaha, Nebraska 68102-1618.

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

14 (FAR 52.236-27) SITE VISIT (CONSTRUCTION) (FEB 1995)

(a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly, offerors or quoters are urged and expected to inspect the site where the work will be performed.

(b) A Pre-Proposal Conference/Site Visit is scheduled on 27 July 2004. Assembly will take place in the main conference room of the 302 Civil Engineer Squadron Building (Bldg. 1285) located on the corner of Goodfellow Street and Ent Avenue, Peterson AFB. Pre-Proposal Conference/Site Visit will

begin promptly at 9:00 a.m. All Contractors must contact the Corps of Engineers Peterson AFB Resident Office no later than 48 hours prior to scheduled pre-proposal conference/site visit so that arrangements can be made with the Visitors Center and Security Police for badging to allow entry of the Contractors onto the base to participate in the pre-proposal conference and to examine the site. The Point of Contact at the Resident Office is Paul Jendzejec, Telephone: (719) 556-4184. The fax number at the Resident Office is (719) 556-7115. E-mail address at the Resident Office is Paul.M.Jendzejec@usace.army.mil. Contractors must provide a fax with the following information to the Resident Office for all visitors attending:

1) Name of Contractor or Firm Represented
2) Visitor Name
3) Visitor Social Security Number
4) Visitor Date of Birth and Place of Birth
5) Visitor Driver's License Number
6) Visitor Proof of Citizenship

Provide a phone number on each fax so that information, which may be illegible or requires additional clarification, can be verified, if necessary. **NOTE: THIS INFORMATION MAY NOT BE TRANSMITTED VERBALLY – ONLY A FAX CONTAINING THE INFORMATION IS ACCEPTABLE.** Questions regarding the site visit should be directed to the Resident Office at the number listed above, with a copy of the questions provided to U.S. Army Engineer District, Omaha, Contracting Division, CENWO-CT-M (Polina Poluektova [Polina.A.Poluektove@usace.army.mil]), 106 S 15th Street, Omaha NE 68102-1618. Access to Peterson AFB will be denied to anyone failing to comply with the requirements stated above. Prospective offerors may submit questions on the request for proposal documents via e-mail to the Contract Specialist and Project Manager [Michael.L.Armstrong@usace.army.mil] (prefer in advance of the conference), so prepared answers can be delivered during the conference. A written summary of the questions and answers will be provided to each offeror. Remarks and explanations at the conference shall not qualify the terms of the solicitation. Terms of the solicitation and specifications remain unchanged unless the solicitation is amended in writing.

15 OFFEROR'S QUESTIONS AND COMMENTS

Questions and/or comments relative to these documents should be submitted via e-mail or mailed to: U.S. Army Corps of Engineers, Omaha District, ATTN: CENWO-CT-M 106 South 15th Street, Omaha, NE 68102-1618. Comments should reach this office no later than 20 calendar days prior to the date set for receiving of proposals, if feasible, in order that changes, if needed, may be added by amendment. E-mail addresses, FAX numbers, items for question and points of contact are listed below. Phone calls with questions should be made between 8:30 a.m. and 3:30 p.m. (Central Standard Time) Monday through Friday.

Note: A courtesy copy of all questions shall be sent to the Contract Specialist (Contractual Matters Point of Contact), the Program Manager and the Specifications Section (Technical Contents Points of Contact), except for Small Business questions. Small Business questions shall go to the Small Business Matters point of contact.

Items for Question	Points of Contact/ Phone numbers/ FAX Numbers	E-mail Addresses
Contractual Matters: Ordering CD-Rom of the proposal documents (limit One per firm)/ amendments**/ Receipt of Proposals	P. Poluektova 402-2213705 (phone) 402-221-4199 (fax)	polina.a.poluektova@usace.army.mil
Planholder's List	See paragraph: PLAN HOLDER'S LIST, below.	
Small Business Matters	Hubert Carter 402-221-4110 (phone)	hubert.j.carter@usace.army.mil
Technical Contents Of Proposal Documents	Michael Armstrong 402-221-3981 (phone) 402-221-4828(fax)	michael.l.armstrtong@usace.army.mil
	Or	
	Specifications Section Doug Larsen 402-221-4547 402-221-3842	douglas.r.larsen@usace.army.mil
Site Inspection	See Paragraph: SITE INSPECTION, above	

**** - The Government may elect to send a notification that an amendment has been posted to the Government's web address, but is not required to. It shall be the Contractor's, Subcontractor's and Supplier's responsibility to check the Government's web address for amendments.**

15.1 PLAN HOLDER'S LIST

The CD-Rom will provide a list of plan holders that have registered at the time the CD-Rom was created. It is offeror's responsibility to check for any updates to the plan holder's list, which is available at the following web address:

http://ebs-nwo.wes.army.mil/

16 GENERAL DESCRIPTION OF WORK

Scope of project includes all work required to design and construct the ADAL Mission Support Facility located at Peterson AFB, Colorado. Work shall be in accordance with Request for Proposal documents issued with this solicitation.

17 PROPOSAL SUBMISSION REQUIREMENTS, INSTRUCTIONS AND EVALUATION

See SECTION 00110: PROPOSAL INSTRUCTIONS, SUBMISSION REQUIREMENTS AND EVALUATION.

18 SOURCE SELECTION BOARD (SSB)

The Contracting Officer has established a Source Selection Board to conduct an evaluation of each proposal received in response to this Solicitation. The evaluation will be based exclusively on the merits and content of the proposal and any subsequent discussion required. The identities of the SSB personnel are confidential, and any attempt by the proposers to contact these individuals is prohibited.

19 COLORADO SALES AND USE TAX

Specific exemption from the Colorado Sales and Use Taxes will be granted by the Colorado Tax authorities with respect to all materials used by a prime Contractor or subcontractor and which are built into structures furnished under contract to a Government agency. The Colorado Sales and Use Taxes shall be excluded from the bid prices. Exemption certificates are available to both Contractors and subcontractors provided personal application is made therefor to the Department of Revenue, State of Colorado, State Capitol Annex, Denver, Colorado. The Contractor or subcontractor will be required to submit the date of the contract, the amount of the contract, and the proposed date for completion of the contract. Telephone: (303) 534-1208 (General Information).

19.1 CITY TAXES

The Municipality of Colorado Springs also has a sales and use tax. The Municipal tax authorities should be contacted by the bidder to determine applicability of the tax to this project.

20 (FAR 52.232-18) AVAILABILITY OF FUNDS (APR 1984).

Funds are not presently available for this contract. The Government's obligation under this contract is contingent upon the availability of appropriated funds from which payment for contract purposes can be made. No legal liability on the part of the Government for any payment may arise until funds are made available to the Contracting Officer for this contract and until the Contractor receives notice of such availability, to be confirmed in writing by the Contracting Officer. (FAR 52.232-18)

REQUIRED CENTRAL CONTRACTOR REGISTRATION (CCR)

Register Now: Don't wait until you submit an offer on a solicitation. You must be registered to receive the contract award. It can often take 30 days for CCR to process your registration information.

Register One of Three Ways:

Internet: http://www.ccr.gov

Value Added Network (VAN) for EDI users: Contact your VAN for information. If you need to find a VAN look at http://www.acq.osd.mil/ec/ecip/van_list.htm

FAX or Mail: Call (888)227-2423 or (616)961-4725 to receive a registration package. FAX or mail the completed information to the CCR Assistance Center. It can take up to 30 days to process a faxed or mailed package.

CCR Assistance Center
74 Washington Street North, Suite 7
Battle Creek, MI 49017-3084
FAX: (616)961-7243

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ADAL Mission Support Facility
Peterson AFB, CO

SECTION 00110

**PROPOSAL INSTRUCTIONS,
SUBMISSION REQUIREMENTS AND EVALUATION**

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ATTACHMENTS:

Form DD2626: Performance Evaluation (Construction)
Form DD2631: Performance Evaluation (Architect-Engineer)
Sample Small Business Subcontracting Plan
Appendix DD – Subcontracting Plan Evaluation Guide

SECTION 00110

PROPOSAL INSTRUCTIONS, SUBMISSION REQUIREMENTS AND EVALUATION

1. WHO MAY SUBMIT

This solicitation is open to both large and small business participation.

All proposers, including joint ventures, must be registered in the Central Contractor Registration (CCR). See paragraph: JOINT VENTURES below.

2. GENERAL REQUIREMENTS

In order to effectively and equitably evaluate all proposals, the Contracting Officer must receive information sufficiently detailed to clearly indicate compliance with the proposal submission requirements.

3. SIZE OF PRINTED MATTER SUBMISSIONS

All written portions (other then the organization chart) shall be in 8-1/2" x 11" format.

4. WHERE TO SUBMIT

Offerors shall submit their proposal packages to the USACE Contracting Activity at the address shown in Block 8 of Standard Form 1442.

5. SUBMISSION DEADLINE

Proposals shall be received by the USACE Contracting Activity no later than the time and date specified in Block 13 of Standard Form 1442.

Due to heightened security at Government installations, those offerors who have their proposals hand-delivered shall contact Polina Poluektova, Contract Specialist at (402) 221-3705 prior to delivering to the U.S. Army Corps of Engineer District, Omaha, 106 South 15th Street, Omaha, NE 68102-1618.

On the date specified and for the thirty minutes prior to the time specified on the Standard Form SF 1442, Page 00010-1, Item 13A, a Contracting Representative will be in the lobby to accept proposals. At the time specified on the Standard Form 1442, Page 00010-1, Item 13.A, it will be announced that receipt of proposals is closed. Official time will be established by the clock located in the area where proposals are received.

6. EVALUATION OF PROPOSALS

a. All proposals and documentation, which have been properly submitted, will be evaluated. Proposals received will be evaluated on the basis of the factors stated in the solicitation to select the responsible offeror whose proposal is most advantageous to the Government. Because of the number of proposals anticipated, uniformity of all proposals is essential to assure fair and accurate evaluation. All proposals must comply with the instructions in the solicitation.

b. All responsible offerors whose proposal has a reasonable chance of being selected will be included in the competitive range in accordance with FAR 15.306(c)(2).

c. Discussions with owners, contract administrators, or other points of contact, provided by the offeror may affect the evaluation rating given for the factors being evaluated by those discussions.

d. Evaluations will be conducted in accordance with the Tradeoff Process, FAR 15.101-1. Tabs 1 through 9 will be rated using an adjectival methodology with a narrative assessment and Binder #2 (Price) will be evaluated after consensus scoring Tabs 1-9. Proposal evaluation is an assessment of the proposal and the offeror's ability to perform the resultant contract successfully. Proposals will be evaluated to determine ratings supported by narratives, and to identify strengths, weaknesses, and deficiencies of the proposed approach in each proposal.

e. Evaluation Definitions.

(1) Strength. A substantive aspect, attribute, or specific item in the proposal that exceeds the solicitation requirements and enhances the probability of successful contract performance.

(2) Weakness. A flaw in the proposal that increases the risk of unsuccessful contract performance. A significant weakness in the proposal is a flaw that appreciably increases the risk.

(3) Deficiency. A material failure of a proposal to meet a Government requirement or a combination of significant weaknesses in a proposal that increases the risk of unsuccessful contract performance to an unacceptable level.

(4) Clarification. Clarifications are limited exchanges between the Government and offerors that may occur when award without discussions is contemplated. If award without discussions is anticipated, offerors may be given the opportunity to clarify certain aspects of their proposals or to resolve minor or clerical errors.

(5) Communications. Communications are exchanges between the Government and offerors after receipt of proposals, leading to establishment of the competitive range.

(6) Discussions. Discussions are negotiations conducted in a competitive acquisition and take place after establishment of the competitive range. Discussions are tailored to each offeror's proposal, and shall be conducted by the Contracting Officer with each offeror within the competitive range.

(7) Rating. The application of a scale of words, colors, or numbers, used in conjunction with narrative, to denote the degree to which the proposal has met the standard for a non-cost factor. For purposes of this solicitation, ratings will consist of words (adjectival method) used in conjunction with narratives. Ratings will be applied at the factor (tab) and subfactor level. If at any level of indentation an Offeror's proposal is evaluated as not meeting a minimum requirement (that is, below the level of acceptable), this fact must be included in the rating and narrative assessment at that level and each higher level of indentation. Therefore, a marginal or unacceptable rating at any level must be carried to the factor (tab) level. The following ratings will be used to evaluate Tabs 1 through 9:

(a) Exceptional. Exceeds requirements of the RFP, provides all required information stated in Section 00110 and is expressed in a manner indicating maximum benefit to the government.

(b) Above Average. Exceeds requirements of the RFP, provides all required information stated in Section 00110 and is expressed in a manner indicating significant benefit to the government.

(c) Average. Complies with the requirements of the RFP as stated in Section 00110. The government may still receive benefit from the proposal submitted.

(d) Marginal. Fails to meet a minimum requirement of the RFP as stated in Section 00110;
however, any deficiencies are correctable without a major revision of the proposal.

(e) Unacceptable. Fails to meet a minimum requirement of the RFP as stated in Section 00110, and the deficiency is uncorrectable without a major revision of the proposal.

(f) Neutral. In the case of an offeror without a record of relevant past performance or for whom information on past performance is not available, the offeror may not be evaluated either favorably or unfavorably on past performance. *

*For Tab 5, Past Performance, Design and Tab 6, Past Performance, Construction, a neutral rating will be awarded when no past performance records are provided. Per Federal Acquisition Regulation (FAR) 15.305(a)(2)(iv), "In the case of an offeror without a record of relevant past performance or for whom information on past performance is not available, the offeror may not be evaluated either favorably or unfavorably on past performance."

7. EVALUATION FACTORS FOR AWARD

The areas to be evaluated include Evaluation Factors, which will be evaluated based on the adjectival method of evaluation. The requirements specified in the solicitation are considered to be minimum requirements. A more favorable evaluation rating may be given for exceeding the minimum requirements. ***Note: Tabs 1-9 are shown below in descending order of importance, excluding Binder 2 (Price), which is approximately equal to all of the combined tab elements contained in Binder No. 1.***

EVALUATION FACTORS

Binder No. 1

Tab 1 - Design Firm Experience & Tab 2 - Construction Firm Experience (both equal)

Tab 3 - Design Personnel Experience, Tab 4 - Construction Personnel Experience (both equal)

Tab 5 - Past Performance, Design & Tab 6 - Past Performance, Construction (both equal)

Tab 7 - Project Management Plan (PMP)

Tab 8 - Schedule

Tab 9 - Utilization of Small Business Concerns

SUBJECTIVELY EVALUATED FACTORS

Binder No. 2

Price - (approximately equal to the combined tab elements in Binder 1)

Note that the evaluation factors listed above, other than Price, are listed in descending order of importance. A low evaluation rating for any tab, or combination of different tabs, may cause the proposal to be evaluated as unsatisfactory. Binder No. 2, Price will be evaluated in accordance the requirements listed in paragraph 9.1.2, EVALUATION OF PRICE.

8. BINDERS 1 AND 2 - PROPOSAL REQUIREMENTS AND SUBMISSION FORMAT

a. Offerors shall submit the original along with five (5) copies of their proposal; each shall consist of a 3-ring binder with Tabs (dividers) separating each Tab component described herein. Please designate as “Binder No. 1” on the original and copies.

Binder No.1

Tab 1 – Design Firm Experience

Tab 2 - Construction Firm Experience

Tab 3 - Design Personnel Experience

Tab 4 - Construction Personnel Experience

Tab 5 - Past Performance, Design

Tab 6 - Past Performance, Construction

Tab 7 - Project Management Plan (PMP)

Tab 8 - Schedule

Tab 9 - Utilization of Small Business Concerns

b. Offerors shall submit the original of their price proposal contained in a 3-ring binder and designated "Binder No. 2".

Binder 2

Single Tab with the Solicitation/Contract Form and Pricing Schedule (Section 00010) and Representations, Certifications and Other Statements of Offerors (Section 00600).

All proposals shall contain the evaluation requirements stated herein and every binder shall also contain: Table of Contents, List of Tables (if required), List of Figures (if required), List of Appendixes, and Name/Address/Telephone Number of the Offeror. Proposal clarity, organization (as requested in this solicitation) and cross referencing is mandatory. No material (information not part of proposal) shall be incorporated by reference. The offeror shall submit in the proposal the requested information specified herein.

Note: If you do not want the data submitted below disclosed by the Government, follow the procedure specified in Section 00100 INSTRUCTIONS, CONDITIONS AND NOTICES TO OFFERORS, paragraph: RESTRICTION ON DISCLOSURE AND USE OF DATA.

8.1. TAB 1 - DESIGN FIRM EXPERIENCE

8.1.1. Submission Requirements

The Design firm should demonstrate recent experience in designing projects of similar scope, complexity and size as this project. Similar scope and complexity include multi-level administrative facilities, admin/data facilities, data/ operations type facilities and information processing type facilities. Submit four (4) projects designed by your firm that most clearly illustrates your experience in designing facilities similar to the ADAL Mission Support Facility or similar project as defined above. Project examples should be at least $4,000,000 in construction cost and completed within the past five (5) years of the date that proposals for the ADAL Mission Support Facility are due. Project examples may include past experience as a prime design-build agent, or joint venture team, or design agent. If a joint venture has been formed for this contract only, include a brief description of previous experience with the Construction Contractor. **Indefinite-Delivery, Indefinite Quantity (IDIQ) Contracts, where numerous Task Orders are summed to meet the minimum construction dollar value identified herein, are not acceptable.** Example information should be on one or two typed sheets of paper and include the following for each facility: a description/scope; picture/photo; construction contract award amount; final construction cost; location; date when the project was started; original contract finish date and actual finish date. All summaries should contain the name, address, telephone and fax number of a representative of the owner (as well as one alternate individual not affiliated with your firm) familiar with your firm's experience on the project that can verify the experience cited.

In addition, these projects should demonstrate applicable Military Design experience and Design/Build experience. List on the one-two page examples any designers presented below in Tab 3 "Design Personnel" that participated in the design of constructed examples submitted above. No more than four (4) projects may be submitted. Submission of fewer than four (4) projects will reduce the proposer's rating in this category. Designed project examples may include (in descending order of importance):

- USAF Military design/build projects
- Military (Non-USAF) design-build projects
- Non-Military design-build projects
- Military non design-build projects
- Non-Military non design-build projects

8.1.2. Evaluation

The design firm's experience will be evaluated on projects similar to the ADAL Mission Support Facility as defined in Paragraph 8.1.1. Examples that are similar (scope, complexity, size) and meet the dollar amount requirements will be evaluated more favorably. In addition, more favorable ratings will be given for projects that are higher on the importance level as indicated in Paragraph.

8.1.1., with USAF Military design-build projects being the most favorable and Non-Military non design-build projects being the least favorable.

8.2. TAB - 2 CONSTRUCTION FIRM EXPERIENCE

8.2.1. Submission Requirements

In this tab, the offeror should submit four (4) project summaries of construction projects, which best illustrate the construction firms experience on construction of similar (scope, complexity, size) projects. Similar scope and complexity include multi-level administrative facilities, admin/data facilities, data/ operations type facilities and information processing type facilities. Submit four (4) projects constructed by your firm that most clearly illustrates your experience as a prime construction contractor on facilities similar to the ADAL Mission Support Facility. Partially completed projects may be submitted if they demonstrate completed similar project type features. Project examples should be at least $4,000,000 in construction cost and completed within the past five (5) years of the date that proposals for the ADAL Mission Support Facility are due. Project examples may include past experience as a prime design-build agent or joint venture team. If a joint venture has been formed for this contract only, include a brief description of the previous experiences as a joint venture team. **Indefinite-Delivery, Indefinite Quantity (IDIQ) Contracts, where numerous Task Orders are summed to meet the minimum construction dollar value identified herein, are not acceptable.** Example information should be on one or two typed sheets of paper and include the following for each facility constructed: a description/scope; picture/photo; construction contract award amount; final construction cost; location; date when the project was started; original contract finish date and actual finish date. All summaries should contain the name, address, telephone and fax number of a representative of the owner (as well as one alternate individual not affiliated with your firm) familiar with your firm's experience on the project that can verify the experience cited.

In addition, these constructed projects should demonstrate applicable Military Design/Build and Military Construction experience. List any key construction personnel presented below in Tab 4 "Construction Personnel" if they participated in the project examples submitted. No more than four (4) projects may be submitted. Submission of fewer than four (4) projects will reduce the proposer's rating in this category. Constructed project examples may include (in descending order of importance):

- USAF Military design/build projects constructed
- Military (Non-USAF) design/build projects constructed
- Military, non design/build projects constructed
- Non-Military design/build projects constructed
- Non-Military non design/build projects constructed

8.2.2. Evaluation

ADAL Mission Support Facility
Peterson AFB, CO
The prime construction firm's experience will be evaluated on completed construction projects similar to the ADAL Mission Support Facility as defined in Paragraph 8.2.1. Examples that are similar in scope (scope, complexity, size) and meet the dollar amount requirements will be evaluated more favorably. Partially completed project examples will be evaluated less favorably than those examples submitted that are completed. In addition, more favorable ratings will be given for projects that are higher on the importance level as indicated in Paragraph. 8.2.1., with constructed USAF Military design-build projects being the most favorable and Non-Military non design-build constructed projects being the least favorable.

8.3. TAB 3 - DESIGN PERSONNEL EXPERIENCE

8.3.1. Submission Requirements

Submit one or two page resumes of lead and support design personnel for categories listed below who will work on this project. Resumes for each designer should have the following: Design Project Manager and lead designers should be registered professional architects or engineers (preferably registered in the state of Colorado) with a minimum of 5 years experience as a registered professional in design. Indicate design project experience with past firms up to current status over the last five (5) years. Include an Organizational Chart identifying each design team member proposed to work on the ADAL Mission Support Facility. Resumes for each designer shall have associated **dates (beginning and ending)** for their submitted experience on projects cited. If because of reasons beyond the control of the design team, the named individuals are not able to fulfill this obligation, replacement personnel having similar education and experience, shall be presented for acceptance by the Contracting Officer.

- Project Manager (Registered Architect or Engineer)
- Registered Architect
- Registered Structural Engineer with training related to the 1997 National Earthquake Hazard Reduction Program (NEHRP)
- Registered Mechanical Engineer
- Registered Electrical Engineer
- Registered Fire Protection Engineer
- Registered Civil Engineer
- Registered Landscape Architect
- Interior Designer - Certified by the National Council of Interior Designers Qualifications (NCIDQ
- Corrosion Engineer

Design personnel resumes should include past examples of constructed projects the Project Manager and lead designers/design team have participated on (preferably together as a team). Project examples may include (in descending order of importance):

- Design on USAF Military design/build projects

- Design on Military (Non-USAF) design-build projects
- Design on Non-Military design-build projects
- Design on Military, non design-build projects
- Design on Non-Military non design-build projects

8.3.2. Evaluation

Qualifications of design personnel assigned to this project (design/build experience on past projects, design experience on past projects and professional registration) will be evaluated. Lead personnel will be evaluated more favorably for relatable military design-build project experience. In the list above, which indicates the descending order of importance for types of projects designed by personnel, more favorable designer personnel ratings are given for design experience on Military USAF design-build projects, and range to a least favorable rating given for non-military, non design-build design experience. More favorable ratings are awarded if lead personnel are registered in the state of Colorado. More favorable ratings are awarded for projects where personnel have previous experience with other members of the design team (i.e. Team members participating together on projects submitted under Tab 1.)

8.4. TAB 4 - CONSTRUCTION PERSONNEL EXPERIENCE

8.4.1. Submission Requirements

In this tab, the proposer should present the names and resumes for key construction personnel that will be assigned to this project. In addition, provide a summary of the duties and responsibilities of these individuals, which clearly indicate separate duties and responsibilities for each individual. As a minimum, this tab should include data on the following personnel: the Project Manager; the Project Superintendent; the CQC System Manager.

The proposal should clearly present the credentials of each person, and shall show that each meets the requirements listed below. Resumes should include examples of project experience (including what capacity the individual served on each project), as well as the **dates (beginning and ending)** employed on each project, and the monetary size of each project cited as experience. In addition, educational qualifications of the proposed personnel shall be submitted. If because of reasons beyond the control of the construction firm, the individuals named in this proposal are not able to be utilized on this project, replacement personnel with similar skills and experience shall be presented for acceptance and approval by the Contracting Officer. Replacement individuals for this project shall be required to have qualifications and experience meeting or exceeding those identified in the proposal. The following qualifications should be met:

- **Project Manager:** The Project Manager should be a registered engineer, registered architect or graduate construction manager and should have at least 5 years experience as a Project Manager on projects similar to the ADAL Mission Support Facility.

- **Project Superintendent:** The Project Superintendent should be a graduate engineer or graduate construction manager with a minimum of 5 years experience as a Project Superintendent on facilities similar to the ADAL Mission Support Facility; or an experienced construction person with a minimum of 7 years experience as a Project Superintendent on projects similar to the ADAL Mission Support Facility.

- **Contractor Quality Control (CQC) System Manager:** The Contractor Quality Control System (CQC) Manager should be a graduate engineer with a minimum of 3 years experience as a CQC System Manager on projects similar to the ADAL Mission Support Facility; or an experienced construction person with a minimum of 5 years experience as a CQC System Manager on projects similar to the ADAL Mission Support Facility.

8.4.2. Evaluation

Qualifications of key construction personnel assigned to this project will be considered. More favorable evaluation ratings will be given for military construction project experience, longevity of experience at the position being proposed and education. Prior experience on military construction projects is preferred and will be evaluated more favorably. In addition, more favorable evaluations ratings will be given for longevity of experience at the position being proposed and education.

8.5. TAB 5 - PAST PERFORMANCE, DESIGN

8.5.1. Submission Requirements

Submit past performance ratings. **All** Architect-Engineer Contract Administration Support System (ACASS) Performance Evaluations ratings for all Corps of Engineer projects designed by the proposer in the past five years should be submitted. For projects cited in Tab 1, which were constructed for other government entities, submit the performance appraisal sheets used by that government entity. For each project cited in Tab 1 not covered in the ACASS database or other Design Performance Rating System of other Government entity, submit Form DD2631 (a blank copy is attached to this section). DD2631 shall be completed by an owner or owner's representative and not affiliated with your firm. If an offeror has no past performance ratings in ACASS, or other Design Performance Rating System used by other government entities and no Performance Evaluation sheets are available for Non-Military work, a neutral rating will be given. The government reserves the right to pull all copies of ACASS records contained in the Corps of Engineers ACASS database. Copies of records contained in the Corps of Engineers ACASS Database may be requested by fax on company letterhead at the following telefax number: (503) 808-4596.

8.5.2. Evaluation

Higher evaluation ratings may be awarded for Outstanding evaluations. In descending order, lower ratings may be given for past evaluations of Above Average, Satisfactory, Marginal, and Unsatisfactory. If an offeror has no past performance ratings in ACASS, Performance Evaluation Worksheets, or other Construction Performance Rating Systems, a neutral rating will be given. ACASS Ratings will be given more weight than equivalent performance ratings for other types of evaluations. The Government may, at its discretion, contact references cited to verify the information contained therein.

8.6. TAB 6 - PAST PERFORMANCE, CONSTRUCTION

8.6.1. Submission Requirements

Submit past performance ratings. **All** Construction Contract Administration Support System (CCASS) ratings for all Corps of Engineer projects constructed by the proposer in the past five years should be submitted. For projects cited in Tab 2, which were constructed for other government entities, submit the performance appraisal sheets used by that government entity. For each project cited in Tab 2 not covered in the CCASS database or other Construction Performance Rating System of other Government entity, submit Form DD2626 (a blank copy is attached to this section). DD2626 shall be completed by an owner or owner's representative and not affiliated with your firm. If an offeror has no past performance ratings in CCASS, or other Construction Performance Rating System used by other government entities and no Performance Evaluation sheets are available for Non-Military work, a neutral rating will be given. The government reserves the right to pull all copies of CCASS records contained in the Corps of Engineers CCASS database. Copies of records contained in the Corps of Engineers CCASS Database may be requested by fax on company letterhead at the following telefax number: (503) 808-4596.

8.6.2. Evaluation

Higher evaluation ratings may be awarded for Outstanding evaluations. In descending order, lower ratings may be given for past evaluations of Above Average, Satisfactory, Marginal, and Unsatisfactory. If an offeror has no past performance ratings in CCASS, Performance Evaluation Worksheets, or other Construction Performance Rating Systems, a neutral rating will be given. CCASS Ratings will be given more weight than equivalent performance ratings for other types of evaluations. The Government may, at its discretion, contact references cited to verify the information contained therein.

8.7. TAB 7 - PROJECT MANAGEMENT PLAN (PMP)

8.7.1. Submission Requirements

The offeror should provide a comprehensive PMP developed specifically for this project, which

will become an integrated part of the resultant contract. The PMP should include an explanation of the management approach for the design and construction team. It should clearly show how the prime contractor will manage the design and construction of the project to insure a well-coordinated quality product, completed on time and with a minimum amount of contract modifications. It should include: method of management of all sub-contractors and design team, specific quality control procedures, phasing, schedule development and methods to be utilized to maintain the schedule, and an organization chart showing the inter-relationship of management and various team components, including the Corps of Engineers. In addition, it should address the acquisition of environmental permits in a timely fashion, safety, preparation and submission of As-Built documents upon construction completion, and contract close-out. The information in the PMP should make it clear that the offeror has the ability to deliver a quality product and effectively manage all subcontractors and designers on the team, as well as the ability to coordinate all work throughout the construction phase. As a minimum, the PMP should address all of the following:

- Management Approach
- Quality Control Procedures
- Sub-Contractor and Design Team Management
- Schedule development and procedures to maintain performance schedule
- Organization Chart showing inter-relationship of management and various team components.
- Acquisition of Environmental Permits
- Safety
- Preparation and submission of As-Built documents
- Contract close-out

8.7.2. Evaluation

The quality of the offeror's PMP will be evaluated. Higher evaluation ratings will be achieved for a PMP which addresses all items requested in a thorough and comprehensive manner, and that demonstrates an effective plan for design and construction and close-out of the project.

8.8. TAB 8 – SCHEDULE

8.8.1. Submission Requirements

The Offeror should propose the number of calendar days of construction required to complete the facility. Their schedule should consist of a two or three page schedule presenting the contractors schedule decision, and illustrated by a bar or gantt chart showing phasing of major items of work. The number of days proposed on the schedule must match that entered by the offeror on the SF 1442, Block 11, Page 00010-1 of the RFP. The number of days cannot exceed 540 calendar days. The number of days proposed by the Offeror will become a contract requirement for the successful Offeror. A Network Analysis System (NAS) or Critical Path Method (CPM) schedule is **NOT**

ADAL Mission Support Facility
Peterson AFB, CO
required for this Tab.

8.8.2. Evaluation

The offeror's proposed construction duration and schedule will be evaluated. The number of days may not exceed 540 calendar days. Higher evaluation ratings may be given for shorter construction durations, while lower ratings may be given for longer construction durations. In addition, schedules depicting unrealistically short construction duration may be given lower ratings than those showing a more realistic duration.

8.9. TAB 9 – UTILIZATION OF SMALL BUSINESS CONCERNS

8.9.1. Submission Requirements

The Offeror, **if not a Small Business Concern**, should demonstrate through submission of a narrative the offeror's plan to identify, commit and utilize Small Business **(SB)**, Small Disadvantaged Business **(SDB)**, HUBZone Small Business, Women-owned Small Business **(WOSB)** concerns, and Service-Disabled Veterans **(SDV)** as team members, subcontractors and/or suppliers in the performance of the resultant contract of this solicitation. **Note that this Tab is not requesting a Sub-Contracting Plan.** It is the policy of the U.S. Army Corps of Engineers, Omaha District (CENWO) that small business concerns have the maximum practicable opportunity to participate in performing contracts let by the Contracting Activity (CENWO-CT). It is further the policy of CENWO that its prospective prime contractors **(Large Business Only)** demonstrate the extent they plan to utilize small business concerns in any resultant contract and provide assurance in its offer that small business concerns will have maximum subcontracting opportunities in its prime contracts. **If the contractor is a Small Business Concern, this tab may include a single sheet stating that the contractor is a Small Business Concern, in lieu of compiling the information requested herein.** The evaluation of utilization and participation of small business concerns is separate and distinct from the requirement at Federal Acquisition Regulation (FAR) Clause 52.219-9, Small Business Subcontracting Plan.

8.9.1.1. Definitions:

a. Small Business Concerns. For the purpose of this section, small business concerns refer to Small Business, Small Disadvantaged Business, Women-owned Small Business, HUBZone Small Business, and Service-Disabled Veterans.

b. Prime Contractor. For the purpose of this section, a prime contractor refers to both large and small contractors.

c. Offeror. For the purpose of this section, offeror refers to both large and small contractors.

d. Target. "Target" is the term the U.S. Army Corps of Engineers uses to replace “floor” and or “Goal”. It represents the minimum level for small business performance.

8.9.1.2. Tab 9 Required Information:

This tab should include the following information for purposes of proposal evaluation:

a. Development of Percentage Floors. Development of percentage floors based on planned subcontracting which is challenging yet realistic. **(Applicable to Large Business Only).** The following floors are considered reasonable and obtainable for projects awarded in Fiscal Year 2003:

- 57.2% of planned subcontracting dollars to be placed with all small business concerns.
- 10.0% of planned subcontracting dollars to be placed with those small business concerns owned and controlled by socially and economically disadvantaged individuals.
- 10.0% of planned subcontracting dollars to be placed with women-owned small business concerns.
- 3.0% of planned subcontracting dollars with Severely Disabled Veterans Small Business concerns.
- 3.0% of planned subcontracting dollars with Hubzones Small Business Concerns.

b. Past Performance in Meeting Small Disadvantaged Business Floors. Demonstrate how floors for Small Disadvantaged Business (SDB) participation were satisfied on previous contracts, extent to which the prime has historically been successful in establishing realistic yet challenging goals, and evidences the ability to achieve them. The Offeror should submit data on Past Performance in meeting small business goals which will demonstrate how goals for small business concerns participation on previous contracts was satisfied. The data to be provided should include: (1) Client/Customer (2) Contract/Identification Number (3) Project Description (4) Contract Amount (5) Goals established for that project (6) Actual percentages met for that contract (7) Reference or Point of Contract (to include address and telephone number).

c. Demonstrate utilization and participation of small business concerns, clearly stated factors that demonstrate strong commitments to use SB, SDB, WOSB, SDVOSB, and HubZone as

team members, subcontractors, and/or suppliers. The proposal should clearly state positive steps taken to demonstrate a strong commitment to use small business concerns. Enforceable commitments to use small business concerns will be weighed more heavily than non-enforceable ones.

d. Description of supplies and services to be subcontracted and planned for subcontracting to SBs, SDBs, WOSBs , SDVOSBs, and HUB-Zones.

e. Assurances that the offeror will include the clause at FAR 52.219-8, Utilization of Small Business Concerns in all subcontracts that offer further subcontracting opportunities, and that the offeror will require subcontractors (including small business concerns) that receive subcontracts in excess of $500,000 ($1,000,000 for construction) to adopt a small business participation program similar to the requirements of the resultant contract.

8.9.2. Evaluation

Proposals will be evaluated on their proposed plan for the following areas. Those firms providing all information requested, demonstrating a strong commitment to utilization of Small Business, and demonstrating past performance in meeting small business goals will be given higher ratings than those that do not.

a. Development of Percentage targets.
b. Past Performance in Meeting Small Business targets.
c. Demonstration of a Strong Commitment to Utilization and Participation of Small Business Concerns
d. Description of Supplies and Services to be Subcontracted
e. Assurances that the offeror (if a large business) will include the FAR Clause 52.219-8 Utilization of Small Business Concerns in all Subcontracts

If the offeror is a Small Business Concern, they may include a single sheet stating that the offeror is a Small Business Concern, in lieu of compiling the information requested herein. Small businesses will be given the maximum rating for this factor.

9. BINDER NO. 2 - PRICE

9.1.1. Submission Requirements

The offeror should submit **only an original** of the following information **in a separate binder**. Five copies of the information in this Tab are **not** required and should not be submitted. The binder shall contain the following information:

a. Section 00010, Solicitation/Contract Form and Pricing Schedule. Include the completed SF Form 1442 (Pages 00010-1 and 00010-2) of the RFP, along with the completed Pricing Schedule (Page 00010-3, 4). The total cost for the design and construction will be considered for evaluation, including all options. Proposed price for the design and construction of this project will be considered for evaluation and assist in establishment of the competitive range (if one is established).

b. Section 00600, Representations, Certifications and Other Statements of Offerors. These items are not considered for evaluation, but are required as part of the offeror's proposal of this solicitation. The information requested in this Section needs to be fully completed. The submitted information will be reviewed for completeness by Contracting Personnel.

c. Pre-Award Survey Information (Local Provision) (Sep 93).
In accordance with FAR Clause 52.228-15 PERFORMANCE AND PAYMENT BONDS, the following information should be submitted with each offer. Submission of this information will expedite the award process.

(1) Financial:

a. Name, address, and fax number of Financial Institution
b. Name and phone number of finance individual (primary and alternate) to be contacted for information

(2) Bonding Information: Provide the name, address, regular phone number and fax number of the offeror's Surety Company.

d. Small Business Sub-Contracting Plan. If your firm is a large business and your proposal **exceeds $1,000,000** or more for construction, a Small Business Subcontracting Plan is required at the time your offer is submitted. A SAMPLE Small Business Subcontracting Plan is attached to this section of the solicitation. This plan is not a part of the technical evaluation. However, an acceptable Sub-Contracting plan must be approved and in place prior to contract award. Submission with the proposal will expedite contract award. The plan will be reviewed for compliance with the established criteria in Appendix DD, which is attached to this section of the solicitation.

9.1.2. Evaluation of Price

Price will be subjectively evaluated for Best Value and Realism by the Government, considering total cost of the basic and all option items to reach the best value for the Government, price and other factors considered.

(a) Best Value is defined as the expected outcome of an acquisition, that in the Government's estimation, provides the greatest overall benefit in response to the requirement, Technical and Price factors considered.

(b) Realism is defined as costs in an offeror's proposal considered realistic for the work

to be performed, reflecting a clear understanding of the requirements, and consistent with the various elements of the offeror's technical proposal (all Tabs other than Price). Note that all evaluation factors other than Price, when combined, are approximately equal to the Price evaluation.

Other elements requested in Binder No. 2 will not be used in the Best Value Analysis, but are required as part of the proposal.

10. JOINT VENTURES

No contract may be awarded to a joint venture that is not registered in the Central Contractor Register (CCR). Joint ventures may register in the following way:

a. The firm that will be the recipient of payments should be registered in the CCR and have a DUNS number. This firm is considered in the CCR to be the "mother firm." If no money is to go to any other firm in the joint venture, the mother firm may make the other firm in the joint venture a "child." This child will be assigned the mother firm's CCR number with an additional four (4) numbers attached. Since the child firm is not receiving any payments, they do not need to get a DUNS number. HOWEVER, in order to cover all possibilities, it might be advisable to have each firm registered in the CCR.

b. Call the CCR at 1-888-227-2423, choose option "0" to get the mother -child relationship set up. DUN & Bradstreet phone number is 1-800-333-0505. See Section 00100 Instructions, Conditions and Notices to Offerors for Internet and Fax Registration options.

c. If the joint venture has a newly created name, then it must have its own DUNS number and register as such in the CCR.

d. In the cover letter of your proposal, provide the complete names, addresses, and phone and fax numbers of the two firms in the joint venture.

e. Signature requirements: SF 1442, SOLICITATION, OFFER, AND AWARD (pages 00010-1 and 00010-2), Block 20 requires that the name and title of the person authorized to sign the offer for the joint venture be provided.

f. Corporate certificate: Ensure that joint-venture portion is completed by both firms.

g. In the case of a joint venture, the following is required: A contract with joint venturers may involve any combination of individuals, partnerships, or corporations. The contract shall be signed by each participant in the joint venture in the manner prescribed below for each type of participant. When a corporation is participating, the Contracting Officer shall verify that the corporation is authorized to participate in the joint venture.

(1) Individuals. A contract with an individual shall be signed by that individual. A contract with an individual doing business as a firm shall be signed by that individual, and the signature shall be followed by the individual's types, stamped, or printed name and the words "an

individual doing business as …….." [insert name of firm].

(2) Partnerships. A contract with a partnership shall be signed in the partnership name. Before signing for the Government, the Contracting Officer shall obtain a list of all partners and ensure that the individual(s) signing for the partnership have authority to bind the partnership.

(3) Corporations. A contract with a corporation shall be signed in the corporate name, followed by the word "by" and the signature and title of the person authorized to sign. The Contracting Officer shall ensure that the person signing for the corporation has authority to bind the corporation.

(4) In addition to the requirements stated above, and to assure a single point of contact for resolution of contractual matters and payments, the Contracting Officer shall obtain a certificate signed by each participant in the joint venture as follows: In the proposal include the following statement:

"The parties hereto expressly understand and agree as follows:

a. **(name, title, and company)** is the principal representative of the joint venture. As such, all communications regarding the administration of the contract and the performance of the work thereunder may be directed to him or her. In the absence of **(same name, title, and company), (enter name, title, and company of alternate)** is the alternate principal representative of the joint venture.

b. Direction, approvals, required notices, and all other communications from the Government to the joint venture, including transmittal of payments by the Government, shall be directed to **(enter name, title, and company of principal),** principal representative of the joint venture**."**

11. COMPETITIVE RANGE

Upon completion of proposal evaluation, if discussions are determined to be needed, the Government may establish a competitive range for the purpose of conducting written discussion. The competitive range shall be determined on the basis of the factors stated in the solicitation and shall include all proposals that have a reasonable chance of being selected for award. **The Government intends to award a contract on the basis of initial offers received, without discussions.** Therefore, each initial offer should contain the offeror's best terms from a cost or price and technical standpoint. Notwithstanding, the Government may conduct written discussions with all responsible offerors who submit proposals and are considered within the competitive range. Offerors submitting proposals determined outside of the competitive range (lacking a reasonable chance of being selected for contract award) will be notified in writing at the earliest practicable time.

12. CLARIFICATIONS AND DISCUSSIONS.

For definitions of Evaluation terms referenced below, see paragraph 6 (e) above. The information provided in this paragraph includes procedural information associated with clarifications and discussions.

a. Clarifications**.** During the evaluation, if a proposal requires clarification for the Board to complete its evaluation, a written list of questions and/or comments to be discussed with the offeror will be provided to the offeror by the Contracting Representative or Contracting Officer. Any request for clarifications will be issued by letter, by the Contracting Officer. All contact with offerors will be through the Contracting Division. There will be no direct contact by the SSEB with any offeror(s).

b. Communications. Communications as defined in paragraph 6(e)(4) above, between the Government and offerors, after receipt of proposals, leading to establishment of the competitive range will not occur without the participation of the Contracting Officer.

c. Discussions. If discussions, as defined in paragraph 6(e)(6) above are necessary, written and/or verbal, they will be conducted with all firms in the competitive range once a written Determination to hold such discussions has been approved by the Contracting Officer. FAR 15.306(d)(3) and the Comptroller General Decisions indicate that all content of discussions are a matter within the Contracting Officer's judgment. Discussions involve an exchange of information essential to determining the acceptability of a proposal. During the exchange of information, offerors must be informed of all deficiencies and significant weaknesses in their proposals and offered an opportunity to revise their proposals. No technical leveling, transfusion or auction techniques shall result from discussions. Discussions will be concluded as of the date specified for receipt of a Final Revised Proposal from those offerors determined to be in the competitive range in accordance with FAR 15.306(c)(2).

13. FINAL PROPOSAL REVISIONS

If discussions are held, upon their completion the Government shall issue to all Offerors within the competitive range a request for final proposal revisions specifying the exact date and time for submission of the revision. Any verbal revisions to proposals made during the course of discussions must be included in the offeror's written Final Revised Proposal. Any verbal revisions not included in the final revision will not be considered in re-evaluating the proposals. Any verbal request for a Final Revised Proposal shall be confirmed in writing. The confirmation shall include:

(1) Notice that discussions are concluded.
(2) Notice that this is the opportunity to submit a Final Revised Proposal.
(3) Establishment of a common cutoff date and time that allows the offerors reasonable opportunity for submission of written Proposal revisions.

(4) Notice that Proposal Revisions, and modifications thereto, must be received by the date, time, and in the place specified in the notice, or they are subject to the Late Offers provision in the solicitation in Section 00100.

Following the evaluation of final proposal revisions, the Government will select the offeror whose initial and final proposal revision presents the Best Value and is most advantageous, considering only the factors included in the solicitation, to the Government.

14. DEBRIEFING

Each offeror, successful or unsuccessful, will have the opportunity, in accordance with Federal Acquisition Regulation (FAR) 15.505 and 15.506, to receive one debriefing. Offerors are required to submit a written request for debriefing and discussion of the evaluation of its proposal within three(3) calendar days after receipt of notice of award. The debriefing of all offerors, successful or unsuccessful, will be conducted by the Contracting Officer in accordance with the FAR. Each offeror shall be provided only one debriefing, either post award or pre-award, at their choosing. The Contracting Specialist will coordinate and schedule the debriefings. Debriefing participation will include the Contracting Officer, chairperson of the SSEB, and Contracting Specialist with additional support from other members of the SSEB as required.

PERFORMANCE EVALUATION (CONSTRUCTION)

1. CONTRACT NUMBER

2. CEC NUMBER

IMPORTANT: Be sure to complete Part III - Evaluation of Performance Elements on reverse.

PART I - GENERAL CONTRACT DATA

3. TYPE OF EVALUATION *(X one)*

☐ INTERIM *(List percentage _____%)* ☐ FINAL ☐ AMENDED

4. TERMINATED FOR DEFAULT ☐

5. CONTRACTOR *(Name, Address, and ZIP Code)*

6.a. PROCUREMENT METHOD *(X one)*

☐ SEALED BID ☐ NEGOTIATED

b. TYPE OF CONTRACT *(X one)*

☐ FIRM FIXED PRICE ☐ COST REIMBURSEMENT

☐ OTHER *(Specify)*

7. DESCRIPTION AND LOCATION OF WORK

8. TYPE AND PERCENT OF SUBCONTRACTING

9. FISCAL DATA ▶	a. AMOUNT OF BASIC CONTRACT $	b. TOTAL AMOUNT OF MODIFICATIONS $	c. LIQUIDATED DAMAGES ASSESSED $	d. NET AMOUNT PAID CONTRACTOR $
10. SIGNIFICANT DATES ▶	a. DATE OF AWARD	b. ORIGINAL CONTRACT COMPLETION DATE	c. REVISED CONTRACT COMPLETION DATE	d. DATE WORK ACCEPTED

PART II - PERFORMANCE EVALUATION OF CONTRACTOR

11. OVERALL RATING *(X appropriate block)*

☐ OUTSTANDING ☐ ABOVE AVERAGE ☐ SATISFACTORY ☐ MARGINAL ☐ UNSATISFACTORY *(Explain in Item 20 on reverse)*

12. EVALUATED BY

a. ORGANIZATION *(Name and Address (Include ZIP Code))*		b. TELEPHONE NUMBER *(Include Area Code)*
c. NAME AND TITLE	d. SIGNATURE	e. DATE

13. EVALUATION REVIEWED BY

a. ORGANIZATION *(Name and Address (Include ZIP Code))*		b. TELEPHONE NUMBER *(Include Area Code)*
c. NAME AND TITLE	d. SIGNATURE	e. DATE

14. AGENCY USE *(Distribution, etc.)*

PART III - EVALUATION OF PERFORMANCE ELEMENTS

N/A = NOT APPLICABLE O = OUTSTANDING A = ABOVE AVERAGE S = SATISFACTORY M = MARGINAL U = UNSATISFACTORY

15. QUALITY CONTROL	N/A	O	A	S	M	U
a. QUALITY OF WORKMANSHIP						
b. ADEQUACY OF THE CQC PLAN						
c. IMPLEMENTATION OF THE CQC PLAN						
d. QUALITY OF QC DOCUMENTATION						
e. STORAGE OF MATERIALS						
f. ADEQUACY OF MATERIALS						
g. ADEQUACY OF SUBMITTALS						
h. ADEQUACY OF QC TESTING						
i. ADEQUACY OF AS-BUILTS						
j. USE OF SPECIFIED MATERIALS						
k. IDENTIFICATION/CORRECTION OF DEFICIENT WORK IN A TIMELY MANNER						

16. EFFECTIVENESS OF MANAGEMENT	N/A	O	A	S	M	U
a. COOPERATION AND RESPONSIVENESS						
b. MANAGEMENT OF RESOURCES/ PERSONNEL						
c. COORDINATION AND CONTROL OF SUBCONTRACTOR(S)						
d. ADEQUACY OF SITE CLEAN-UP						
e. EFFECTIVENESS OF JOB-SITE SUPERVISION						
f. COMPLIANCE WITH LAWS AND REGULATIONS						
g. PROFESSIONAL CONDUCT						
h. REVIEW/RESOLUTION OF SUBCONTRACTOR'S ISSUES						
i. IMPLEMENTATION OF SUBCONTRACTING PLAN						

17. TIMELY PERFORMANCE						
a. ADEQUACY OF INITIAL PROGRESS SCHEDULE						
b. ADHERENCE TO APPROVED SCHEDULE						
c. RESOLUTION OF DELAYS						
d. SUBMISSION OF REQUIRED DOCUMENTATION						
e. COMPLETION OF PUNCHLIST ITEMS						
f. SUBMISSION OF UPDATED AND REVISED PROGRESS SCHEDULES						
g. WARRANTY RESPONSE						

18. COMPLIANCE WITH LABOR STANDARDS						
a. CORRECTION OF NOTED DEFICIENCIES						
b. PAYROLLS PROPERLY COMPLETED AND SUBMITTED						
c. COMPLIANCE WITH LABOR LAWS AND REGULATIONS WITH SPECIFIC ATTENTION TO THE DAVIS-BACON ACT AND EEO REQUIREMENTS						
19. COMPLIANCE WITH SAFETY STANDARDS						
a. ADEQUACY OF SAFETY PLAN						
b. IMPLEMENTATION OF SAFETY PLAN						
c. CORRECTION OF NOTED						

20. REMARKS *(Explanation of unsatisfactory evaluation is required. Other comments are optional. Provide facts concerning specific events or actions to justify the evaluation. These data must be in sufficient detail to assist contracting officers in determining the contractor's responsibility. Continue on separate sheet(s), if needed.)*

PERFORMANCE EVALUATION
(ARCHITECT-ENGINEER)

A-E CONTRACTOR I.D. NUMBER *(For ACASS use only)*

1. A-E CONTRACT NUMBER

2. CONSTRUCTION CONTRACT NUMBER

IMPORTANT: Be sure to complete back of form. If additional space is necessary for any item, use Remarks section on back.

3. TYPE OF EVALUATION

a. PHASE OF COMPLETION
☐ INTERIM (_____ %) ☐ FINAL

b. COMPLETION *(X one)*
☐ DESIGN ☐ ENGINEERING SERVICES ☐ CONSTRUCTION

c. X IF APPLICABLE
☐ TERMINATION *(Explain in Remarks)*

4. PROJECT NUMBER

5. DELIVERY ORDER NO.(S) *(if applicable)*

6. NAME AND ADDRESS OF A-E CONTRACTOR

7a. PROJECT TITLE AND LOCATION

7b. DESCRIPTION OF PROJECT IF NOT EXPLAINED BY TITLE

8. NAME, ADDRESS AND PHONE NUMBER OF OFFICE RESPONSIBLE FOR:

a. SELECTION OF A-E CONTRACTOR

b. NEGOTIATION/AWARD OF A-E CONTRACT

c. ADMINISTRATION OF A-E CONTRACT

d. ADMINISTRATION OF CONSTRUCTION CONTRACT

9. A-E CONTRACT DATA *(Items 9d thru 9g are not applicable during construction unless there are modifications to the A-E contract.)*

a. TYPE OF WORK *(Design, study, etc.)*

b. TYPE OF CONTRACT
☐ FIRM FIXED-PRICE
☐ COST-REIMBURSEMENT
☐ INDEFINITE DELIVERY/INDEFINITE QUANTITY (ID/IQ)
☐ TASK ORDER UNDER ID/IQ
☐ OTHER *(Specify)*

c. PROJECT COMPLEXITY
☐ DIFFICULT ☐ ROUTINE

d. CONTRACT OR TASK ORDER AMOUNT

(1) INITIAL FEE	(2) CONTRACT OR TASK ORDER MODIFICATIONS		(3) TOTAL FEE
	NO.	AMOUNT	
$		$	$

e. CONTRACT OR TASK ORDER AWARD DATE

f. NEGOTIATED CONTRACT OR TASK ORDER COMPLETION DATE *(or number of days) (Including extensions)*

g. ACTUAL CONTRACT OR TASK ORDER COMPLETION DATE *(or number of days)*

10. CONSTRUCTION CONTRACT DATA *(Not applicable at completion of design or engineering services not involving construction.)*

a. CONSTRUCTION COSTS	(1) AUTHORIZED CONSTRUCTION COST	(2) A-E ESTIMATE FOR BID ITEMS AWARDED	(3) AWARD AMOUNT
	$	$	$

b. DATA AT TIME OF CONSTRUCTION COMPLETION *(Completion date _____)*	NUMBER	TOTAL COST
(1) CONSTRUCTION MODIFICATIONS		$
(2) CONSTRUCTION MODIFICATIONS ARISING FROM DESIGN DEFICIENCIES		$

11. A-E LIABILITY ☐ NONE ☐ UNDETERMINED ☐ PENDING $ ☐ SETTLEMENT $

12. OVERALL RATING
☐ EXCEPTIONAL ☐ SATISFACTORY ☐ UNSATISFACTORY
☐ VERY GOOD ☐ MARGINAL

13. RECOMMENDED FOR FUTURE CONTRACTS?
☐ YES ☐ CONDITIONALLY
☐ NO *(Explain "No" or "Conditionally" in Remarks.)*

14a. NAME, TITLE AND OFFICE OF RATING OFFICIAL

TELEPHONE NUMBER:

b. SIGNATURE

c. DATE

15a. NAME, TITLE AND OFFICE OF REVIEWING OFFICIAL

TELEPHONE NUMBER:

b. SIGNATURE

c. DATE *(Official Report date)*

AGENCY USE: *(Distribution, etc.)*

16. QUALITY OF A-E SERVICES BY DISCIPLINE *(Completion mandatory for both DESIGN and CONSTRUCTION phases and Engineering Services)*

a. DISCIPLINES *(If applicable)*	DESIGN/SERVICES					CONSTRUCTION				
	EXCEP-TIONAL	VERY GOOD	SATIS-FACTORY	MARGINAL	UNSATIS-FACTORY	EXCEP-TIONAL	VERY GOOD	SATIS-FACTORY	MARGINAL	UNSATIS-FACTORY
Architectural										
Structural										
Civil										
Mechanical										
Electrical										
Fire Protection										
Surveying, Mapping, & Geospatial Information Svcs.										
Cost Estimating										
Value Engineering										
Environmental Engineering										
Geotechnical Engineering										
Master Planning										
Hydrology										
Chemical Engineering										
Geology										
Chemistry										
Risk Assessment										
Safety/Occupational Health										
Hydrographic Surveying										

17. DESIGN PHASE OR ENGINEERING SERVICES *(Quality of A-E Services Evaluation)*

ATTRIBUTES *(If applicable)*	EXCEP-TIONAL	VERY GOOD	SATIS-FACTORY	MARGINAL	UNSATIS-FACTORY
Thoroughness of Site Investigation/Field Analysis					
Quality Control Procedures and Execution					
Plans/Specs Accurate and Coordinated					
Plans Clear and Detailed Sufficiently					
Management and Adherence to Schedules					
Meeting Cost Limitations					
Suitability of Design or Study Results					
Solution Environmentally Suitable					
Cooperativeness and Responsiveness					
Quality of Briefing and Presentations					
Innovative Approaches/Technologies					
Implementation of Sm. Business Subcontracting Plan					

16b. DISCIPLINE, NAME AND ADDRESS OF KEY CONSULTANT(S) *(If applicable)*

18. HOW MANY 100% FINAL RESUBMITTALS WERE REQUIRED BECAUSE OF POOR A-E PERFORMANCE?

19. CONSTRUCTION PHASE *(Quality of A-E Services Evaluation)*

ATTRIBUTES *(If applicable)*	EXCEP-TIONAL	VERY GOOD	SATIS-FACTORY	MARGINAL	UNSATIS-FACTORY
Plans Clear and Detailed Sufficiently					
Drawings Reflect True Conditions					
Plans/Specs Accurate and Coordinated					
Design Constructibility					
Cooperativeness and Responsiveness					
Timeliness and Quality of Processing Submittals					
Product & Equipment Selections Readily Available					
Timeliness of Answers to Design Questions					
Field Consultation and Investigations					
Quality of Construction Support Services					

20. REMARKS *(Attach additional sheet(s) or documentation if necessary)*

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SMALL BUSINESS SUBCONTRACTING PLAN
SAMPLE

DATE: _____

CONTRACTOR: _____

ADDRESS: _____

PHONE NO: _____

PROJECT TITLE: _____

SOLICITATION NO: _____

1. In accordance with the contract clauses at 52.219-8 and 52.219-9, (name of contractor) submits the following Subcontracting Plan for Small Business (SB), Small Disadvantaged Business (SDB), Women-owned Business (WOSB), Historically Underutilized Business Zone (HubZone), Historical Black Colleges and Minority Institutions (HBCU/MI) Service-Veteran-Owned Small Business (SVOSB) Concerns.

2. Corresponding dollar values for percentages cited in paragraph 3:

a. Total contract amount is $_____.

b. Total dollars to be subcontracted (to all types of businesses): $_____.

c. Total dollars to be subcontracted to Small Business (SB) concerns: $_____.

d. Total dollars to be subcontracted to Small Disadvantaged Business (SDB) concerns: $_____.

e. Total dollars to be subcontracted to Woman-Owned Small Business (WOSB) concerns: $_____.

f. Total dollars to be subcontracted to Hubzone business concerns: $_____.

g. Total dollars to be subcontracted to Historical Black Colleges and Minority Institutions (HBCU/MI: $_____.

h. Total dollars to be subcontracted to Service-Disable Veteran-Owned Small Business (SDVOB): $_____.

3. The following percentage goals (expressed in terms of a percentage of total planned subcontracting dollars) are applicable to the contract awarded under the solicitation cited above.

a. The total estimated percentage of all planned subcontracting to all types of business concerns under this contract is: _____%.

b. Small Business Concerns: _____% of total planned subcontracting dollars under this contract will go to subcontractors who are small business concerns including 3c.and 3d.

c. Small Disadvantaged Business Concerns: _____% of total planned subcontracting dollars under this contract will go to subcontractors who are small disadvantaged individuals. **NOTE:** Women-owned businesses are not considered a small disadvantaged business. Do not include subcontract awards to women-owned businesses in your calculations for paragraph 3c unless the firm meets the definition of a small disadvantaged business.

d. Small Woman-Owned Business Concerns: _____% of total planned subcontracting dollars under this contract will go to subcontractors who are small woman-owned businesses.

e. Historical Black Colleges and Minority Institutions: ____% of total planned subcontracting dollars under this contract will go to subcontractors who historical black colleges and/or minority institutions.

f. Service-Disabled Veteran-Owned Small Business: ____% of total planned subcontracting dollars under this contract will go to subcontractors who historical black colleges and/or minority institutions.

4. The principal items or areas we will subcontract under this contract are (NOTE: **Construction contractors remember to include materials/supplies** when developing plan. Also, list each subcontracted task by Division and Section number):

_____

_____

_____

a. Of the items or areas stated in 4, the following are to be subcontracted to Small Businesses:

_____

_____

_____

b. Of the items or areas stated in 4, the following are to be subcontracted to Small Disadvantaged Businesses:

_____

_____

_____

c. Of the items or areas stated in 4, the following are to be subcontracted to Small Women-Owned Businesses:

_____

_____

_____

d. Of the items or areas stated in 4, the following are to be subcontracted to Historically Underutilized Business Zones:

_____

_____

_____

e. Of the items or areas stated in 4, the following are to be subcontracted to Historical Black Colleges and Minority Institutions:

_____

_____

_____

f. Of the items or areas stated in 4, the following are to be subcontracted to Service-Disabled Veteran-Owned Small Business:

_____

_____

_____

****NOTE: SEE LAST PAGE IF THIS SOLICITATION HAS OPITONS** (DELETE THIS STATEMENT FROM YOUR PLAN)**

5. Provide a description of the method your firm used to develop the subcontracting goals in paragraph 2. Identify specific SD, SDB, WOSB, HubZones, SDVOB, HBCU or MI concerns planned to be subcontractors for the item/service efforts stated in paragraph4.

_____

_____

_____

_____

_____

6. Indirect costs were ( ) were not ( ) used in establishing subcontracting goals. **If indirect costs are included in your goals, furnish a description of the method used to determine the proportionate share of indirect costs to be incurred with (i) small business concerns (ii) small disadvantaged business concerns and (iii) women-owned.**

7. Past Performance Record: Demonstrate the extent to which the Prime has historically been successful in establishing realistic yet challenging goals and evidences ability to achieve them.

8. The following individual will administer this Subcontracting Plan on behalf of (name of contractor):

Name: Title:

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Address:

Telephone:

The aforementioned individual's specific duties will include, but is not limited to:

a. Developing and maintaining source lists of small, small disadvantaged and women-owned small business concerns. Sources used are the Small Business Administration's Pro-Net, the National Minority Purchasing Council Vendor Information Service, the Minority Business Development Agency, US Department of Commerce, Local Minority Business Development Centers, Economic Development Centers, and National Center for American Indian Enterprise Development.

b. Assuring the inclusion of small, small disadvantaged, and women-owned small business concerns in all solicitations for products or services which they are capable of providing; and ensuring that all solicitations are structured to permit the maximum possible participation by small, small disadvantaged and women-owned small business concerns.

c. Establishing and maintaining records of all subcontract awards to ensure appropriate documentation of non-selection of bids submitted by a small, small disadvantaged business, or women-owned small business concerns.

d. Preparing and submitting the Subcontracting Report for Individual Contracts (SF 294) and the Summary Subcontract Report (SF 295) in accordance with instructions provided, and coordinating and preparing for all compliance reviews by Federal agencies.

e. Promoting activities necessary to further the intent of the subcontracting plan. Activities include motivational training of purchasing personnel; attendance at workshops, seminars and trade fairs conducted by or on behalf of small business and/or small disadvantaged and/or women-owned small business concerns; and general cooperation with members of the small, small disadvantaged and women-owned small business concerns or their representatives.

9. The following steps will be taken to ensure that small, small disadvantaged, and women-owned small business concerns receive notice of and have an equitable opportunity to compete for intended awards of subcontracts and/or purchase orders for the products and/or services describe in paragraph 4 above:

a. Sources will be requested through SBA's PRO-Net system, business development organizations, minority and small business trade associations and at

small, minority and women-owned small business procurement conferences; sources will be contacted; and bidding materials will be provided to all responding parties expressing an interest.

b. The firm will conduct and maintain internal motivational training to guide and encourage purchasing personnel to maintain source lists and guides to small, small disadvantaged, and women-owned small business concerns. Purchasing activities will be monitored to ensure sufficient time is allowed for interested bidders to prepare bids and to ensure continuous compliance with the approved Subcontracting Plan.

10. [Name of contractor] agrees that the clause entitled "Utilization of Small, Small Disadvantaged and Women-Owned Business Concerns" will be included in all subcontracts that offer further subcontracting opportunities. All “other than small” subcontractors who receive subcontracts in excess of $500,000 ($1,000,000 in the case of construction) will be required to adopt a plan similar to this one. Such plans will be reviewed to assure that all minimum requirements of an acceptable subcontracting plan have been satisfied.

The acceptability of proposed goals shall be determined on a cases-by-case basis depending on the supplies/services involved, the availability of potential small, small disadvantaged, and women-owned subcontractors, and prior experience. Once approved and implemented, plans will be monitored through the submission of periodic reports or, as time and availability of funds permit, periodic visits to subcontractors facilities to review applicable records and subcontracting program progress.

11. The Firm agrees to submit periodic reports and cooperate in any studies or surveys required by the Contracting Activity or Small Business Administration to determine the extent of the firm compliance with the subcontracting plan.

12. (Name of Contractor) agrees to maintain at least the following types of records to document compliance with the Subcontracting Plan:

a. The names of all organizations, agencies, and associations contacted for small, small disadvantaged, and women-owned small business sources, along with records of attendance at conference, seminars and trade fairs where additional sources were developed.

b. Source lists, guides, and other data identifying small business concerns, small disadvantaged business concerns and women-owned small business concerns.

c. Records of subcontracts award in excess of $100,000 will demonstrate how small business concerns, small disadvantaged business concerns and women-owned business concerns were solicited or provide an explanation as to why these business

concerns were not considered for subcontracting opportunities.

d. Records of subcontract award data to include subcontractor's name and address, to be kept on a contract-by-contract basis.

e. Minutes of internal motivational and training meetings held for the guidance and encouragement of purchasing personnel, and records of all monitoring activities performed for compliance evaluation.

f. Copies of SF 294 and SF 295 showing date and place of filing and copies of all other reports or results of reviews conducted by the contracting agency or other interested agencies of the Federal government to monitor our compliance with this Subcontracting Plan.

13. (Name of Contractor) will submit a SF 295, Summary Subcontract Report, on Corps of Engineers projects only. The SF 295 shall be completed and distributed in accordance with the Corps of engineers Supplemental Instructions. (Name of Contractor) will not report Corps of Engineers projects through any other Agency unless authorized by the Contracting Officer.

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SIGNATURE PAGE

BY: _____

_____
Signature and Title of CEO
Company Name

_____
Date

Recommendation:

BY: _____

_____
Chief, Small Business Office
USACE, Omaha District

_____
Date

Approved:

BY: _____

_____
Contracting Officer
USACE, Omaha District

_____
Date

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NOTE: If this solicitation has options, the plan must contain separate goals for ***each*** option. EXAMPLE:

	Dollars	Percentage
1. Option #_____total:	$_____	_____
2. Total to be subcontracted to all businesses:	$_____	_____
a. Subcontracted to Small Business:	$_____	_____
b. Subcontracted to Small Disadvantaged Businesses:	$_____	_____
c. Subcontracted to Women-Owned Small Businesses:	$_____	_____
d. Subcontracted to Historical Black Colleges and Minority Institutions:	$_____	_____.

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AFARS -- Appendix DD

Subcontracting Plan Evaluation Guide

June 1, 1996

Part 1 -- Introduction

DD-100 Purpose.

The guide provides a methodology for uniform and consistent evaluation of subcontracting plans within the Army. It is designed to facilitate compliance with the mandates of Public Law to increase opportunities for small and small disadvantaged businesses.

DD-101 Applicability.

Except for subcontracting plans for commercial items, use this guide to review all subcontracting plans, including those submitted in response to the conditions described in FAR 19.705-2(d) and DFARS 219.705-2(d). See 19.708(b)(1) for special notices to be inserted in the solicitation regarding submission of subcontracting plans. A copy of the completed evaluation shall be included in the contract file.

DD-102 Goals.

Contracting officers must place special emphasis on negotiating reasonable goals in subcontracting plans. The goals must be realistic, challenging and attainable. The plan must demonstrate a real commitment to, and an active involvement in, providing subcontracting opportunities for small and small disadvantaged businesses.

DD-103 Scoring.

Score subcontracting plans in the context of the particular procurement. For instance, in smaller dollar value contracts, it may be impracticable or not cost effective for offerors to take the type of actions that may be appropriate in contracts for larger dollar values. However, in such cases, offerors must still address each element of the guide and discuss what they intend to do regarding each element. Contracting officers shall then assign appropriate point scores.

DD-104 Modification of Guide.

The evaluation guide and scoring system shall not be modified without the approval of the PARC. This approval authority may not be delegated.

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DD-105 Use of Preaward Surveys.

For contracts administered by the Defense Contract Management Agnecy (DCMA), information needed to assess contractor compliance with subcontracting plans in current and previous contracts may be obtained by requesting a preaward survey in accordance with FAR 9.106.

Part 2 -- Scoring System

Point Range	Points Assigned
1. Policy statement or evidence of internal guidance to company buyers recognizing commitment to Pub.L. 99-661, Section 1207, and Pub.L. 100-180, Section 806.	*0-5*
0 No written policy statement in plan.	
1-2 Plan includes a general policy, but no evidence of recognition of special emphasis being placed on subcontracting with SDBs, HBCUs and MIs as a result of Pub.L.s.	
3-5 Definitive corporate and management commitment evidenced in individual plan and master plan by specifically referencing the Pub.L.s.	
2. Efforts to broaden SB and SDB active vendor base. (FAR 19.704(a), 52.219-9(d), DFARS Subpart 219.5, 219.704(a)(1), 219.705 and 252.219-7003)	*0-10*
0 Description of efforts merely parrots requirements of FAR to maintain listing of vendors.	
1-2 Contains evidence that effort is directed at increasing subcontracts to SBs and SDBs for non-complex and general housekeeping supplies or services normally awarded to firms already in existing vendor base.	
3-10 Addresses efforts to increase the number of SB and	

SDB sources awarded subcontracts, establishes plans to use competition restricted to SDBs and gives details about how plans to use competition restricted to SDBs will be accomplished. (DFARS 219.705-4 and Subpart 219.5)

Note: After scoring the plan to this point, if zero points have been assigned for Element 2, proceed to Item 3, Outreach. If one or more points have been assigned for this Element 2, proceed to evaluation of the subelements labeled "minus 2" and "minus 3" to determine if points assigned so far must be reduced. Do not reduce points already assigned to less than zero. (No negative points are to be entered under "Points Assigned" for any Element.) These negative scores are additive; if both of the subelements apply, then minus five points are assessed to reduce points already assigned under this element 2.

minus 2 Includes efforts described above which rate 1-2 or 3-10 points but, when it would be appropriate, does not address effort to involve HBCUs and MIs in performing the contract for which the subcontracting plan is submitted. (DFARS 219.704(a)(1) and 219.705-4(d))

minus 3 Includes efforts described above which rate 1-2 or 3-10 points but does not address effort to identify and overcome obstacles which may prohibit award to HBCU and MI sources currently in vendor base.

3. Outreach (ongoing and planned actions) (FAR 19.704(a),19.705-4, 52.219-9(d) and 52.219-9(e), DFARS 219.705). *0-10*

0 No mention of outreach.

1-4 Describes efforts to work with organizations in FAR 52.219-9(d)(11)(iv) to identify potential sources for items not traditionally awarded to SB or SDB firms. (FAR 52.219-9(d)(11)(iv) and 52.219-9(e))

5-10 Indicates intent to conduct reviews to determine the competence, ability, experience and capacity available in SB or SDB firms and to provide technical assistance to SBs and SDBs or explains why such reviews or technical assistance are not appropriate. (FAR 19.705-4(c) and 52.219-9(e))

Note: After scoring the plan to this point, if zero points have been assigned for Element 3, proceed to Item 4, Description of supplies and services. If one or more points

have been assigned for this Element 3, proceed to evaluation of the subelement labeled "minus 3" to determine if points assigned so far must be reduced. Do not reduce points already assigned to less than zero. (No negative points are to be entered under "Points Assigned" for any Element.)

minus 3 Fails to indicate the extent to which HBCU and MI participation will be considered and facilitated in performing the contract for which the subcontracting plan is submitted, or fails to indicate other efforts to increase HBCU and MI participation in future DoD acquisitions. (DFARS 219.705-4(d))

4. Describes supplies and services to be subcontracted and planned for subcontracting to SBs, SDBs, HBCUs and MIs. (FAR 19.705-4(d), 52.219-9(d)(3), 52.219-9(e) and DFARS 219.705) 0-10

0 No mention.

1-4 Generic list of routine supplies and services included in materials listing for the specific contract.

5-7 Indicates intent to review major product/system components and key project elements of R&D, construction, service and spare parts contracts for subcontracting to SBs, SDBs, HBCUs and Mis. (FAR 19.705-4(d)(3) and (4), 52.219-9(e)(1) and (2) and DFARS 219.705)

8-10 Substantive plan actually targets specific SBs, SDBs, HCBUs and MIs for review to determine their competence, ability, experience and capacity and identifies specific components or major portions of the acquisition for consideration of SB, SDB, HBCU or MI competition. Also, indicates intent to work with large business subcontractors for major subsystems or key project elements to ensure "flowdown" of this philosophy. (FAR 19.705-4(d) and DFARS 219.705)

5. Describes specific efforts, based on results of efforts described in Elements No. 3 and No. 4 to ensure that SB, SDB, HBCU and MI concerns have equitable opportunity to participate in acquisitions. (FAR 19.704(a), 19.705-4, 52.219-9(d) and DFARS 219.705) 0-15

0 No mention.

1-4 Description of efforts merely parrots FAR 19.704(a)(3) and (6) and 52.219-9(d)(8).

5-8 Describes how the company intends to evaluate its own SB and SDB award performance and program effectiveness against the established goals, both company-wide and for the individual plan being negotiated. (FAR 19.704(a)(1) and (6) and 52.219-9(d)(11)(v))

9-12 Includes SBs, SDBs, HBCUs and MIs by name as members of original team for producing specific major components or subassemblies, providing a major service or performing a significant portion of the effort. (DFARS 219.705-2(d))

13-15 Describes special efforts to establish long-range relationships with SBs, SDBs, HBCUs and Mis, including leader-follower techniques, when appropriate. (FAR 19.705-4(d)(4) and DFARS 219.705-2(d)

6. Development of percentage goal is based on planned subcontracting which is challenging, yet realistic. (FAR 19.705-4(d), DFARS 219.704(a)(1) and 219.705-4). 0-40

0 Fails to include a specific goal for subcontracting with SBs, SDBs, HBCUs and MIs or proposes zero percent goal without substantive justification.

1-5 Sets small business goal of less than 10 percent and/or SDB/HBCU/MI goal of two percent or less with no significant justification.

6-10 Sets goals of less than 10 percent (SB) and 2 percent (SDB), but contractor shows evidence of reasonable effort, including use of set-asides, to involve Sbs, SDBs, HBCUs or MIs in non-traditional areas.

11-20 Sets goals of over 10 percent (SB) and 2 percent (SDB) and also identifies specific SB, SDB, HBCU or MI concerns planned to be subcontractors, including the item or service or effort to be subcontracted. Indicates extent to which firms have participated in proposal preparation or otherwise indicates extent to which subcontracting to these firms may reasonably be assured. Goals are realistic in view of actions stated in other portions of the plan and make-or-buy plan, if applicable.

21-30 Same as for 11-20 points, but proposed percent of goal is reasonable in comparison with prior experience, yet indicates reasonable effort to improve on past experience in terms of dollars, number of SDBs, HBCUs, and MIs involved, and movement into area without previous SDB, HBCU or MI involvement.

31-40 Same as 21-30 points, but includes evidence that if SBs, universities or institutions other than HBCUs or MIs are performing on a major component or subassembly, providing a major service or performing on a key project element, SDBs, HBCUs and MIs will also be given an opportunity to perform. Also, the percentage of the SDB, HBCU, MI goal compares favorably with the percentage of SB goal, consistent with the Government-wide goals of 20 percent to SB with five percent to SDB, or is otherwise explained, and the plan includes a forecast for improvement. (The SB and SDB goals in the subcontracting plan should approximate the ratio between the SB and SDB Government-wide goals.)

7. Past performance. 0-10

Extent to which the company has historically been successful in establishing realistic, yet challenging, goals and achieving them. Consider DCMC comments on prime contractor's justifications for prior failure to achieve goals. To avoid penalizing the contractor when there has been no previous defense contract, assign 10 points. (FAR 19.705-4(d)(1) and (d)(2)(iii), 19.706 and DFARS 219.706).

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8. ***Other regulatory and statutory requirements.***

If any of the following are answered "NO," the plan is not acceptable and must be revised to comply prior to award:

Does the plan have --

A. A separate goal for SB and SDB? (FAR 19.704(a)(1) and FAR 52.219-9(d)(1) and (2))

YES NO

B. A separate goal for the basic contract and, if applicable, each option? (FAR 19.704(c))

YES NO

C. The name of the company employee responsible for administration of plan and employee's duties? (FAR 19.704(a)(2) and 52.219-9(d)(7))

YES NO

D. A statement affirming intent to comply with subcontracting "flowdown" provisions? (FAR 19.704(a)(4) and 52.219-9(d)(10))

YES NO

E. A statement affirming willingness to cooperate in studies and to provide reports? (FAR 19.704(a)(5) and 52.219-9(d)(10))

YES NO

F. A statement that indirect costs are either included or excluded from the proposed goals and, if included, how they will be prorated? (FAR 52.219-9(d)(6))

YES NO

G. A description of efforts to ensure that SBs and SDBs have an equitable opportunity to participate in the acquisition? (FAR 52.219-9(d)(8))

YES NO

H. A recitation of the types of records maintained to demonstrate procedures adopted to comply with the requirements and goal in the plan? (FAR 52.219-9(d)(11))

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YES NO

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SECTION 00600
REPRESENTATIONS, CERTIFICATIONS & OTHER STATEMENTS OF OFFERORS

INDEX

1. (FAR 52.203-2) CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1985).
2. (FAR 52.203-11) CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (APR 1991).
3. TAXPAYER IDENTIFICATION (Local Provision).
4. (FAR 52.204-5) WOMEN-OWNED BUSINESS (OTHER THAN SMALL BUSINESS)[MAY 1999]
5. (DFARS 252.204-7001) COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE REPORTING (AUG 1999).
6. (FAR 52.209-5) CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (DEC 2001).
7. (DFARS 252.209-7001) DISCLOSURE OF OWNERSHIP OR CONTROL BY A FOREIGN GOVERNMENT THAT SUPPORTS TERRORISM (MAR 1998). [For Contracts exceeding $100,000]
8. RESERVED
9. (FAR 52.219-1) SMALL BUSINESS PROGRAM REPRESENTATIONS (MAY 2004) ALTERNATE I (APR 2002)
10. RESERVED
11. (FARS 52.219-19) SMALL BUSINESS CONCERN REPRESENTATION FOR THE SMALL BUSINESS COMPETITIVENESS DEMONSTRATION PROGRAM (OCT 2000).
12. (FARS 52.219-21) SMALL BUSINESS SIZE REPRESENTATION FOR TARGETED INDUSTRY CATEGORIES UNDER THE SMALL BUSINESS COMPETITIVENESS DEMONSTRATION PROGRAM (MAY 1999).
13. (FAR 52.222-21) CERTIFICATION OF NONSEGREGATED FACILITIES (FEB 1999).
14. (FAR 52.222-22) PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999).
15. (FAR 52.223-4) RECOVERED MATERIAL CERTIFICATION (OCT 1997).
16. (FAR 52.223-13) CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (AUG 2003) [For Contracts over $100,000]
17. (DFARS 252.225-7031) SECONDARY ARAB BOYCOTT OF ISRAEL (APR 2003)
18. (DFAR 252.247-7022) REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA (AUG 1992).
19. CONTRACTOR'S CERTIFICATION (Reference FAR 4.102) (Local Provision)

SECTION 00600
REPRESENTATIONS, CERTIFICATIONS & OTHER STATEMENTS OF OFFERORS

The bidder (offeror) makes the following certification and representations as a part of the proposal, shall check the appropriate boxes, fill in the appropriate information, and provide signatures on the attached "Solicitation Form" (00600) pages, and submit with Standard Form 1442 (Section 00010).

1. (FAR 52.203-2) CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1985).

(a) The offeror certifies that -

(1) The prices in this offer have been arrived at independ-ently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to (i) those prices, (ii) the intention to submit an offer, or (iii) the methods or factors used to calculate the prices offered;

(2) the prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a Sealed Bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) no attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory -

(1) is the person in the offeror's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; or

(2)(i) has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above _____
_____
_____ [insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the offeror's organization];

(ii) as an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) as an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above.

(c) If the offeror deletes or modifies subparagraph (a)(2) above, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

2. (FAR 52.203-11) CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (APR 1991).

(a) The definitions and prohibitions contained in the clause, at FAR 52.203-12, Limitation on Payments to Influence Certain Federal Transactions, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this certification.

(b) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief that on or after December 23, 1989, -

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the Contracting Officer; and

(3) He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of $100,000 shall certify and disclose accordingly.

(c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision or who fails to file or amend the disclosure form to be filed or amended by this provision, shall be subject to a civil penalty of not less than $10,000, and not more than $100,000, for each such failure.

3. TAXPAYER IDENTIFICATION (Local Provision).

(a) Definitions.

"Common parent," as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

"Taxpayer Identification Number (TIN)," as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(b) All offerors must submit the information required in paragraphs (d) through (f) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements described in Federal Acquisition Regulation (FAR) 4.904, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(d) Taxpayer Identification Number (TIN).

[ ] TIN: _____.

[ ] TIN has been applied for.

[ ] TIN is not required because:

[ ] Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

[ ] Offeror is an agency or instrumentality of a foreign government;

[ ] Offeror is an agency or instrumentality of the Federal Government.

(e) Type of organization.

[ ] Sole proprietorship;

[ ] Partnership;

[ ] Corporate entity (not tax-exempt);

[ ] Corporate entity (tax-exempt);

[ ] Government entity (Federal, State, or local);

[ ] Foreign government;

[ ] International organization per 26 CFR 1.6049-4;

[ ] Other _____.

(f) Common parent.

[ ] Offeror is not owned or controlled by a common parent as defined in paragraph (a) of this provision.

[ ] Name and TIN of common parent:

Name _____

TIN _____

(End of provision)

4. (FAR 52.204-5) WOMEN-OWNED BUSINESS (OTHER THAN SMALL BUSINESS)[MAY 1999]

(a) *Definition*. Women-owned business concern, as used in this provision, means a concern that is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of its stock is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

(b) *Representation. [Complete only if the offeror is a women-owned business concern and has not represented itself as a small business concern in paragraph (b)(1) of FAR 52.219–1, Small Business Program Representations, of this solicitation.]* The offeror represents that it [ ] is a women-owned business concern.
(End of provision)

5. (DFARS 252.204-7001) COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE REPORTING (AUG 1999).

(a) The offeror is requested to enter its CAGE code on its offer in the block with its name and address. The CAGE code entered must be for that name and address. Enter "CAGE" before the number.

(b) If the Offeror does not have a CAGE code, it may ask the Contracting Officer to request one from the Defense Logistics Information Service (DLIS). The Contracting Officer will-

(1) Ask the Contractor to complete section B of a DD Form 2051, Request for Assignment of a Commercial and Government Entity (CAGE) Code;

(2) Complete section A and forward the form to DLIS; and

(3) Notify the Contractor of its assigned CAGE code.

(c) Do not delay submission of the offer pending receipt of a CAGE code.

6. (FAR 52.209-5) CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (DEC 2001).

(a)(1) The Offeror certifies, to the best of its knowledge and belief, that—

(i) The Offeror and/or any of its Principals—

(A) Are [ ] are not [ ] presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have [ ] have not [ ], within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(C) Are [ ] are not [ ] presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph (a)(1)(i)(B) of this provision.

(ii) The Offeror has [ ] has not [ ], within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity *(e.*g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default. (End of Provision)

7. (DFARS 252.209-7001) DISCLOSURE OF OWNERSHIP OR CONTROL BY A FOREIGN GOVERNMENT THAT SUPPORTS TERRORISM (MAR 1998). [For Contracts exceeding $100,000]

(a) Definitions.

As used in this provision-

(1) "Government of a terrorist country" includes the state and the government of a terrorist country, as well as any political subdivision, agency, or instrumentality thereof.

(2) "Terrorist country" means a country determined by the Secretary of State, under section 6(j)(1)(A)) of the Export Administration Act of 1979 (50 U.S.C. App. 2405(j)(i)(A)), to be a country the government of which has repeatedly provided support for acts of international terrorism. As of the date of this provision, terrorist countries include: Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria.

(3) "Significant interest" means-

(i) Ownership of or beneficial interest in 5 percent or more of the firm's or subsidiary's securities. Beneficial interest includes holding 5 percent or more of any class of the firm's securities in "nominee shares," "street names," or some other method of holding securities that does not disclose the beneficial owner;

(ii) Holding a management position in the firm, such as a director or officer;

(iii) Ability to control or influence the election, appointment, or tenure of directors or officers in the firm;

(iv) Ownership of 10 percent or more of the assets of a firm such as equipment, buildings, real estate, or other tangible assets of the firm; or

(v) Holding 50 percent or more of the indebtedness of a firm.

(b) Prohibition on award. In accordance with 10 U.S.C. 2327, no contract may be awarded to a firm or a subsidiary of a firm if the government of a terrorist country has a significant interest in the firm or subsidiary [or, in the case of a subsidiary, the firm that owns the subsidiary], unless a waiver is granted by the Secretary of Defense.

(c) Disclosure.

The Offeror shall disclose any significant interest the government of each of the following countries has in the Offeror or a subsidiary of the Offeror. If the Offeror is a subsidiary, it shall also disclose any significant interest the government of a terrorist country has in any firm that owns or controls the subsidiary. The disclosure shall include--

(1) Identification of each government holding a significant interest; and

(2) A description of the significant interest held by each Government.

(End of provision)

8. RESERVED

9. (FAR 52.219-1) SMALL BUSINESS PROGRAM REPRESENTATIONS (MAY 2004) ALTERNATE I (APR 2002)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is _____ [*insert NAICS code*].

(2) The small business size standard is _____ [*insert size standard*].

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) *Representations*. (1) The offeror represents as part of its offer that it [ ] is, [ ] is not a small business concern.

(2) [*Complete only if the offeror represented itself as a small business concern in paragraph (b)(1)*

of this provision.] The offeror represents, for general statistical purposes, that it [ ] is, [ ] is not, a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) [*Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision*.] The offeror represents as part of its offer that it [ ] is, [ ] is not a women-owned small business concern.

(4) [*Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision*.] The offeror represents as part of its offer that it [ ] is, [ ] is not a veteran-owned small business concern.

(5) [*Complete only if the offeror represented itself as aveteran-owned small business concern in paragraph (b)(4) of this provision*.] The offeror represents as part of its offer that it [ ] is, [ ] is not a service-disabled veteran-owned small business concern.

(6) *[Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision*.] The offeror represents, as part of its offer, that—

(i) It [ ] is, [ ] is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It [ ] is, [ ] is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. [*The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture:*_____.] Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(7) [*Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision.*] The offeror shall check the category in which its ownership falls:

_____ Black American.
_____ Hispanic American.
_____ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).
_____ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea),Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).
_____ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).
_____ Individual/concern, other than one of the preceding.

(c) *Definitions*. As used in this provision—

"Service-disabled veteran-owned small business concern"—

(1) Means a small business concern—

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a service-disabled veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service connected, as defined in 38 U.S.C. 101(16).

"Small business concern" means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR part 121 and the size standard in paragraph (a) of this provision.

"Veteran-owned small business concern" means a small business concern—

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern" means a small business concern—

(1) That is at least 51 percent owned by one or more women; or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) *Notice*. (1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, HUBZone small, small disadvantaged, or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall—

(i) Be punished by imposition of fine, imprisonment, or both;

(ii) Be subject to administrative remedies, including suspension and debarment; and

(iii) Be ineligible for participation in programs conducted under the authority of the Act.

(End of provision)

10. RESERVED

11. (FARS 52.219-19) SMALL BUSINESS CONCERN REPRESENTATION FOR THE SMALL BUSINESS COMPETITIVENESS DEMONSTRATION PROGRAM (OCT 2000).

(a) *Definition*. "Emerging small business" as used in this solicitation, means a small business concern whose size is no greater than 50 percent of the numerical size standard applicable to the North American Industry Classification System (NAICS) code assigned to a contracting opportunity.

(b) (Complete only if Offeror has represented itself under the provision at FAR 52.219-1 as a small business concern under the size standards of this solicitation.) The Offeror [ ] is, [ ] is not an emerging small business.

(c) (Complete only if the Offeror is a small business or an emerging small business, indicating its size range.)

Offeror's number of employees for the past 12 months (check this column if size standard stated in solicitation is expressed in terms of number of employees) or Offeror's average annual gross revenue for the last 3 fiscal years (check this column if size standard stated in solicitation is expressed in terms of annual receipts). (Check one of the following.)

No. of Employees	Average Annual Gross Revenues
_____50 or fewer	_____$1 million or less
_____51 - 100	_____$1,000,001 - $2 million
_____101 - 250	_____$2,000,001 - $3.5 million
_____251 - 500	_____$3,500,001 - $5 million

_____501 - 750	_____$5,000,001 - $10 million
_____751 - 1,000	_____$10,000,001 - $17 million
_____Over 1,000	_____Over $17 million

12. (FARS 52.219-21) SMALL BUSINESS SIZE REPRESENTATION FOR TARGETED INDUSTRY CATEGORIES UNDER THE SMALL BUSINESS COMPETITIVENESS DEMONSTRATION PROGRAM (MAY 1999).

[*Complete only if the Offeror has represented itself under the provision at 52.219-1 as a small business concern under the size standards of this solicitation*.]

Offeror's number of employees for the past 12 months [*check this column if size standard stated in solicitation is expressed in terms of number of employees*] or Offeror's average annual gross revenue for the last 3 fiscal years [check this column if size standard in solicitation is expressed in terms of annual receipts]. [*Check one of the following.*]

NO. OF EMPLOYEES	AVERAGE ANNUAL GROSS REVENUES
_____50 or fewer	_____$1 million or less
_____51 - 100	_____$1,000,001 - $2 million
_____101 - 250	_____$2,000,001 - $3.5 million
_____251 - 500	_____$3,500,001 - $5 million
_____501 - 750	_____$5,000,001 - $10 million
_____751 - 1,000	_____$10,000,001 - $17 million
_____Over 1,000	_____Over $17 million

13. (FAR 52.222-21) CERTIFICATION OF NONSEGREGATED FACILITIES (FEB 1999).

(a) "Segregated facilities," as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

(b) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.

(c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.

(End of clause)

14. (FAR 52.222-22) PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999).

The offeror represents that—

(a) It [ ] has, [ ] has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation;

(b) It [ ] has, [ ] has not filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

(End of provision)

15. (FAR 52.223-4) RECOVERED MATERIAL CERTIFICATION (OCT 1997).

As required by the Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6962(c)(3)(A)(i)), the offeror certifies, by signing this offer, that the percentage of recovered materials to be used in the performance of the contract will be at least the amount required by the applicable contract specifications.
(End of provision)

16. (FAR 52.223-13) CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (AUG 2003) [For Contracts over $100,000]

(a) Executive Order 13148, of April 21, 2000, Greening the Government through Leadership in Environmental Management, requires submission of this certification as a prerequisite for contract award.

(b) By signing this offer, the offeror certifies that—

(1) As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this contract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons: [*Chec k each block that is applicable*.]

[ ] (i) The facility does not manufacture, process, or otherwise use any toxic chemicals listed in 40 CFR 372.65;

[ ] (ii) The facility does not have 10 or more fulltime employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);

[ ] (iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

[ ] (iv) The facility does not fall within the following Standard Industrial Classification (SIC) codes or their corresponding North American Industry Classification System sectors:

(A) Major group code 10 (except 1011, 1081, and 1094.

(B) Major group code 12 (except 1241).

(C) Major group codes 20 through 39.

(D) Industry code 4911, 4931, or 4939 (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce).

(E) Industry code 4953 (limited to facilities regulated under the Resource Conservation and Recovery Act, Subtitle C (42 U.S.C. 6921, *et seq*.), or 5169, or 5171, or 7389 (limited to facilities primarily engaged in solvent recovery services on a contract or fee basis); or

[ ] (v) The facility is not located in the United States or its outlying areas..
(End of provision)

17. (DFARS 252.225-7031) SECONDARY ARAB BOYCOTT OF ISRAEL (APR 2003)

(a) *Definitions.* As used in this provision-

(1) "Foreign person" means any person (including any individual, partnership, corporation, or other form of association) other than a United States person.

(2) "United States person" is defined in 50 U.S.C. App. 2415(2) and means-

(i) Any United States resident or national (other than an individual resident outside the United States who is employed by other than a United States person);

(ii) Any domestic concern (including any permanent domestic establishment of any foreign concern); and

(iii) Any foreign subsidiary or affiliate (including any permanent foreign establishment) of

any domestic concern that is controlled in fact by such domestic concern.

(b) *Certification*. If the offeror is a foreign person, the offeror certifies, by submission of an offer, that it-

(1) Does not comply with the Secondary Arab Boycott of Israel; and

(2) Is not taking or knowingly agreeing to take any action, with respect to the Secondary Boycott of Israel by Arab countries, which 50 U.S.C. App. 2407(a) prohibits a United States person from taking.

(End of Provision)

18. (DFAR 252.247-7022) REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA (AUG 1992).

(a) The Offeror shall indicate by checking the appropriate blank in paragraph (b) of this provision whether transportation of supplies by sea is anticipated under the resultant contract. The term "supplies" is defined in the Transportation of Supplies by Sea clause of this solicitation.

(b) REPRESENTATION. The Offeror represents that it-

_____ Does anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

_____ Does not anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

(c) Any contract resulting from this solicitation will include the Transportation of Supplies by Sea Clause. If the Offeror represents that it will not use ocean transportation, the resulting contract will also include the Defense FAR Supplement clause at 252.247-7024, Notification of Transportation of Supplies by Sea.

19. CONTRACTOR'S CERTIFICATION (Reference FAR 4.102) (Local Provision)

Offerors are cautioned to note the "Contractor's Certification" included in this solicitation and to furnish the information required by paragraph (b), Partnerships, and paragraph (c), Corporations, as appropriate.

(a) CONTRACT WITH INDIVIDUAL. If the resultant contract is with an individual, it shall be signed by the individual in his own name. A contract with an individual doing business as a firm shall be signed by that individual and will ordinarily take the following form.

_____ (Signed)

An individual doing business as

_____

(b) CONTRACTS WITH PARTNERSHIPS. If the resultant contract is with a partnership, it need be signed by only one partner PROVIDED the partner signing has the authority to legally bind the partnership. In addition, the following statement shall be completed:

_____ is a partnership composed of
(Firm Name)

_____
(List All Partners)

_____
(Indicate if any partner is limited in partnership authority

(c) CONTRACTS WITH CORPORATIONS. If the resultant contract is with a corporation, it shall be executed in the corporation name, followed by the word "by" after which the person who has been authorized to execute the contract on behalf of the corporation shall sign his/her name, with the designation of his/her official capacity. In addition, the following certification shall be completed:

I, _____, certify that I am the _____ of the corporation named as Contractor herein, that _____ who signed this contract on behalf of the Contractor was then _____ of said corporation, that said contract was duly for and on behalf of said corporation by authority of the governing body and is within the scope of its corporate powers.

In witness whereof, I have hereunto affixed my signature this ____ day of _____, 19___.

_____
(Signature, Printed Name, Title)

(d) CONTRACT WITH JOINT VENTURES. If the resultant contract is with a joint venture, each participant shall sign and in the manner indicated above for each type of participant. In addition, to assure a single point of contact for resolution of contractual matters and payments, the following certification shall be signed by each participant in the joint venture.

The parties hereto expressly understand and agree as follows:

(1) _____
(Name) (Title) (Company)

is the principal representative of the joint venture. As such, all communications regarding the administration of the contract and the performance of the work thereunder may be directed to him. In the absence of:

_____
(Name) (Title) (Company as above)

_____
(Name) (Title) (Company of Alternate)

is the alternate principle of the joint venture.

(2) Directions, approvals, required notices, and all other communications from the Government to the joint venture, including transmittal of payments by the Government, shall be directed to:

_____
(Name) (Title) (Company)

principal representative of the joint venture.

(e) SIGNATURE OF AGENTS. If the resultant contract is signed by an agent, other than as stated above, the fact of the agency will be evidenced by a copy of the Power of Attorney.

SECTION 00700

CONTRACT CLAUSES

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35. DFARS 252.219-7009 SECTION 8(a) DIRECT AWARD (MAR 2002)
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37. *FAR 52.222-1 NOTICE TO THE GOVERNMENT OF LABOR DISPUTES (FEB 1997)
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39. *FAR 52.222-4 CONTRACT WORK HOURS AND SAFETY STANDARDS ACT— OVERTIME COMPENSATION (SEPT 2000)
40. *FAR 52.222-6 DAVIS-BACON ACT (FEB 1995)
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49. *FAR 52.222-15 CERTIFICATION OF ELIGIBILITY (FEB 1988)
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56. *FAR 52.223-3 HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA (JAN 1997)
57. *FAR 52.223-5 POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION (AUG 2003) [For Work on Federal Facilities]
58. *FAR 52.223-6 DRUG-FREE WORKPLACE (MAY 2001)
59. FAR 52.223-9 ESTIMATE OF PERCENTAGE OF RECOVERED MATERIAL CONTENT FOR EPA-DESIGNATED PRODUCTS (AUG 2000) [For Contracts exceeding $100,000. EPA Designated product (available at http://www.epa.gov/cpg/)]
60. *FAR 52.223-14 TOXIC CHEMICAL RELEASE REPORTING (AUG 2003) [For Contracts Over $100,000]
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62. *FAR 52.225-9 BUY AMERICAN ACT—CONSTRUCTION MATERIALS (JUNE 2003) (For Contracts less than $6.481 million)
63. *FAR 52.225-10 NOTICE OF BUY AMERICAN ACT REQUIREMENT—CONSTRUCTION MATERIALS (MAY 2002) (Applicable with FAR 52.225-9)
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69. *FAR 52.227-2 NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT (AUG 1996)
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74. *FAR 52.228-2 ADDITIONAL BOND SECURITY (OCT 1997)
75. *FAR 52.228-5 INSURANCE--WORK ON A GOVERNMENT INSTALLATION (JAN 1997) [For Contracts Exceeding $100,000]
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78. FAR 52.228-14 IRREVOCABLE LETTER OF CREDIT (DEC 1999)
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80. FAR 52.229-3 FEDERAL, STATE, AND LOCAL TAXES (APR 2003) [For Contracts Exceeding $100,000]
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82. FAR 52.230-1 COST ACCOUNTING STANDARDS NOTICES AND CERTIFICATION (JUNE 2000)
83. *FAR 52.230-2 COST ACCOUNTING STANDARDS (APR 1998)
84. *FAR 52.230-3 DISCLOSURE AND CONSISTENCY OF COST ACCOUNTING PRACTICES (APR 1998)
85. DFARS 252.231-7000 SUPPLEMENTAL COST PRINCIPLES (DEC 1991)
86. *FAR 52.232-5 PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS (SEPT 2002)
87. RESERVED.
88. *FAR 52.232-10 PAYMENTS UNDER FIXED-PRICE ARCHITECT-ENGINEER CONTRACTS (AUG 1987)
89. *FAR 52.232-17 INTEREST (JUN 1996)
90. *FAR 52.232-23 ASSIGNMENT OF CLAIMS (JAN 1986)
91. *FAR 52.232-26 PROMPT PAYMENT FOR FIXED-PRICE ARCHITECT-ENGINEER CONTRACTS (OCT 2003)
92. *FAR 52.232-27 PROMPT PAY FOR CONSTRUCTION CONTRACTS (OCT 2003)
93. *FAR 52.232-33 PAYMENT BY ELECTRONIC FUNDS TRANSFER –CENTRAL CONTRACTOR REGISTRATION (OCT 2003)
94. DFARS 252.232-7004 DOD PROGRESS PAYMENT RATES (OCT 2001)
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96. *FAR 52.233-1 DISPUTES (JULY 2002)
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98. *FAR 52.233-3 PROTEST AFTER AWARD (AUG 1996)
99. RESERVED.
100. FAR 52.236-2 DIFFERING SITE CONDITIONS (APR 1984)
101. *FAR 52.236-3 SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK (APR 1984)
102. *FAR 52.236-5 MATERIAL AND WORKMANSHIP (APR 1984)
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106. *FAR 52.236-9 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS (APR 1984)
107. FAR 52.236-10 OPERATIONS AND STORAGE AREAS (APR 1984)
108. *FAR 52.236-11 USE AND POSSESSION PRIOR TO COMPLETION (APR 1984)
109. *FAR 52.236-12 CLEANING UP (APR 1984)

110. *FAR 52.236-13 ACCIDENT PREVENTION-ALTERNATE I (NOV 1991)
111. *FAR 52.236-14 AVAILABILITY AND USE OF UTILITY SERVICES (APR 1984)
112. FAR 52.236-15 SCHEDULES FOR CONSTRUCTION CONTRACTS (APR 1984)
113. *FAR 52.236-17 LAYOUT OF WORK (APR 1984)
114. FAR 52.236-21 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FEB 1997)
115. *FAR 52.236-23 RESPONSIBILITY OF THE ARCHITECT-ENGINEER CONTRACTOR (APR 1984)
116. *FAR 52.236-24 WORK OVERSIGHT IN ARCHITECT-ENGINEER CONTRACTS (APR 1984)
117. *FAR 52.236-25 REQUIREMENTS FOR REGISTRATION OF DESIGNERS (JUNE 2003)
118. *FAR 52.236-26 PRECONSTRUCTION CONFERENCE (FEB 1995)
119. DFARS 252.236-7000 MODIFICATION OF PROPOSALS - PRICE BREAKDOWN (DEC 1991)
120. *FAR 52.242-13 BANKRUPTCY (JUL 1995)
121. *FAR 52.242-14 SUSPENSION OF WORK (APR 1984)
122. DFARS 252.242-7005 COST/SCHEDULE STATUS REPORT (MAR 1998)
123. *FAR 52.243-1 CHANGES--FIXED-PRICE (AUG 1987) ALTERNATE III (AUG 1984)
124. FAR 52.243-4 CHANGES (AUG 1987)
125. DFARS 252.243-7001 PRICING OF CONTRACT MODIFICATIONS (DEC 1991)
126. DFARS 252.243-7002 REQUESTS FOR EQUITABLE ADJUSTMENT (MAR 1998)
127. *FAR 52.244-2 SUBCONTRACTS (AUG 1998)
128. *FAR 52.244-4 SUBCONTRACTORS AND OUTSIDE ASSOCIATES AND CONSULTANTS (ARCHITECT-ENGINEER SERVICES) (AUG 1998)
129. FAR 52.244-6 SUBCONTRACTS FOR COMMERCIAL ITEMS (JULY 2004)
130. *FAR 52.245-2 GOVERNMENT PROPERTY (FIXED-PRICE CONTRACTS) (MAY 2004) [For Government Property over $100,000]
131. *FAR 52.245-4 GOVERNMENT-FURNISHED PROPERTY (SHORT FORM) (JUNE 2003) [For Government Property $100,000 or Less]
132. *FAR 52.246-12 INSPECTION OF CONSTRUCTION (AUG 1996)
133. *FAR 52.246-21 WARRANTY OF CONSTRUCTION (MAR 1994)
134. DFARS 252.247-7023 TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)
135. DFARS 252.247-7024 NOTIFICATION OF TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)
136. FAR 52.248-3 VALUE ENGINEERING--CONSTRUCTION (FEB 2000) (ALERNATE I (APR 1984)
137. *FAR 52.249-2 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (MAY 2004) ALTERNATE I (SEP 1996) [For Contracts Over $100,000]
138. *FAR 52.249-10 DEFAULT (FIXED-PRICE CONSTRUCTION) (APR 1984)
139. ENVIRONMENTAL LITIGATION (1974 NOV OCE)
140. EFARS 52.249-5000 BASIS FOR SETTLEMENT OF PROPOSALS

SECTION 00700

CONTRACT CLAUSES

1. FAR 52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

http://www.arnet.gov/far

(End of clause)

* - CONTRACT CLAUSES THAT MAY BE INCORPORATED BY REFERENCE

2. DFARS 252.201-7000 CONTRACTING OFFICER'S REPRESENTATIVE (DEC 1991)

(a) Definition.

"Contracting officer's representative" means an individual designated in accordance with subsection 201.602-2 of the Defense Federal Acquisition Regulation Supplement and authorized in writing by the contracting officer to perform specific technical or administrative functions.

(b) If the Contracting Officer designates a contracting officer's representative (COR), the Contractor will receive a copy of the written designation. It will specify the extent of the COR's authority to act on behalf of the contracting officer. The COR is not authorized to make any commitments or changes that will affect price, quality, quantity, delivery, or any other term or condition of the contract.

(End of clause)

3. *FAR 52.202-1 DEFINITIONS (JULY 2004)

(a) When a solicitation provision or contract clause uses a word or term that is defined in the Federal Acquisition Regulation (FAR), the word or term has the same meaning as the definition in FAR 2.101 in effect at the time the solicitation was issued, unless—

(1) The solicitation, or amended solicitation, provides a different definition;

(2) The contracting parties agree to a different definition;

(3) The part, subpart, or section of the FAR where the provision or clause is prescribed provides a different meaning; or

(4) The word or term is defined in FAR Part 31, for use in the cost principles and procedures.

(b) The FAR Index is a guide to words and terms the FAR defines and shows where each definition is located. The FAR Index is available via the Internet at *http://www.acqnet.gov* at the end of the FAR, after the FAR Appendix.

(End of clause)

4. *FAR 52.203-3 GRATUITIES (APR 1984)

(a) The right of the Contractor to proceed may be terminated by written notice if, after notice and hearing, the agency head or a designee determines that the Contractor, its agent, or another representative--

(1) Offered or gave a gratuity (e.g., an entertainment or gift) to an officer, official, or employee of the Government; and

(2) Intended, by the gratuity, to obtain a contract or favorable treatment under a contract.

(b) The facts supporting this determination may be reviewed by any court having lawful jurisdiction.

(c) If this contract is terminated under paragraph (a) above, the Government is entitled--

(1) To pursue the same remedies as in a breach of the contract; and

(2) In addition to any other damages provided by law, to exemplary damages of not less than 3 nor more than 10 times the cost incurred by the Contractor in giving gratuities to the person concerned, as determined by the agency head or a designee. (This subparagraph (c)(2) is applicable only if this contract uses money appropriated to the Department of Defense.)

(d) The rights and remedies of the Government provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

5. *FAR 52.203-5 COVENANT AGAINST CONTINGENT FEES (APR 1984)

(a) The Contractor warrants that no person or agency has been employed or retained to solicit or obtain this contract upon an agreement or understanding for a contingent fee, except a bona fide employee or agency. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or, in its discretion, to deduct from the contract price or consideration, or otherwise recover, the full amount of the contingent fee.

(b) "Bona fide agency," as used in this clause, means an established commercial or selling agency, maintained by a contractor for the purpose of securing business, that neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds itself out as being able to obtain any Government contract or contracts through improper influence.

"Bona fide employee," as used in this clause, means a person, employed by a contractor and subject to the contractor's supervision and control as to time, place, and manner of performance, who neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds out as being able to obtain any Government contract or contracts through improper influence.

"Contingent fee," as used in this clause, means any commission, percentage, brokerage, or other fee that is contingent upon the success that a person or concern has in securing a Government contract.

"Improper influence," as used in this clause, means any influence that induces or tends to induce a Government employee or officer to give consideration or to act regarding a Government contract on any basis other than the merits of the matter.

6. *FAR 52.203-7 ANTI-KICKBACK PROCEDURES (JUL 1995)

(a) Definitions.

"Kickback," as used in this clause, means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided, directly or indirectly, to any prime Contractor, prime Contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a subcontract relating to a prime contract. "Person," as used in this clause, means a corporation, partnership, business association of any kind, trust, joint-stock company, or individual.

"Prime contract," as used in this clause, means a contract or contractual action entered into by the United States for the purpose of obtaining supplies, materials, equipment, or services of any kind.

"Prime Contractor," as used in this clause, means a person who has entered into a prime contract with the United States.

"Prime Contractor employee," as used in this clause, means any officer, partner, employee, or agent of a prime Contractor.

"Subcontract," as used in this clause, means a contract or contractual action entered into by a prime Contractor or subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind under a prime contract.

"Subcontractor," as used in this clause, (1) means any person, other than the prime Contractor, who offers to furnish or furnishes any supplies, materials, equipment, or services of any kind under a prime contract or a subcontract entered into in connection with such prime contract, and (2) includes any person who offers to furnish or furnishes general supplies to the prime Contractor or a higher tier subcontractor.

"Subcontractor employee," as used in this clause, means any officer, partner, employee, or agent of a subcontractor.

(b) The Anti-Kickback Act of 1986 (41 U.S.C. 51-58) (the Act), prohibits any person from--

(1) Providing or attempting to provide or offering to provide any kickback;

(2) Soliciting, accepting, or attempting to accept any kickback; or

(3) Including, directly or indirectly, the amount of any kickback in the contract price charged by a prime Contractor to the United States or in the contract price charged by a subcontractor to a prime Contractor or higher tier subcontractor.

(c) (1) The Contractor shall have in place and follow reasonable procedures designed to prevent and detect possible violations described in paragraph (b) of this clause in its own operations and direct business relationships.

(2) When the Contractor has reasonable grounds to believe that a violation described in paragraph (b) of this clause may have occurred, the Contractor shall promptly report in writing the possible violation. Such reports shall be made to the inspector general of the contracting agency, the head of the contracting agency if the agency does not have an inspector general, or the Department of Justice.

(3) The Contractor shall cooperate fully with any Federal agency investigating a possible violation described in paragraph (b) of this clause.

(4) The Contracting Officer may

(i) offset the amount of the kickback against any monies owed by the United States under the prime contract and/or

(ii) direct that the Prime Contractor withhold from sums owed a subcontractor under the prime contract the amount of the kickback. The Contracting Officer may order that monies withheld under subdivision (c)(4)(ii) of this clause be paid over to the Government unless the Government has already offset those monies under subdivision (c)(4)(i) of this clause. In either case, the Prime Contractor shall notify the Contracting Officer when the monies are withheld.

(5) The Contractor agrees to incorporate the substance of this clause, including subparagraph (c)(5) but excepting subparagraph (c)(1), in all subcontracts under this contract which exceed $100,000.

7. *FAR 52.203-8 CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) If the Government receives information that a contractor or a person has engaged in conduct constituting a violation of subsection (a), (b), (c), or (d) of Section 27 of the Office of Federal Procurement Policy Act (41 U.S.C. 423) (the Act), as amended by section 4304 of the National Defense Authorization Act for Fiscal Year 1996 (Pub. L. 104-106), the Government may--

(1) Cancel the solicitation, if the contract has not yet been awarded or issued; or

(2) Rescind the contract with respect to which--

(i) The Contractor or someone acting for the Contractor has been convicted for an offense where the conduct constitutes a violation of subsection 27 (a) or (b) of the Act for the purpose of either--

(A) Exchanging the information covered by such subsections for anything of value; or

(B) Obtaining or giving anyone a competitive advantage in the award of a Federal agency procurement contract; or

(ii) The head of the contracting activity has determined, based upon a preponderance of the evidence, that the Contractor or someone acting for the Contractor has engaged in conduct constituting an offense punishable under subsection 27(e)(1) of the Act.

(b) If the Government rescinds the contract under paragraph (a) of this clause, the Government is entitled to recover, in addition to any penalty prescribed by law, the amount expended under the contract.

(c) The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law, regulation, or under this contract.

8. DFARS 252.203-7001 PROHIBITION ON PERSONS CONVICTED OF FRAUD OR OTHER DEFENSE—CONTRACT-RELATED FELONIES (MARCH 1999)

(a) Definitions.

As used in this clause--

(1) "Arising out of a contract with the "DoD" means any any act in connection with--

(i) Attempting to obtain;

(ii) Obtaining; or

(iii) Performing a contract or first-tier subcontract of any department, or component of the Department of Defense (DoD).

(2) "Conviction of fraud or any other felony," means any conviction for fraud or a felony in violation of state or Federal criminal statutes, whether entered on a verdict or plea, including a plea of nolo contendere, for which sentence has been imposed.

(3) "Date of conviction," means the date judgement was entered against the individual.

(b) Any individual who is convicted after September 29, 1988 of fraud or any other felony arising out of a contract with the DoD is prohibited from serving--

(1) In a management or supervisory capacity on any DoD contract or first-tier subcontract;

(2) On board of directors of any DoD Contractor or first-tier subcontractor;

(3) As a consultant to any DoD Contractor or first-tier subcontractor; or

(4) In any other capacity with the authority to influence, advise, or control the decisions of any DoD contractor or subcontractor with regard to any DoD contract or first-tier subcontract.

(c) Unless waived, the prohibition in paragraph (b) of this clause applies for not less than five years from the date of conviction.

(d) 10 U.S.C. 2408 provides that a defense Contractor or first-tier subcontractor shall be subject to a criminal penalty of not more than $500,000 if convicted of knowingly--

(1) Employing a person under a prohibition in paragraph (b) of this clause;

(2) Allowing such a person to serve on the board of directors of Contractor or first-tier subcontractor.

(e) In addition to the criminal penalties contained in 10 U.S.C. 2408, the Government may consider other available remedies, such as--

(1) Suspension or debarment;

(2) Cancellation of the contract at no cost to the Government; or

(3) Termination of the contract for default.

(f) The Contractor may submit written requests for waiver of the prohibition in paragraph (b) of this clause to the Contracting Officer. Requests shall clearly identify--

(1) The person involved;

(2) The nature of the conviction and resultant sentence or punishment imposed;

(3) The reasons for the requested waiver; and

(4) An explanation of why a waiver is in the interest of national security.

(g) The Contractor agrees to include the substance of this clause appropriately modified to reflect the identity and relationship of the parties, in all first-tier subcontracts exceeding the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation, except those for commercial items or components.

(h) Pursuant to 10 U.S.C.2408(c), defense contractors and subcontractors may obtain information as to whether a particular has been convicted of fraud or any other felony arising out of a contract with the DoD by contracting The Office of Justice Programs, The Denial of Federal Benefits Office, U.S. Department of Justice, telephone (202) 616-3507.

9. RESERVED

10. *FAR 52.203-10 PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) The Government, at its election, may reduce the price of a fixed-price type contract and the total cost and fee under a cost-type contract of profit or fee determined as set forth in paragraph (b) of this clause if the head of the contracting activity or designee determines that there was a violation of subsection 27(a), (b), or (c) of the Office of Federal Procurement Policy Act, as amended (41 U.S.C. 423), as implemented in section 3.104 of the Federal Acquisition Regulation.

(b) The price or fee reduction referred to in paragraph (a) of this clause shall be--

(1) For cost-plus-fixed-fee contracts, the amount of the fee specified in the contract at the time of award;

(2) For cost-plus-incentive-fee contracts, the target fee specified in the contract at the time of award, notwithstanding any minimum fee or "fee floor" specified in the contract;

(3) For cost-plus-award-fee contracts--

(i) The base fee established in the contract at the time of contract award;

(ii) If no base fee is specified in the contract, 30 percent of the amount of each award fee otherwise payable to the Contractor for each award fee evaluation period or at each award fee determination point.

(4) For fixed-price-incentive contracts, the Government may--

(i) Reduce the contract target price and contract target profit both by an amount equal to the initial target profit specified in the contract at the time of contract award; or

(ii) If an immediate adjustment to the contract target price and contract target profit would have a significant adverse impact on the incentive price revision relationship under the contract, or adversely affect the contract financing provisions, the Contracting Officer may defer such adjustment until establishment of the total final price of the contract. The total final price established in accordance with the incentive price revision provisions of the contract shall be reduced by an amount equal to the initial target profit specified in the contract at the time of contract award and such reduced price shall be the total final contract price.

(5) For firm-fixed-price contracts, by 10 percent of the initial contract price or a profit amount determined by the Contracting Officer from records or documents in existence prior to the date of the contract award.

(c) The Government may, at its election, reduce a prime contractor's price or fee in accordance with the procedures of paragraph (b) of this clause for violations of the Act by its subcontractors by an amount not to exceed the amount of profit or fee reflected in the subcontract at the time the subcontract was first definitively priced.

(d) In addition to the remedies in paragraphs (a) and (c) of this clause, the Government may terminate this contract for default. The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law or under this contract.

11. *FAR 52.203-12 LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (JUNE 2003)

(a) Definitions.

"Agency," as used in this clause, means executive agency as defined in 2.101.

"Covered Federal Action," as used in this clause, means any of the following Federal actions:

(1) The awarding of any Federal contract.

(2) The making of any Federal grant.

(3) The making of any Federal loan.

(4) The entering into of any cooperative agreement.

(5) The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

"Indian tribe" and "tribal organization," as used in this clause, have the meaning provided in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) and include Alaskan Natives.

"Influencing or attempting to influence," as used in this clause, means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.

"Local government," as used in this clause, means a unit of government in a State and, if chartered, established, or otherwise recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.

"Officer or employee of an agency," as used in this clause, includes the following individuals who are employed by an agency:

(1) An individual who is appointed to a position in the Government under title 5, United States Code, including a position under a temporary appointment.

(2) A member of the uniformed services, as defined in subsection 101(3), title 37, United States Code.

(3) A special Government employee, as defined in section 202, title 18, United States Code.

(4) An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, title 5, United States Code, appendix 2.

"Person," as used in this clause, means an individual, corporation, company, association, authority, firm, partnership, society, State and local government, regardless of whether such entity is operated for profit, or not for profit. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Reasonable compensation," as used in this clause, means, with respect to a regularly employed officer or employee of any person, compensation that is consistent with the normal compensation for such officer or employee for work that is not furnished to, not funded by, or not furnished in cooperation with the Federal Government.

"Reasonable payment," as used in this clause, means, with respect to professional and other technical services, a payment in an amount that is consistent with the amount normally paid for such services in the private sector.

"Recipient," as used in this clause, includes the Contractor and all subcontractors. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Regularly employed," as used in this clause, means, with respect to an officer or employee of a person requesting or receiving a Federal contract, an officer or employee who is employed by such person for at least 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract. An officer or employee who is employed by such person for less than 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.

"State," as used in this clause, means a State of the United States, the District of Columbia, or an outlying area of the United States, an agency or instrumentality of a State, and multi-State, regional, or interstate entity having governmental duties and powers.

(b) Prohibitions.

(1) Section 1352 of title 31, United States Code, among other things, prohibits a recipient of a Federal Contract, grant, loan, or cooperative agreement from using appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: The awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.

(2) The Act also requires Contractors to furnish a disclosure if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of

Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

(3) The prohibitions of the Act do not apply under the following conditions:

(i) Agency and legislative liaison by own employees.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of a payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action if the payment is for agency and legislative liaison activities not directly related to a covered Federal action.

(B) For purposes of subdivision (b)(3)(i)(A) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.

(C) The following agency and legislative liaison activities are permitted at any time where they are not related to a specific solicitation for any covered Federal action:

(1) Discussing with an agency the qualities and characteristics (including individual demonstrations) of the person's products or services, conditions or terms of sale, and service capabilities.

(2) Technical discussions and other activities regarding the application or adaptation of the person's products or services for an agency's use.

(D) The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any covered Federal action--

(1) Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;

(2) Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and

(3) Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Pub. L. 95-507, and subsequent amendments.

(E) Only those services expressly authorized by subdivision (b)(3)(i)(A) of this clause are permitted under this clause.

(ii) Professional and technical services.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of--

(1) A payment of reasonable compensation made to an officer or employee f a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action.

(2) Any reasonable payment to a person, other than an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action if the payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action. Persons other than officers or employees of a person requesting or receiving a covered Federal action include consultants and trade associations.

(B) For purposes of subdivision (b)(3)(ii)(A) of this clause, "professional and technical services" shall be limited to advice and analysis directly applying any professional or technical discipline. For example, drafting of a legal document accompanying a bid or proposal by a lawyer is allowable. Similarly, technical advice provided by an engineer on the performance or operational capability of a piece of equipment rendered directly in the negotiation of a contract is allowable. However, communications with the intent to influence made by a professional (such as a licensed lawyer) or a technical person (such as a licensed accountant) are not allowable under this section unless they provide advice and analysis directly applying their professional or technical expertise and unless the advice or analysis is rendered directly and solely in the preparation, submission or negotiation of a covered Federal action. Thus, for example, communications with the intent to influence made by a lawyer that do not provide legal advice or analysis directly and solely related to the legal aspects of his or her client's proposal, but generally advocate one proposal over another are not allowable under this section because the lawyer

is not providing professional legal services. Similarly, communications with the intent to influence made by an engineer providing an engineering analysis prior to the preparation or submission of a bid or proposal are not allowable under this section since the engineer is providing technical services but not directly in the preparation, submission or negotiation of a covered Federal action.

(C) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation and any other requirements in the actual award documents.

(D) Only those services expressly authorized by subdivisions (b)(3)(ii)(A)(1) and (2) of this clause are permitted under this clause.

(E) The reporting requirements of FAR 3.803(a) shall not apply with respect to payments of reasonable compensation made to regularly employed officers or employees of a person.

(iii) Disclosure.

(A) The Contractor who requests or receives from an agency a Federal contract shall file with that agency a disclosure form, OMB standard form LLL, Disclosure of Lobbying Activities, if such person has made or has agreed to make any payment using nonappropriated funds (to include profits from any covered Federal action), which would be prohibited under subparagraph (b)(1) of this clause, if paid for with appropriated funds.

(B) The Contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph (c)(1) of this clause. An event that materially affects the accuracy of the information reported includes--

(1) A cumulative increase of $25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or

(2) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or

(3) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.

(C) The Contractor shall require the submittal of a certification, and if required, a disclosure form by any person who requests or receives any subcontract exceeding $100,000 under the Federal contract.

(D) All subcontractor disclosure forms (but not certifications) shall be forwarded from tier to tier until received by the prime Contractor. The prime Contractor shall submit all disclosures to the Contracting Officer at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.

(iv) Agreement. The Contractor agrees not to make any payment prohibited by this clause.

(v) Penalties.

(A) Any person who makes an expenditure prohibited under paragraph (a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph (b) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.

(B) Contractors may rely without liability on the representation made by their subcontractors in the certification and disclosure form.

(vi) Cost allowability. Nothing in this clause makes allowable or reasonable any costs which would otherwise be unallowable or unreasonable. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any other provision.

12. DFARS 252.203-7002 DISPLAY OF DOD HOTLINE POSTER (DEC 1991)
(<u>For Military Contracts Exceeding $5,000,000</u>)

(a) The Contractor shall display prominently in common work areas within business segments performing work under Department of Defense (DoD) contracts, DoD Hotline Posters prepared by DoD Office of the Inspector General.

(b) DoD Hotline Posters may be obtained from the DoD Inspector General, ATTN: Defense Hotline, 400 Army Navy Drive, Washington DC 22202-2884.

(c) The Contract need not comply with paragraph (a) of this clause if it has established a mechanism, such as a hotline, by which employees may report suspected instances of improper conduct, and instructions that encourage employees to make such reports.

13. *FAR 52.204-4 PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER (AUG 2000)

(a) Definitions. As used in this clause—

"Postconsumer material" means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of "recovered material." For paper and paper products, postconsumer material means "postconsumer fiber" defined by the U.S. Environmental Protection Agency (EPA) as—

(1) Paper, paperboard, and fibrous materials from retail stores, office buildings, homes, and so forth, after they have passed through their end-usage as a consumer item, including: used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards; and used cordage; or

(2) All paper, paperboard, and fibrous materials that enter and are collected from municipal solid waste; but not

(3) Fiber derived from printers' over-runs, converters' scrap, and over-issue publications.

"Printed or copied double-sided" means printing or reproducing a document so that information is on both sides of a sheet of paper.

"Recovered material," for paper and paper products, is defined by EPA in its Comprehensive Procurement Guideline as "recovered fiber" and means the following materials:

(1) Postconsumer fiber; and

(2) Manufacturing wastes such as—

(i) Dry paper and paperboard waste generated after completion of the papermaking process (that is, those manufacturing operations up to and including the cutting and trimming of the paper machine reel into smaller rolls or rough sheets) including: envelope cuttings, bindery trimmings, and other paper and paperboard waste resulting from printing, cutting, forming, and other converting operations; bag, box, and carton manufacturing wastes; and butt rolls, mill wrappers, and rejected unused stock; and

(ii) Repulped finished paper and paperboard from obsolete inventories of paper and paperboard manufacturers, merchants, wholesalers, dealers, printers, converters, or others.

(b) In accordance with Section 101 of Executive Order 13101 of September 14, 1998, Greening the Government through Waste Prevention, Recycling, and Federal Acquisition, the Contractor is encouraged to submit paper documents, such as offers, letters, or reports, that are printed or copied double-sided on recycled paper that meet minimum content standards specified in Section 505 of Executive Order 13101, when not using electronic commerce methods to submit information or data to the Government.

(c) If the Contractor cannot purchase high-speed copier paper, offset paper, forms bond, computer printout paper, carbonless paper, file folders, white wove envelopes, writing and office paper, book paper, cotton fiber paper, and cover stock meeting the 30 percent postconsumer material standard for use in submitting paper documents to the Government, it should use paper containing no less than 20 percent postconsumer material. This lesser standard should be used only when paper meeting the 30 percent postconsumer material standard is not obtainable at a reasonable price or does not meet reasonable performance standards.

(End of clause)

14. *FAR 52.204-7 CENTRAL CONTRACTOR REGISTRATION (OCT 2003)

(a) Definitions. As used in this clause—

"Central Contractor Registration (CCR) database" means the primary Government repository for Contractor information required for the conduct of business with the Government.

"Data Universal Numbering System (DUNS) number" means the 9-digit number assigned by Dun and Bradstreet, Inc. (D&B) to identify unique business entities.

"Data Universal Numbering System +4 (DUNS+4) number" means the DUNS number assigned by D&B plus a 4-character suffix that may be assigned by a business concern. (D&B has no affiliation with this 4-character suffix.) This 4-character suffix may be assigned at the discretion of the business concern to establish additional CCR records for identifying alternative Electronic Funds Transfer (EFT) accounts (see the FAR at Subpart 32.11) for the same parent concern.

"Registered in the CCR database" means that—

(1) The Contractor has entered all mandatory information, including the DUNS number or the DUNS+4 number, into the CCR database; and

(2) The Government has validated all mandatory data fields and has marked the record "Active".

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee shall be registered in the CCR database prior to award, during performance, and through final payment of any contract, basic agreement, basic ordering agreement, or blanket purchasing agreement resulting from this solicitation.

(2) The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation "DUNS" or "DUNS +4" followed by the DUNS or DUNS +4 number that identifies the offeror's name and address exactly as stated in the offer. The DUNS number will be used by the Contracting Officer to verify that the offeror is registered in the CCR database.

(c) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one.

(1) An offeror may obtain a DUNS number—

(i) If located within the United States, by calling Dun and Bradstreet at 1-866-705-5711 or via the Internet at *http://www.dnb.com*; or

(ii) If located outside the United States, by contacting the local Dun and Bradstreet office.

(2) The offeror should be prepared to provide the following information:

(i) Company legal business.

(ii) Tradestyle, doing business, or other name by which your entity is commonly recognized.

(iii) Company Physical Street Address, City, State, and Zip Code.

(iv) Company Mailing Address, City, State and Zip Code (if separate from physical).

(v) Company Telephone Number.

(vi) Date the company was started.

(vii) Number of employees at your location.

(viii) Chief executive officer/key manager.

(ix) Line of business (industry).

(x) Company Headquarters name and address (reporting relationship within your entity).

(d) If the Offeror does not become registered in the CCR database in the time prescribed by the Contracting Officer, the Contracting Officer will proceed to award to the next otherwise successful registered Offeror.

(e) Processing time, which normally takes 48 hours, should be taken into consideration when registering.

Offerors who are not registered should consider applying for registration immediately upon receipt of this solicitation.

(f) The Contractor is responsible for the accuracy and completeness of the data within the CCR database, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to review and update on an annual basis from the date of initial registration or subsequent updates its information in the CCR database to ensure it is current, accurate and complete. Updating information in the CCR does not alter the terms and conditions of this contract and is not a substitute for a properly executed contractual document.

(g) (1) (i) If a Contractor has legally changed its business name, "doing business as" name, or division name (whichever is shown on the contract), or has transferred the assets used in performing the contract, but has not completed the necessary requirements regarding novation and change-of name agreements in Subpart 42.12, the Contractor shall provide the responsible Contracting Officer a minimum of one business day's written notification of its intention to (A) change the name in the CCR database; (B) comply with the requirements of Subpart 42.12 of the FAR; and (C) agree in writing to the timeline and procedures specified by the responsible Contracting Officer. The Contractor must provide with the notification sufficient documentation to support the legally changed name.

(ii) If the Contractor fails to comply with the requirements of paragraph (g)(1)(i) of this clause, or fails to perform the agreement at paragraph (g)(1)(i)(C) of this clause, and, in the absence of a properly executed novation or change-of name agreement, the CCR information that shows the Contractor to be other than the Contractor indicated in the contract will be considered to be incorrect information within the meaning of the "Suspension of Payment" paragraph of the electronic funds transfer (EFT) clause of this contract.

(2) The Contractor shall not change the name or address for EFT payments or manual payments, as appropriate, in the CCR record to reflect an assignee for the purpose of assignment of claims (see FAR Subpart 32.8, Assignment of Claims). Assignees shall be separately registered in the CCR database. Information provided to the Contractor's CCR record that indicates payments, including those made by EFT, to an ultimate recipient other than that Contractor will be considered to be incorrect information within the meaning of the "Suspension of payment" paragraph of the EFT clause of this contract.

(h) Offerors and Contractors may obtain information on registration and annual confirmation requirements via the internet at *http://www.ccr.gov* or by calling 1-888-227-2423, or 269-961-5757.
(End of clause)

15. DFARS 252.204-7003 CONTROL OF GOVERNMENT PERSONNEL WORK PRODUCT (APR 1992)

The Contractor's procedures for protecting against unauthorized disclosure of information shall not require Department of Defense employees or members of the Armed Forces to relinquish control of their work products, whether classified or not, to the Contractor.

16. DFARS 252.204-7004 ALTERNATE A (NOV 2003)

As prescribed in 204.1104, substitute the following paragraph (a) for paragraph (a) of the clause at FAR 52.204-7:

(a) *Definitions*. As used in this clause--

"Central Contractor Registration (CCR) database" means the primary Government repository for contractor information required for the conduct of business with the Government.

"Commercial and Government Entity (CAGE) code" means-

(1) A code assigned by the Defense Logistics Information Service (DLIS) to identify a commercial or Government entity; or

(2) A code assigned by a member of the North Atlantic Treaty Organization that DLIS records and maintains in the CAGE master file. This type of code is known as an "NCAGE code."

"Data Universal Numbering System (DUNS) number" means the 9-digit number assigned by Dun and Bradstreet, Inc. (D&B) to identify unique business entities.

"Data Universal Numbering System +4 (DUNS+4) number" means the DUNS number assigned by D&B plus a 4-character suffix that may be assigned by a business concern. (D&B has no affiliation with this 4-character suffix.) This 4-character suffix may be assigned at the discretion of the business concern to establish additional CCR records for identifying alternative Electronic Funds Transfer (EFT) accounts (see Subpart 32.11 of the Federal Acquisition Regulation) for the same parent concern.

"Registered in the CCR database" means that-

(1) The Contractor has entered all mandatory information, including the DUNS number or the DUNS+4 number, into the CCR database;

(2) The Contractor's CAGE code is in the CCR database; and

(3) The Government has validated all mandatory data fields and has marked the records "Active."

17. *FAR 52.209-6 PROTECTING THE GOVERNMENTS INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT (JUL 1995)

(a) The Government suspends or debars Contractors to protect the Government's interests. The Contractor shall not enter into any subcontract in excess of $25,000 with a Contractor that is debarred, suspended, or proposed for debarment unless there is a compelling reason to do so.

(b) The Contractor shall require each proposed first-tier subcontractor, whose subcontract will exceed $25,000, to disclose to the Contractor, in writing, whether as of the time of award of the subcontract, the subcontractor, or its principals, is or is not debarred, suspended, or proposed for debarment by the Federal Government.

(c) A corporate office or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is debarred, suspended, or proposed for debarment (see FAR 9.404 for information on the List of Parties Excluded from Procurement Programs). The notice must include the following:

(1) The name of the subcontractor.

(2) The Contractor's knowledge of the reasons for the subcontractor being on the List of Parties Excluded from Procurement Programs.

(3) The compelling reason(s) for doing business with the subcontractor notwithstanding its inclusion on the List of Parties Excluded From Procurement Programs.

(4) The systems and procedures the Contractor has established to ensure that it is fully protecting the Government's interests when dealing with such subcontractor in view of the specific basis for the party's debarment, suspension, or proposed debarment.

18. DFARS 252.209-7004 SUBCONTRACTING WITH FIRMS THAT ARE OWNED OR CONTROLLED BY THE GOVERNMENT OF A TERRORIST COUNTY (MAR 1998)

(a) Unless the Government determines that there is a compelling reason to do so, the Contractor shall not enter into any subcontract in excess of $25,000 with a firm, or a subsidiary of a firm, that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country.

(b) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country. The notice must include the name of the proposed subcontractor and the compelling reason(s) for doing business with the subcontractor notwithstanding its inclusion on the List of Parties Excluded From Federal Procurement and Nonprocurement Programs.

(End of clause)

19. *FAR 52.211-15 DEFENSE PRIORITY AND ALLOCATION REQUIREMENTS (SEP 1990) [For Military Contract's Only]

This is a rated order certified for national defense use, and the Contractor shall follow all the requirements of the Defense Priorities and Allocations System regulation (15 CFR 700).

20. DELETED~~FAR 52.211-18 VARIATION IN ESTIMATED QUANTITY (APR 1984)~~

~~If the quantity of a unit-priced item in this contract is an estimated quantity and the actual quantity of the unit-priced item varies more than 15 percent above or below the estimated quantity, an equitable adjustment in the contract price shall be made upon demand of either party. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variation above 115 percent or below 85 percent of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the Contractor may request, in writing, an extension of time, to be received by the Contracting Officer within 10 days from the beginning of the delay, or within such further period as may be granted by the Contracting Officer before the date of final settlement of the contract. Upon the receipt of a written request for an extension, the Contracting Officer shall ascertain the facts and make an adjustment for extending the completion date as, in the judgement of the Contracting Officer, is justified.~~

21. *FAR 52.215-2 AUDIT AND RECORDS-NEGOTIATION (JUNE 1999)

(a) As used in this clause, "records" includes books, documents, accounting procedures and practices, and other data, regardless of type and regardless of whether such items are in written form, in the form of computer data, or in any other form.

(b) Examination of costs. If this is a cost-reimbursement, incentive, time-and-materials, labor-hour, or price redeterminable contract, or any combination of these, the Contractor shall maintain and the Contracting Officer, or an authorized representative of the Contracting Officer, shall have the right to examine and audit all records and other evidence sufficient to reflect properly all costs claimed to have been incurred or anticipated to be incurred directly or indirectly in performance of this contract. This right of examination shall include inspection at all reasonable times of the Contractor's plants, or parts of them, engaged in performing the contract.

(c) Cost or pricing data. If the Contractor has been required to submit cost or pricing data in connection with any pricing action relating to this contract, the Contracting Officer, or an authorized representative of the Contracting Officer, in order to evaluate the accuracy, completeness, and currency of the cost or pricing data, shall have the right to examine and audit all of the Contractor's records, including computations and projections, related to--

(1) The proposal for the contract, subcontract, or modification;

(2) The discussions conducted on the proposal(s), including those related to negotiating;

(3) Pricing of the contract, subcontract, or modification; or

(4) Performance of the contract, subcontract or modification.

(d) Comptroller General--(1) The Comptroller General of the United States, or an authorized representative, shall have access to and the right to examine any of the Contractor's directly pertinent records involving transactions related to this contract or a subcontract hereunder.

(2) This paragraph may not be construed to require the Contractor or subcontractor to create or maintain any record that the Contractor or subcontractor does not maintain in the ordinary course of business or pursuant to a provision of law.

(e) Reports. If the Contractor is required to furnish cost, funding, or performance reports, the Contracting Officer or an authorized representative of the Contracting Officer shall have the right to examine and audit the supporting records and materials, for the purpose of evaluating--

(1) The effectiveness of the Contractor's policies and procedures to produce data compatible with the objectives of these reports; and

(2) The data reported.

(f) Availability. The Contractor shall make available at its office at all reasonable times the records, materials, and other evidence described in paragraphs (a), (b), (c), (d), and (e) of this clause, for examination, audit, or reproduction, until 3 years after final payment under this contract or for any shorter period specified in Subpart 4.7, Contractor Records Retention, of the Federal Acquisition Regulation (FAR), or for any longer period required by statute or by other clauses of this contract. In addition--

(1) If this contract is completely or partially terminated, the Contractor shall make available the records relating to the work terminated until 3 years after any resulting final termination settlement; and

(2) The Contractor shall make available records relating to appeals under the Disputes clause or to litigation or the settlement of claims arising under or relating to this contract shall be made available until such appeals, litigation, or claims are finally resolved.

(g) The Contractor shall insert a clause containing all the terms of this clause, including this paragraph (g), in all subcontracts under this contract that exceed the simplified acquisition threshold, and--

(1) That are cost-reimbursement, incentive, time-and-materials, labor-hour, or price-redeterminable type or any combination of these;

(2) For which cost or pricing data are required; or

(3) That require the subcontractor to furnish reports as discussed in paragraph (e) of this clause.

The clause may be altered only as necessary to identify properly the contracting parties and the Contracting Officer under the Government prime contract.

(End of clause)

22. *FAR 52.215-10 PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA (OCT 1997)

(a) If any price, including profit or fee, negotiated in connection with this contract, or any cost reimbursable under this contract, was increased by any significant amount because--

(1) The Contractor or a subcontractor furnished cost or pricing data that were not complete, accurate, and current as certified in its Certificate of Current Cost or Pricing Data;

(2) A subcontractor or prospective subcontractor furnished the Contractor cost or pricing data that were not complete, accurate, and current as certified in the Contractor's Certificate of Current Cost or Pricing Data; or

(3) Any of these parties furnished data of any description that were not accurate, the price or cost shall be reduced accordingly and the contract shall be modified to reflect the reduction.

(b) Any reduction in the contract price under paragraph (a) of this clause due to defective data from a prospective subcontractor that was not subsequently awarded the subcontract shall be limited to the amount, plus applicable overhead and profit markup, by which--

(1) The actual subcontract; or

(2) The actual cost to the Contractor, if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor; provided, that the actual subcontract price was not itself affected by defective cost or pricing data.

(c)(1) If the Contracting Officer determines under paragraph (a) of this clause that a price or cost reduction should be made, the Contractor agrees not to raise the following matters as a defense:

(i) The Contractor or subcontractor was a sole source supplier or otherwise was in a superior bargaining position and thus the price of the contract would not have been modified even if accurate, complete, and current cost or pricing data had been submitted.

(ii) The Contracting Officer should have known that the cost or pricing data in issue were defective even though the Contractor or subcontractor took no affirmative action to bring the character of the data to the attention of the Contracting Officer.

(iii) The contract was based on an agreement about the total cost of the contract and there was no agreement about the cost of each item procured under the contract.

(iv) The Contractor or subcontractor did not submit a Certificate of Current Cost or Pricing Data.

(2)(i) Except as prohibited by subdivision (c)(2)(ii) of this clause, an offset in an amount determined appropriate by the (2)(i) Except as prohibited by subdivision (c)(2)(ii) of this clause, an offset in an amount determined appropriate by the Contracting Officer based upon the facts shall be allowed against the amount of a contract price reduction if--

(A) The Contractor certifies to the Contracting Officer that, to the best of the Contractor's knowledge and belief, the Contractor is entitled to the offset in the amount requested; and

(B) The Contractor proves that the cost or pricing data were available before the "as of" date specified on its Certificate of Current Cost or Pricing Data, and that the data were not submitted before such date.

(ii) An offset shall not be allowed if--

(A) The understated data were known by the Contractor to be understated before the "as of" date specified on its Certificate of Current Cost or Pricing Data; or

(B) The Government proves that the facts demonstrate that the contract price would not have increased in the amount to be offset even if the available data had been submitted before the "as of" date specified on its Certificate of Current Cost or Pricing Data.

(d) If any reduction in the contract price under this clause reduces the price of items for which payment was made prior to the date of the modification reflecting the price reduction, the Contractor shall be liable to and shall pay the United States at the time such overpayment is repaid--

(1) Simple interest on the amount of such overpayment to be computed from the date(s) of overpayment to the Contractor to the date the Government is repaid by the Contractor at the applicable underpayment rate effective for each quarter prescribed by the Secretary of the Treasury under 26 U.S.C. 6621(a)(2); and

(2) A penalty equal to the amount of the overpayment, if the Contractor or subcontractor knowingly submitted cost or pricing data that were incomplete, inaccurate, or noncurrent.

(End of clause)

23. *FAR 52.215-12 SUBCONTRACTOR COST OR PRICING DATA (OCT 1997)

(a) Before awarding any subcontract expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, on the date of agreement on price or the date of award, whichever is later; or before pricing any subcontract modification involving a pricing adjustment expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, the Contractor shall require the subcontractor to submit cost or pricing data (actually or by specific identification in writing), unless an exception under FAR 15.403-1 applies.

(b) The Contractor shall require the subcontractor to certify in substantially the form prescribed in FAR 15.406-2 that, to the best of its knowledge and belief, the data submitted under paragraph (a) of this clause were accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract modification.

(c) In each subcontract that exceeds the threshold for submission of cost or pricing data at FAR 15.403-4, when entered into, the Contractor shall insert either--

(1) The substance of this clause, including this paragraph (c), if paragraph (a) of this clause requires submission of cost or pricing data for the subcontract; or

(2) The substance of the clause at FAR 52.215-13, Subcontractor Cost or Pricing Data--Modifications.

(End of clause)

24. *FAR 52.215-15 PENSION ADJUSTMENTS AND ASSET REVERSIONS (JAN 2004)

(a) The Contractor shall promptly notify the Contracting Officer in writing when it determines that it will terminate a defined-benefit pension plan or otherwise recapture such pension fund assets.

(b) For segment closings, pension plan terminations, or curtailment of benefits, the amount of the adjustment shall be—

(1) For contracts and subcontracts that are subject to full coverage under the Cost Accounting Standards (CAS) Board rules and regulations (48 CFR Chapter 99), the amount measured, assigned, and allocated in

accordance with 48 CFR 9904.413-50(c)(12); and

(2) For contracts and subcontracts that are not subject to full coverage under the CAS, the amount measured, assigned, and allocated in accordance with 48 CFR 9904.413-50(c)(12), except the numerator of the fraction at 48 CFR 904.413-50(c)(12)(vi) shall be the sum of the pension plan costs allocated to all non-CAS covered contracts and subcontracts that are subject to Federal Acquisition Regulation (FAR) Subpart 31.2 or for which cost or pricing data were submitted.

(c) For all other situations where assets revert to the Contractor, or such assets are constructively received by it for any reason, the Contractor shall, at the Government's option, make a refund or give a credit to the Government for its equitable share of the gross amount withdrawn. The Government's equitable share shall reflect the Government's participation in pension costs through those contracts for which cost or pricing data were submitted or that are subject to FAR Subpart 31.2.

(d) The Contractor shall include the substance of this clause in all subcontracts under this contract that meet the applicability requirement of FAR 15.408(g).

(End of clause)

25. *FAR 52.215-16 FACILITIES CAPITAL COST OF MONEY (JUNE 2003)

(a) Facilities capital cost of money will be an allowable cost under the contemplated contract, if the criteria for allowability in FAR 31.205-10(b) are met. One of the allowability criteria requires the prospective contractor to propose facilities capital cost of money in its offer.

(b) If the prospective Contractor does not propose this cost, the resulting contract will include the clause Waiver of Facilities Capital Cost of Money.

(End of provision)

26. *FAR 52.215-17 WAIVER OF FACILITIES CAPITAL COST OF MONEY (OCT 1997)

The Contractor did not include facilities capital cost of money as a proposed cost of this contract. Therefore, it is an unallowable cost under this contract.

(End of clause)

27. *FAR 52.215-18 REVERSION OR ADJUSTMENT OF PLANS FOR POST RETIREMENT BENEFITS (PRB) OTHER THAN PENSIONS (OCT 1997)

The Contractor shall promptly notify the Contracting Officer in writing when it determines that it will terminate or reduce a PRB plan. If PRB fund assets revert, or inure, to the Contractor or are constructively received by it under a plan termination or otherwise, the Contractor shall make a refund or give a credit to the Government for its equitable share as required by FAR 31.205-6(o)(6). The Contractor shall include the substance of this clause in all subcontracts under this contract that meet the applicability requirements of FAR 15.408(j).

(End of clause)

28. *FAR 52.219-4 NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS (JAN 1999)

(a) *Definition*. "HUBZone small business concern," as used in this clause, means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business

Administration.

(b) *Evaluation preference*. (1) Offers will be evaluated by adding a factor of 10 percent to the price of all offers, except—

(i) Offers from HUBZone small business concerns that have not waived the evaluation preference;

(ii) Otherwise successful offers from small business concerns;

(iii) Otherwise successful offers of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is exceeded (see 25.402 of the Federal Acquisition Regulation (FAR)); and

(iv) Otherwise successful offers where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government.

(2) The factor of 10 percent shall be applied on a line item basis or to any group of items on which award may be made. Other evaluation factors described in the solicitation shall be applied before application of the factor.

(3) A concern that is both a HUBZone small business concern and a small disadvantaged business concern will receive the benefit of both the HUBZone small business price evaluation preference and the small disadvantaged business price evaluation adjustment (see FAR clause 52.219-23). Each applicable price evaluation preference or adjustment shall be calculated independently against an offeror's base offer. These individual preference amounts shall be added together to arrive at the total evaluated price for that offer.

(c) *Waiver of evaluation preference*. A HUBZone small business concern may elect to waive the evaluation preference, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply if the offeror has waived the evaluation preference.

[ ] Offeror elects to waive the evaluation preference.

(d) *Agreement*. A HUBZone small business concern agrees that in the performance of the contract, in the case of a contract for—

(1) Services (except construction), at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern or employees of other HUBZone small business concerns;

(2) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern or other HUBZone small business concerns;

(3) General construction, at least 15 percent of the cost of the contract performance incurred for personnel will be will be spent on the concern's employees or the employees of other HUBZone small business concerns; or

(4) Construction by special trade contractors, at least 25 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns.

(e) A HUBZone joint venture agrees that in the performance of the contract, the applicable percentage specified in paragraph (d) of this clause will be performed by the HUBZone small business participant or participants.

(f) A HUBZone small business concern nonmanufacturer agrees to furnish in performing this contract only end items manufactured or produced by HUBZone small business manufacturer concerns. This paragraph does not apply in connection with construction or service contracts.

(End of clause)

29. *FAR 52.219-8 UTILIZATION OF SMALL BUSINESS CONCERNS (MAY 2004)

(a) It is the policy of the United States that small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns shall have the maximum practicable opportunity to participate in performing contracts let by any Federal agency, including contracts and subcontracts for subsystems, assemblies, components, and related services for major systems. It is further the policy of the United States that its prime contractors establish procedures to ensure the timely payment of amounts due pursuant to the

terms of their subcontracts with small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns.

(b) The Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with efficient contract performance. The Contractor further agrees to cooperate in any studies or surveys as may be conducted by the United States Small Business Administration or the awarding agency of the United States as may be necessary to determine the extent of the Contractor 's compliance with this clause.

(c) *Definitions*. As used in this contract—

"HUBZone small business concern" means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration .

"Service-disabled veteran-owned small business concern " —

(1) Means a small business concern—

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a service-disabled veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern" means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.

"Small disadvantaged business concern" means a small business concern that represents, as part of its offer that—

(1) It has received certification as a small disadvantaged business concern consistent with 13 CFR part 124, Subpart B;

(2) No material change in disadvantaged ownership and control has occurred since its certification;

(3) Where the concern is owned by one or more individuals, the net worth of each individual upon whom the certification is based does not exceed $750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(4) It is identified, on the date of its representation, as a certified small disadvantaged business in the database maintained by the Small Business Administration (PRO-Net).

"Veteran-owned small business concern" means a small business concern—

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern" means a small business concern—

(1) That is at least 51 percent owned by one or more women, or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as a small business concern, a veteran-owned small business concern, a service-disabled veteran-owned small business concern, a HUBZone small business concern, a small disadvantaged business concern, or a women-owned small business concern.

(End of clause)

30. *FAR 52.219-9 SMALL BUSINESS SUBCONTRACTING PLAN (JAN 2002) [<u>When Contracting By Negotiations</u>]

(a) This clause does not apply to small business concerns.

(b) *Definitions*. As used in this clause—

"Commercial item" means a product or service that satisfies the definition of commercial item in section 2.101 of the Federal Acquisition Regulation.

"Commercial plan" means a subcontracting plan (including goals) that covers the offeror's fiscal year and that applies to the entire production of commercial items sold by either the entire company or a portion thereof (*e.g.*, division, plant, or product line).

"Individual contract plan" means a subcontracting plan that covers the entire contract period (including option periods), applies to a specific contract, and has goals that are based on the offeror's planned subcontracting in support of the specific contract, except that indirect costs incurred for common or joint purposes may be allocated on a prorated basis to the contract.

"Master plan" means a subcontracting plan that contains all the required elements of an individual contract plan, except goals, and may be incorporated into individual contract plans, provided the master plan has been approved.

"Subcontract" means any agreement (other than one involving an employer-employee relationship) entered into by a Federal Government prime Contractor or subcontractor calling for supplies or services required for performance of the contract or subcontract.

(c) The offeror, upon request by the Contracting Officer, shall submit and negotiate a subcontracting plan, where applicable, that separately addresses subcontracting with small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business concerns, small disadvantaged business, and women-owned small business concerns. If the offeror is submitting an individual contract plan, the plan must separately address subcontracting with small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns, with a separate part for the basic contract and separate parts for each option (if any). The plan shall be included in and made a part of the resultant contract. The subcontracting plan shall be negotiated within the time specified by the Contracting Officer. Failure to submit and negotiate the subcontracting plan shall make the offeror ineligible for award of a contract.

(d) The offeror's subcontracting plan shall include the following:

(1) Goals, expressed in terms of percentages of total planned subcontracting dollars, for the use of small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns as subcontractors. The offeror shall include all subcontracts that contribute to contract performance, and may include a proportionate share of products and services that are normally allocated as indirect costs.

(2) A statement of—

(i) Total dollars planned to be subcontracted for an individual contract plan; or the offeror's total projected sales, expressed in dollars, and the total value of projected subcontracts to support the sales for a commercial plan;

(ii) Total dollars planned to be subcontracted to small business concerns;

(iii) Total dollars planned to be subcontracted to veteran-owned small business concerns;

(iv) Total dollars planned to be subcontracted to service-disabled veteran-owned small business;

(v) Total dollars planned to be subcontracted to HUBZone small business concerns;

(vi) Total dollars planned to be subcontracted to small disadvantaged business concerns; and

(vii) Total dollars planned to be subcontracted to women-owned small business concerns.

(3) A description of the principal types of supplies and services to be subcontracted, and an identification of the types planned for subcontracting to—

(i) Small business concerns;

(ii) Veteran-owned small business concerns;

(iii) Service-disabled veteran-owned small business concerns;

(iv) HUBZone small business concerns;

(v) Small disadvantaged business concerns; and

(vi) Women-owned small business concerns.

(4) A description of the method used to develop the subcontracting goals in paragraph (d)(1) of this clause.

(5) A description of the method used to identify potential sources for solicitation purposes (*e.g.*, existing company source lists, the Procurement Marketing and Access Network (PRO-Net) of the Small Business Administration (SBA), veterans service organizations, the National Minority Purchasing Council Vendor Information Service, the Research and Information Division of the Minority Business Development Agency in the Department of Commerce, or small, HUBZone, small disadvantaged, and women-owned small business trade associations). A firm may rely on the information contained in PRO-Net as an accurate representation of a concern's size and ownership characteristics for the purposes of maintaining a small, veteran-owned small, service-disabled veteran-owned small, HUBZone small, small disadvantaged, and women-owned small business source list. Use of PRONet as its source list does not relieve a firm of its responsibilities (*e.g.*, outreach, assistance, counseling, or publicizing subcontracting opportunities) in this clause.

(6) A statement as to whether or not the offeror included indirect costs in establishing subcontracting goals, and a description of the method used to determine the proportionate share of indirect costs to be incurred with—

(i) Small business concerns;

(ii) Veteran-owned small business concerns;

(iii) Service-disabled veteran-owned small business concerns;

(iv) HUBZone small business concerns;

(v) Small disadvantaged business concerns; and

(vi) Women-owned small business concerns.

(7) The name of the individual employed by the offeror who will administer the offeror's subcontracting program, and a description of the duties of the individual.

(8) A description of the efforts the offeror will make to assure that small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns have an equitable opportunity to compete for subcontracts.

(9) Assurances that the offeror will include the clause of this contract entitled "Utilization of Small Business Concerns" in all subcontracts that offer further subcontracting opportunities, and that the offeror will require all subcontractors (except small business concerns) that receive subcontracts in excess of $500,000 ($1,000,000 for construction of any public facility) to adopt a subcontracting plan that complies with the requirements of this clause.

(10) Assurances that the offeror will—

(i) Cooperate in any studies or surveys as may be required;

(ii) Submit periodic reports so that the Government can determine the extent of compliance by the offeror with the subcontracting plan;

(iii) Submit Standard Form (SF) 294, Subcontracting Report for Individual Contracts, and/or SF 295, Summary Subcontract Report, in accordance with paragraph (j) of this clause. The reports shall provide information on subcontract awards to small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, women-owned small business concerns, and Historically Black Colleges and Universities and Minority Institutions. Reporting shall be in accordance with the instructions on the forms or as provided in agency regulations.

(iv) Ensure that its subcontractors agree to submit SF 294 and SF 295.

(11) A description of the types of records that will be maintained concerning procedures that have been adopted to comply with the requirements and goals in the plan, including establishing source lists; and a description of the offeror's efforts to locate small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns and award subcontracts to them. The records shall include at least the following (on a plant-wide or company-wide basis, unless otherwise indicated):

(i) Source lists (*e.g.*, PRO-Net), guides, and other data that identify small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns.

(ii) Organizations contacted in an attempt to locate sources that are small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, or women-owned small business concerns.

(iii) Records on each subcontract solicitation resulting in an award of more than

$100,000, indicating—

(A) Whether small business concerns were solicited and, if not, why not;

(B) Whether veteran-owned small business concerns were solicited and, if not, why not;

(C) Whether service-disabled veteran-owned small business concerns were solicited and, if not, why not;

(D) Whether HUBZone small business concerns were solicited and, if not, why not;

(E) Whether small disadvantaged business concerns were solicited and, if not, why not;

(F) Whether women-owned small business concerns were solicited and, if not, why not; and

(G) If applicable, the reason award was not made to a small business concern.

(iv) Records of any outreach efforts to contact—

(A) Trade associations;

(B) Business development organizations;

(C) Conferences and trade fairs to locate small, HUBZone small, small disadvantaged, and women-owned small business sources; and

(D) Veterans service organizations.

(v) Records of internal guidance and encouragement provided to buyers through—

(A) Workshops, seminars, training, etc.; and

(B) Monitoring performance to evaluate compliance with the program's requirements.

(vi) On a contract-by-contract basis, records to support award data submitted by the offeror to the Government, including the name, address, and business size of each subcontractor. Contractors having commercial plans need not comply with this requirement.

(e) In order to effectively implement this plan to the extent consistent with efficient contract performance, the Contractor shall perform the following functions:

(1) Assist small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation by such concerns. Where the Contractor's lists of potential small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business subcontractors are excessively long, reasonable effort shall be made to give all such small business concerns an opportunity to compete over a period of time.

(2) Provide adequate and timely consideration of the potentialities of small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns in all "make-or-buy" decisions.

(3) Counsel and discuss subcontracting opportunities with representatives of small business, veteran-owned small business, service-disabled veteran-owned small business , HUBZone small business, small disadvantaged business, and women-owned small business firms.

(4) Provide notice to subcontractors concerning penalties and remedies for misrepresentations of business status as small, veteran-owned small business, HUBZone small, small disadvantaged, or women-owned small business for the purpose of obtaining a subcontract that is to be included as part or all of a goal contained in the Contractor's subcontracting plan.

(f) A master plan on a plant or division-wide basis that contains all the elements required by paragraph (d) of this clause, except goals, may be incorporated by reference as a part of the subcontracting plan required of the offeror by this clause; provided —

(1) The master plan has been approved;

(2) The offeror ensures that the master plan is updated as necessary and provides copies of the approved master plan, including evidence of its approval, to the Contracting Officer; and

(3) Goals and any deviations from the master plan deemed necessary by the Contracting Officer to satisfy the requirements of this contract are set forth in the individual subcontracting plan.

(g) A commercial plan is the preferred type of subcontracting plan for contractors furnishing commercial

items. The commercial plan shall relate to the offeror's planned subcontracting generally, for both commercial and Government business, rather than solely to the Government contract. Commercial plans are also preferred for subcontractors that provide commercial items under a prime contract, whether or not the prime contractor is supplying a commercial item.

(h) Prior compliance of the offeror with other such subcontracting plans under previous contracts will be considered by the Contracting Officer in determining the responsibility of the offeror for award of the contract.

(i) The failure of the Contractor or subcontractor to comply in good faith with—

(1) The clause of this contract entitled "Utilization Of Small Business Concerns;" or

(2) An approved plan required by this clause, shall be a material breach of the contract.

(j) The Contractor shall submit the following reports:

(1) *Standard Form 294, Subcontracting Report for Individual Contracts.* This report shall be submitted to the Contracting Officer semiannually and at contract completion. The report covers subcontract award data related to this contract. This report is not required for commercial plans.

(2) *Standard Form 295, Summary Subcontract Report.* This report encompasses all of the contracts with the awarding agency. It must be submitted semi-annually for contracts with the Department of Defense and annually for contracts with civilian agencies. If the reporting activity is covered by a commercial plan, the reporting activity must report annually all subcontract awards under that plan. All reports submitted at the close of each fiscal year (both individual and commercial plans) shall include a breakout, in the Contractor's format, of subcontract awards, in whole dollars, to small disadvantaged business concerns by North American Industry Classification System (NAICS) Industry Subsector. For a commercial plan, the Contractor may obtain from each of its subcontractors a predominant NAICS Industry Subsector and report all awards to that subcontractor under its predominant NAICS Industry Subsector.

(End of clause)

31. *FAR 52.219-16 LIQUIDATED DAMAGES-SUBCONTRACTING PLAN (JAN 1999)

(a) Failure to make a good faith effort to comply with the subcontracting plan, as used in this clause, means a willful or intentional failure to perform in accordance with the requirements of the subcontracting plan approved under the clause in this contract entitled ``Small Business Subcontracting Plan," or willful or intentional action to frustrate the plan.

(b) Performance shall be measured by applying the percentage goals to the total actual subcontracting dollars or, if a commercial plan is involved, to the pro rata share of actual subcontracting dollars attributable to Government contracts covered by the commercial plan., If, at contract completion, or in the case of a commercial plan, at the close of the fiscal year for which the plan is applicable, the Contractor has failed to meet its subcontracting goals and the Contracting Officer decides in accordance with paragraph (c) of this clause that the Contractor failed to make a good faith effort to comply with its subcontracting plan, established in accordance with the clause in this contract entitled ``Small Business Subcontracting Plan," the Contractor shall pay the Government liquidated damages in an amount stated. The amount of probable damages attributable to the Contractor's failure to comply shall be an amount equal to the actual dollar amount by which the Contractor failed to achieve each subcontract goal.

(c) Before the Contracting Officer makes a final decision that the Contractor has failed to make such good faith effort, the Contracting Officer shall give the Contractor written notice specifying the failure and permitting the Contractor to demonstrate what good faith efforts have been made and to discuss the matter. Failure to respond to the notice may be taken as an admission that no valid explanation exists. If, after consideration of all the pertinent data, the Contracting Officer finds that the Contractor failed to make a good faith effort to comply with the subcontracting plan, the Contracting Officer shall issue a final decision to that effect and require that the Contractor pay the Government liquidated damages as provided in paragraph (b) of this clause.

(d) With respect to commercial plans, the Contracting Officer who approved the plan will perform the functions of the Contracting Officer under this clause on behalf of all agencies with contracts covered by a commercial plan.

(e) The Contractor shall have the right of appeal, under the clause in this contract entitled, Disputes, from many final decision of the Contracting Officer.

(f) Liquidated damages shall be in addition to any other remedies that the Government may have.

32. FAR 52.219-27 NOTICE OF TOTAL SERVICE-DISABLED VETERAN-OWNED SMALL BUSINESS SET-ASIDE (MAY 2004)

[Applicable only to projects restricted to Service-disabled veteran-owned small business set- asides]

(a) *Definition*. "Service-disabled veteran-owned small business concern"-

(1) Means a small business concern-

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a service-disabled veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) "Service-disabled veteran" means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

(b) *General*.

(1) Offers are solicited only from service-disabled veteran-owned small business concerns. Offers received from concerns that are not service-disabled veteran-owned small business concerns shall not be considered.

(2) Any award resulting from this solicitation will be made to a service-disabled veteran-owned small business concern.

(c) *Agreement*. A service-disabled veteran-owned small business concern agrees that in the performance of the contract, in the case of a contract for-

(1) Services (except construction), at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern or employees of other service-disabled veteran-owned small business concerns;

(2) Supplies (other than acquisition from a nonmanufacturer of the supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern or other service-disabled veteran-owned small business concerns;

(3) General construction, at least 15 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other service-disabled veteran-owned small business concerns; or

(4) Construction by special trade contractors, at least 25 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other service-disabled veteran-owned small business concerns.

(d) A joint venture may be considered a service-disabled veteran owned small business concern if-

(1) At least one member of the joint venture is a service-disabled veteran-owned small business concern, and makes the following representations: That it is a service-disabled veteran-owned small business concern, and that it is a small business concern under the North American Industry Classification Systems (NAICS) code assigned to the procurement;

(2) Each other concern is small under the size standard corresponding to the NAICS code assigned to the procurement; and

(3) The joint venture meets the requirements of paragraph 7 of the explanation of Affiliates in 19.101 of the Federal Acquisition Regulation.

(4) The joint venture meets the requirements of 13 CFR 125.15(b)

(e) Any service-disabled veteran-owned small business concern (nonmanufacturer) must meet the requirements in 19.102(f) of the Federal Acquisition Regulation to receive a benefit under this program.

(End of clause)

33. DFARS 252.219-7003 SMALL, SMALL DISADVANTAGED AND WOMEN-OWNED SMALL BUSINESS SUBCONTRACTING PLAN (DOD CONTRACTS) (APR 1996)

This clause supplements the Federal Acquisition Regulation 52.219-9, Small, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan, clause of this contract.

(a) Definitions.

"Historically black colleges and universities," as used in this clause, means institutions determined by the Secretary of Education to meet the requirements of 34 CFR Section 608.2. The term also means any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

"Minority institutions," as used in this clause, means institutions meeting the requirements of Section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1135d-5(3)). The term also includes Hispanic-serving institutions as defined in Section 316(b)(1) of such Act (20 U.S.C. 1059c(b)(1).

(b) Except for company or division-wide commercial products subcontracting plans, the term "small disadvantaged business," when used in the FAR 52.219-9 clause, includes historically black colleges and universities and minority institutions in addition to small disadvantaged business concerns.

(c) Work under the contract or its subcontracts shall be credited toward meeting the small disadvantaged business concern goal required by paragraph (d) of the FAR 52.219-9 clause when:

(1) It is performed on Indian lands or in joint venture with an Indian tribe or a tribally-owned corporation, and

(2) It meets the requirements of 10 U.S.C. 2323a.

(d) Subcontracts awarded to workshops approved by the Committee for Purchase from People Who are Blind or Severely Disabled (41 U.S.C. 46-48), may be counted toward the Contractor's small business subcontracting goal.

(e) A mentor firm, under the Pilot Mentor-Protege Program established under Section 831 of Pub. L. 101-510, as amended, may count toward its small disadvantaged business goal, subcontracts awarded--

(1) Protege firms which are qualified organizations employing the severely handicapped; and

(2) Former protege firms that meet the criteria in Section 831(g)(4) of Pub. L. 101-510.

(f) The master plan approval referred to in paragraph (f) of the FAR 52.219-9 clause is approval by the Contractor's cognizant contract administration activity.

(g) In those subcontracting plans whihc specifically identify small, small disadvantaged, and women-owned businesses, the Contractor shall notify the Administrative Contracting Officer of any substitutions of firms that are not small, small disadvantaged, or women-owned small businesses for the firms listed in the subcontracting plan. Notifications shall be in writing and shall occur within a reasonable period of time after award of the subcontract. Contractor-specified formats shall be acceptable.

34. DFARS 252.219-7004 SMALL, SMALL DISADVANTAGED AND WOMEN-OWNED SMALL BUSINESS SUBCONTRACTING PLAN (TEST PROGRAM) (JUN 1997)

(a) Definition. "Subcontract," as used in this clause, means any agreement (other than one involving an employer-employee relationship) entered into by a Federal Government prime Contractor or subcontractor calling for supplies or services required for performance of the contract or subcontract.

(b) The Offeror's comprehensive small business subcontracting plan and its successors, which are authorized by and approved under the test program of Section 834 of Pub. L. 101-189, shall be included in and made a part of the resultant contract. Upon expulsion from the test program or expiration of the test program, the Contractor shall negotiate an individual subcontracting plan for all future contracts that meet the requirements of Section 211 of Publ. L. 95-507.

(c) The Contractor shall submit Standard Form 295, Summary Subcontract Report, in accordance with the instructions on the form, except--

(1) One copy of SF 295 and attachments shall be submitted to Director, Small and Disadvantaged Business Utilization, Office of the Deputy Under Secretary of Defense (International and Commercial Programs), 3061 Defense Pentagon, Room 2A338, Washington, DC 20301-3061; and

(2) Item 14, Remarks, shall be completed to include semi-annual cumulative--

(1) Small business, small disadvantaged business and women-owned small business goals; and

(2) Small business and small disadvantaged business goals, actual accomplishments, and percentages for each of the two designated industry categories.

(d) The failure of the Contractor or subcontractor to comply in good faith with (1) the clause of this contract entitled "Utilization of Small, Small Disadvantaged and Women-Owned Small Business Concerns," or (2) an approved plan required by this clause, shall be a material breach of the contract.

35. DFARS 252.219-7009 SECTION 8(a) DIRECT AWARD (MAR 2002)

(a) This contract is issued as a direct award between the contracting office and the 8(a) Contractor pursuant to the Partnership Agreement dated February 1, 2002, between the Small Business Administration (SBA) and the Department of Defense. Accordingly, the SBA, even if not identified in Section A of this contract, is the prime contractor and retains responsibility for 8(a) certification, for 8(a) eligibility determinations and related issues, and for providing counseling and assistance to the 8(a) Contractor under the 8(a) Program. The cognizant SBA district office is:

[To be completed by the Contracting Officer at the time of award]

(b) The contracting office is responsible for administering the contract and for taking any action on behalf of the Government under the terms and conditions of the contract; provided that the contracting office shall give advance notice to the SBA before it issues a final notice terminating performance, either in whole or in part, under the contract. The contracting office also shall coordinate with the SBA prior to processing any novation agreement. The contracting office may assigncontract administration functions to a contract administration office.

(c) The 8(a) Contractor agrees that--

(1) It will notify the Contracting Officer, simultaneous with its notification to the SBA (as required by SBA's 8(a) regulations at 13 CFR 124.308), when the owner or owners upon whom 8(a) eligibility is based plan to relinquish ownership or control of the concern. Consistent with Section 407 of Pub. L. 100-656, transfer of ownership or control shall result in termination of the contract for convenience, unless the SBA waives the requirement for termination prior to the actual relinquishing of ownership and control; and

(2) It will not subcontract the performance of any of the requirements of this contract without the prior written approval of the SBA and the Contracting Officer.

(End of clause)

36. DFARS 252.219-7010 ALTENATE A (JUN 1998)
[When Competitive 8(a) Contracting Procedures are used]

As prescribed in 219.811-3(2), substitute the following paragraph (c) for paragraph (c) of the clause at FAR 52.219-18:

(c) Any award resulting from this solicitation will be made directly by the Contracting Officer to the successful 8(a) offeror selected through the evaluation criteria set forth in this solicitation.

37. *FAR 52.222-1 NOTICE TO THE GOVERNMENT OF LABOR DISPUTES (FEB 1997)

If the Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay the timely performance of this contract, the Contractor shall immediately give notice, including all relevant information, to the Contracting Officer. (End of clause)

38. *FAR 52.222-3 CONVICT LABOR (JUNE 2003)

(a) Except as provided in paragraph (b) of this clause, the Contractor shall not employ in the performance of this contract any person undergoing a sentence of imprisonment imposed by any court of a State, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, or the U.S. Virgin Islands.

(b) The Contractor is not prohibited from employing persons—

(1) On parole or probation to work at paid employment during the term of their sentence;

(2) Who have been pardoned or who have served their terms; or

(3) Confined for violation of the laws of any of the States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, or the U.S. Virgin Islands who are authorized to work at paid employment in the community under the laws of such jurisdiction, if—

(i) The worker is paid or is in an approved work training program on a voluntary basis;

(ii) Representatives of local union central bodies or similar labor union organizations have been consulted;

(iii) Such paid employment will not result in the displacement of employed workers, or be applied in skills, crafts, or trades in which there is a surplus of available gainful labor in the locality, or impair existing contracts for services;

(iv) The rates of pay and other conditions of employment will not be less than those paid or provided for work of a similar nature in the locality in which the work is being performed; and

(v) The Attorney General of the United States has certified that the work-release laws or regulations of the jurisdiction involved are in conformity with the requirements of Executive Order 11755, as amended by Executive Orders 12608 and 12943.

(End of clause)

39. *FAR 52.222-4 CONTRACT WORK HOURS AND SAFETY STANDARDS ACT—OVERTIME COMPENSATION (SEPT 2000)

(a) *Overtime requirements*. No Contractor or subcontractor employing laborers or mechanics (see Federal Acquisition Regulation 22.300) shall require or permit them to work over 40 hours in any workweek unless they are paid at least 1 and 1/2 times the basic rate of pay for each hour worked over 40 hours.

(b) *Violation; liability for unpaid wages; liquidated damages*. The responsible Contractor and subcontractor are liable for unpaid wages if they violate the terms in paragraph (a) of this clause. In addition, the Contractor and subcontractor are liable for liquidated damages payable to the Government. The Contracting Officer will assess liquidated damages at the rate of $10 per affected employee for each calendar day on which the employer required or permitted the employee to work in excess of the standard workweek of 40 hours without paying overtime wages required by the Contract Work Hours and Safety Standards Act.

(c) *Withholding for unpaid wages and liquidated damages*. The Contracting Officer will withhold from

payments due under the contract sufficient funds required to satisfy any Contractor or subcontractor liabilities for unpaid wages and liquidated damages. If amounts withheld under the contract are insufficient to satisfy Contractor or subcontractor liabilities, the Contracting Officer will withhold payments from other Federal or Federally assisted contracts held by the same Contractor that are subject to the Contract Work Hours and Safety Standards Act.

(d) *Payrolls and basic records*. (1) The Contractor and its subcontractors shall maintain payrolls and basic payroll records for all laborers and mechanics working on the contract during the contract and shall make them available to the Government until 3 years after contract completion. The records shall contain the name and address of each employee, social security number, labor classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. The records need not duplicate those required for construction work by Department of Labor regulations at 29 CFR 5.5(a)(3) implementing the Davis-Bacon Act .

(2) The Contractor and its subcontractors shall allow authorized representatives of the Contracting Officer or the Department of Labor to inspect, copy, or transcribe records maintained under paragraph (d)(1) of this clause. The Contractor or subcontractor also shall allow authorized representatives of the Contracting Officer or Department of Labor to interview employees in the workplace during working hours.

(e) *Subcontracts*. The Contractor shall insert the provisions set forth in paragraphs (a) through (d) of this clause in subcontracts exceeding $100,000 and require subcontractors to include these provisions in any lower-tier subcontracts. The Contractor shall be responsible for compliance by any subcontractor or lower-tier subcontractor with the provisions set forth in paragraphs (a) through (d) of this clause.
(End of clause)

40. *FAR 52.222-6 DAVIS-BACON ACT (FEB 1995)

(a) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (d) of this clause; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such period. Such laborers and mechanics shall be paid not less than the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in the clause entitled Apprentices and Trainees. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (b) of this clause) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(b) (1) The Contracting Officer shall require that any class of laborers or mechanics, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The Contracting Officer shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met:

(i) Tthe work to be performed by the classification requested is not performed by a classification in the wage determination.

(ii) The classification is utilized in the area by the construction industry.

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the Contractor and laborers and mechanics to be employed in the classification (if known), or their representatives, and the Contracting Officer agree on the classification and wage rate (including the amount designated for fringe benefits, where appropriate), a report of the action taken shall be sent by the Contracting Officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator or an authorized representative will approve,

modify, or disapprove every additional classification action within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(3) In the event the Contractor, the laborers or mechanics to be employed in the classification, or their representatives, and the Contracting Officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contracting Officer shall refer the questions, including the views of all interested parties and the recommendation of the Contracting Officer, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits, where appropriate) determined pursuant to subparagraphs (b)(2) and (b)(3) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(c) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(d) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

41. *FAR 52.222-7 WITHHOLDING OF FUNDS (FEB 1988)

The Contracting Officer shall, upon his or her own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same Prime Contractor, or any other Federally assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same Prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

42. *FAR 52.222-8 PAYROLLS AND BASIC RECORDS (FEB 1988)

(a) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of 3 years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found, under paragraph (d) of the clause entitled Davis-Bacon Act, that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(b) (1) The Contractor shall submit weekly for each week in which any contract work is performed a coy of all payrolls to the Contracting Officer. The payrolls submitted shall set out accurately and

completely all of the information required to be maintained under paragraph (a) of this clause. This information may be submitted in any form desired. Optional Form WH-347 (Federal Stock Number 029-005-00014-1) is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. The Prime Contractor is responsible for the submission of copies of payrolls by all subcontractors.

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify--

(i) That the payroll for the payroll period contains the information required to be maintained under paragraph (a) of this clause and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR Part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph (b)(2) of this clause.

(4) The falsification of any of the certifications in this clause may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.

(c) The Contractor or subcontractor shall make the records required under paragraph (a) of this clause available for inspection, copying, or transcription by the Contracting Officer or authorized representatives of the Contracting Officer or the Department of Labor. The Contractor of subcontractor shall permit the Contracting Officer or representatives of the Contracting Officer or the Department of Labor to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit required records or to make them available, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

43. *FAR 52.222-9 APPRENTICES AND TRAINEES (FEB 1988)

(a) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in this paragraph, shall be paid not less than the applicable wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different

practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will not longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(b) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate in the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate in the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate in the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(c) Equal employment opportunity. The utilization of apprentices, trainees, and journeymen under this clause shall be inconformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

44. *FAR 52.222-10 COMPLIANCE WITH COPELAND ACT REQUIREMENTS (FEB 1988)

The Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this contract.

45. *FAR 52.222-11 SUBCONTRACTS (LABOR STANDARDS) (FEB 1988)

(a) The Contractor or subcontractor shall insert in any subcontracts the clauses entitled Davis-Bacon Act, Contract Work Hours and Safety Standards Act--Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Withholding of Funds, Subcontracts (Labor Standards), Contract Termination--Debarment, Disputes Concerning Labor Standards, Compliance with Davis-Bacon and Related Act Regulations ,and Certification of Eligibility, and such other clauses as the Contracting Officer may, by appropriate instructions, require, and also a clause requiring subcontractors to include these clauses in any lower tier subcontracts. The Prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with all the contract clauses cited in this paragraph.

(b) (1) Within 14 days after award of the contract, the Contractor shall deliver to the Contracting Officer a completed Statement and Acknowledgment Form (SF 1413) for each subcontract, including the subcontractor's signed and dated acknowledgment that the clauses set forth in paragraph (a) of this clause have been included in the subcontract.

(2) Within 14 days after the award of any subsequently awarded subcontract the Contractor shall deliver to the Contracting Officer an updated completed SF 1413 for such additional subcontract.

46. *FAR 52.222-12 CONTRACT TERMINATION--DEBARMENT (FEB 1988)

A breach of the contract clauses entitled Davis-Bacon Act, Contract Work Hours and Safety Standards Act--Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Subcontracts (Labor Standards), Compliance with Davis-Bacon and Related Act Regulations, or Certification of Eligibility may be grounds for termination of the contract, and for debarment as a Contractor and subcontractor as provided in 29 CFR 5.12.

47. *FAR 52.222-13 COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REGULATIONS (FEB 1988)

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are hereby incorporated by reference in this contract.

48. *FAR 52.222-14 DISPUTES CONCERNING LABOR STANDARDS (FEB 1988)

The United States Department of Labor has set forth in 29 CFR Parts 5, 6, and 7 procedures for resolving disputes concerning labor standards requirements. Such disputes shall be resolved in accordance with those procedures and not the Disputes clause of this contract. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency the U.S. Department of Labor, or the employees of their representatives.

49. *FAR 52.222-15 CERTIFICATION OF ELIGIBILITY (FEB 1988)

(a) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(b) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(c) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

50. *FAR 52.222-26 EQUAL OPPORTUNITY (APR 2002)

(a) *Definition*. "United States," as used in this clause, means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.

(b) If, during any 12-month period (including the 12 months preceding the award of this contract), the Contractor has been or is awarded nonexempt Federal contracts and/or subcontracts that have an aggregate value in excess of $10,000, the Contractor shall comply with paragraphs (b)(1) through (b)(11) of this clause, except for work performed outside the United States by employees who were not recruited within the United States. Upon request, the Contractor shall provide information necessary to determine the applicability of this clause.

(1) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. However, it shall not be a violation of this clause for the Contractor to extend a publicly announced preference in employment to Indians living on or near an Indian reservation, in connection with employment opportunities on or near an Indian reservation, as permitted by 41 CFR 60-1.5.

(2) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to—

(i) Employment;
(ii) Upgrading;
(iii) Demotion;
(iv) Transfer;
(v) Recruitment or recruitment advertising;
(vi) Layoff or termination;
(vii) Rates of pay or other forms of compensation; and
(viii) Selection for training, including apprenticeship.

(3) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.

(4) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(5) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

(6) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

(7) The Contractor shall furnish to the contracting agency all information required by Executive Order 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. The Contractor shall also file Standard Form 100 (EEO-1), or any successor form, as prescribed in 41 CFR part 60-1. Unless the Contractor has filed within the 12 months preceding the date of contract award, the Contractor shall, within 30 days after contract award, apply to either the regional Office of Federal Contract Compliance Programs (OFCCP) or the local office of the Equal Employment Opportunity Commission for the necessary forms.

(8) The Contractor shall permit access to its premises, during normal business hours, by the contracting agency or the OFCCP for the purpose of conducting on-site compliance evaluations and complaint investigations. The Contractor shall permit the Government to inspect and copy any books, accounts, records (including computerized records), and other material that may be relevant to the matter under investigation and pertinent to compliance with Executive Order 11246, as amended, and rules and regulations that implement the Executive Order.

(9) If the OFCCP determines that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts, under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended; in the rules, regulations, and orders of the Secretary of Labor; or as otherwise provided by law.

(10) The Contractor shall include the terms and conditions of paragraphs (b)(1) through (11) of this clause in every subcontract or purchase order that is not exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor.

(11) The Contractor shall take such action with respect to any subcontract or purchase order as the Contracting Officer may direct as a means of enforcing these terms and conditions, including sanctions for noncompliance, provided, that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of any direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

(c) Notwithstanding any other clause in this contract, disputes relative to this clause will be governed by the procedures in 41 CFR 60-1.1.

(End of clause)

51. *FAR 52.222-27 AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION (FEB 1999)

(a) Definitions.

"Covered area," as used in this clause, means the geographical area described in the solicitation for this contract.

"Deputy Assistant Secretary," as used in this clause, means the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, or a designee

"Employer's identification number," as used in this clause, means the Federal Social Security number used on the employer's quarterly Federal tax return, U.S. Treasury Department Form 941.

"Minority," as used in this clause, means--

(1) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

(2) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands);

(3) Black (all persons having origins in any of the black African racial groups not of Hispanic origin); and

(4) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race).

(b) If the Contractor, or a subcontractor at any tier, subcontracts a portion of the work involving any construction trade each such subcontract in excess of $10,000 shall include this clause and the Notice containing the goals for minority and female participation stated in the solicitation for this contract.

(c) If the Contractor is participating in a Hometown Plan (41 CFR 60-4) approved by the U.S. Department of Labor in a covered area, either individually or through an association, its affirmative actin obligations on all work in the plan area (including goals) shall comply with the plan for those trades that have unions participating in the plan. Contractors must be able to demonstrate participation in, and compliance with, the provisions of the plan. Each Contractor or subcontractor participating in an approved plan is also required to comply with its obligations under the Equal Opportunity clause, and to make a good faith effort to achieve each goal under the plan in each trade in which it has employees. The overall good-faith performance by other Contractors or subcontractors toward a goal in an approved plan does not excuse any Contractor's or subcontractor's failure to make good-faith efforts to achieve the plan's goals.

(d) The Contractor shall implement the affirmative action procedures in subparagraphs (g)(1) through (16) of this clause. The goals stated in the solicitation for this contract are expressed as percentages of the total hours of employment and training of minority and female utilization that the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for the geographical area where that work is actually performed. The Contractor is expected to make substantially uniform progress toward its goals in each craft.

(e) Neither the terms and conditions of any collective bargaining agreement, nor the failure by a union with which the Contractor has a collective bargaining agreement, to refer minorities or women shall excuse the Contractor's obligations under this clause, Executive Order 11246, as amended, or the regulations thereunder.

(f) In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

(g) The Contractor shall take affirmative action to ensure equal employment opportunity. The evaluation of the Contractor's compliance with this clause shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and implement affirmative action steps at least as extensive as the following:

(1) Ensure a working environment free of harassment, intimidation, and coercion at all sites and in all facilities where the Contractor's employees are assigned to work. The Contractor, if possible, will assign two or more women to each construction project. The Contractor shall ensure that foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at these sites or facilities.

(2) Establish and maintain a current list of sources for minority and female recruitment. Provide written notification to minority and female recruitment sources and community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

(3) Establish and maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant, referrals of minorities or females from unions, recruitment sources, or community organizations, and the action taken with respect to each individual. If an individual was sent to the union hiring hall for referral and not referred back to the Contractor by the union or, if referred back, not employed by the Contractor, this shall be documented in the file, along with whatever additional actions the Contractor may have taken.

(4) Immediately notify the Deputy Assistant Secretary when the union or unions with which the Contractor has a collective bargaining agreement has not referred back to the Contractor a minority or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

(5) Develop on-the-job training opportunities and/or participate in training programs for the area that expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under subparagraph (g)(2) of this clause.

(6) Disseminate the Contractor's equal employment policy by--

(i) Providing notice of the policy to unions and to training, recruitment, and outreach programs, and requesting their cooperation in assisting the Contractor in meeting its contract obligations;

(ii) Including the policy in any policy manual and in collective bargaining agreements;

(iii) Publicizing the policy in the company newspaper, annual report, etc.;

(iv) Reviewing the policy with all management personnel and with all minority and female employees at least once a year; and

(v) Posting the policy on bulletin boards accessible to employees at each location where construction work is performed.

(7) Review, at least annually, the Contractor's equal employment policy and affirmative action obligations with all employees having responsibility for hiring, assignment, layoff, termination, or other employment decisions. Conduct review of this policy with all on-site supervisory personnel before initiating construction work at a job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

(8) Disseminate the Contractor's equal employment policy externally by including it in any advertising in the news media, specifically including minority and female news media. Provide written notification to, and discuss this policy with, other Contractors and subcontractors with which the Contractor does or anticipates doing business.

(9) Direct recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students, and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than 1 month before the date for acceptance of applications for apprenticeship or training by any recruitment source, send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

(10) Encourage present minority and female employees to recruit minority persons and women. Where reasonable, provide after-school, summer, and vacation employment to minority and female youth both on the site and in other areas of the Contractor's workforce.

(11) Validate all tests and other selection requirements where required under 41 CFR 60-3.

(12) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities. Encourage these employees to seek or to prepare for, through appropriate training, etc., opportunities for promotion.

(13) Ensure that seniority practices job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment-related activities to ensure that the Contractor's obligations under this contract are being carried out.

(14) Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

(15) Maintain a record of solicitations for subcontracts for minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

(16) Conduct a review, at lest annually, of all supervisors' adherence to and performance under the Contractor's equal employment policy and affirmative action obligations.

(h) The Contractor is encouraged to participate in voluntary associations that may assist in fulfilling one or more of the affirmative action obligations contained in subparagraphs (g)(1) through (16) of this clause. The efforts of a contractor association, joint contractor-union, contractor-community, or similar group of which the contractor is a member and participant may be asserted as fulfilling one or more of its obligations under subparagraphs (g)(1) through (16) of this clause, provided the Contractor--

(1) Actively participates in the group;

(2) Makes every effort to ensure that the group has a positive impact on the employment of minorities and women in the industry;

(3) Ensures that concrete benefits of the program are reflected in the Contractor's minority and female workforce participation;

(4) Makes a good-faith effort to meet its individual goals and timetables; and

(5) Can provide access to documentation that demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply is the Contractor's, and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

(i) A single goal for minorities and a separate single goal for women shall be established. The Contractor is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and nonminority. Consequently, the Contractor may be in violation of Executive Order 11246, as amended, if a particular group is employed in a substantially disparate manner.

(j) The Contractor shall not use goals or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

(k) The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts under Executive Order 11246, as amended.

(l) The Contractor shall carry out such sanctions and penalties for violation of this clause and of the Equal Opportunity clause, including suspension, termination, and cancellation of existing subcontracts, as may be imposed or ordered under Executive Order 11246, as amended, and its implementing regulations, by the OFCCP. Any failure to carry out these sanctions and penalties as ordered shall be a violation of this clause and Executive Order 11246, as amended.

(m) The Contractor in fulfilling its obligations under this clause shall implement affirmative action procedures at least as extensive as those prescribed in paragraph (g) of this clause, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of Executive Order 11246, as amended, the implementing regulations, or this clause, the Deputy Assistant Secretary shall take action as prescribed in 41 CFR 60-4.8.

(n) The Contractor shall designate a responsible official to--

(1) Monitor all employment-related activity to ensure that the Contractor's equal employment policy is being carried out;

(2) Submit reports as may be required by the Government; and

(3) Keep records that shall at least include for each employee the name, address, telephone number, construction trade, union affiliation (if any), employee identification number, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, separate records are not required to be maintained.

(o) Nothing contained herein shall be construed as a limitation upon the application of other laws that establish different standards of compliance or upon the requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

52. *FAR 52.222-35 EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS (DEC 2001)

(a) *Definitions*. As used in this clause—

"All employment openings" means all positions except executive and top management, those positions that will be filled from within the Contractor's organization, and positions lasting 3 days or less. This term includes full-time employment, temporary employment of more than 3 days duration, and part-time employment.

"Executive and top management" means any employee—

(1) Whose primary duty consists of the management of the enterprise in which the individual is employed or of a customarily recognized department or subdivision thereof;

(2) Who customarily and regularly directs the work of two or more other employees;

(3) Who has the authority to hire or fire other employees or whose suggestions and recommendations as to the hiring or firing and as to the advancement and promotion or any other change of status of other employees will be given particular weight;

(4) Who customarily and regularly exercises discretionary powers; and

(5) Who does not devote more than 20 percent or, in the case of an employee of a retail or service establishment, who does not devote more than 40 percent of total hours of work in the work week to activities that are not directly and closely related to the performance of the work described in paragraphs (1) through (4) of this definition. This paragraph (5) does not apply in the case of an employee who is in sole charge of an establishment or a physically separated branch establishment, or who owns at least a 20 percent interest in the enterprise in which the individual is employed.

"Other eligible veteran" means any other veteran who served on active duty during a war or in a campaign or expedition for which a campaign badge has been authorized.

"Positions that will be filled from within the Contractor's organization" means employment openings for which the Contractor will give no consideration to persons outside the Contractor's organization (including any affiliates, subsidiaries, and parent companies) and includes any openings the Contractor proposes to fill from regularly established "recall" lists. The exception does not apply to a particular opening once an employer decides to consider applicants outside of its organization.

"Qualified special disabled veteran" means a special disabled veteran who satisfies the requisite skill, experience, education, and other job-related requirements of the employment position such veteran holds or desires, and who, with or without reasonable accommodation, can perform the essential functions of such position.

"Special disabled veteran" means—

(1) A veteran who is entitled to compensation (or who but for the receipt of military retired pay would be entitled to compensation) under laws administered by the Department of Veterans Affairs for a disability—

(i) Rated at 30 percent or more; or

(ii) Rated at 10 or 20 percent in the case of a veteran who has been determined under 38 U.S.C. 3106 to have a serious employment handicap (*i.e*., a significant impairment of the veteran's ability to prepare for, obtain, or retain employment consistent with the veteran's abilities, aptitudes, and interests); or

(2) A person who was discharged or released from active duty because of a service-connected disability.

"Veteran of the Vietnam era" means a person who—

(1) Served on active duty for a period of more than 180 days and was discharged or released from active duty with other than a dishonorable discharge, if any part of such active duty occurred—

(i) In the Republic of Vietnam between February 28, 1961, and May 7, 1975; or

(ii) Between August 5, 1964, and May 7, 1975, in all other cases; or

(2) Was discharged or released from active duty for a service-connected disability if any part of the active duty was performed—

(i) In the Republic of Vietnam between February 28, 1961, and May 7, 1975; or

(ii) Between August 5, 1964, and May 7, 1975, in all other cases.

(b) *General*. (1) The Contractor shall not discriminate against the individual because the individual is a special disabled veteran, a veteran of the Vietnam era, or other eligible veteran, regarding any position for which the

employee or applicant for employment is qualified. The Contractor shall take affirmative action to employ, advance in employment, and otherwise treat qualified special disabled veterans, veterans of the Vietnam era, and other eligible veterans without discrimination based upon their disability or veterans' status in all employment practices such as—

(i) Recruitment, advertising, and job application procedures;

(ii) Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff and rehiring;

(iii) Rate of pay or any other form of compensation and changes in compensation;

(iv) Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;

(v) Leaves of absence, sick leave, or any other leave;

(vi) Fringe benefits available by virtue of employment, whether or not administered by the Contractor;

(vii) Selection and financial support for training, including apprenticeship, and on-the-job training under 38 U.S.C. 3687, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;

(viii) Activities sponsored by the Contractor including social or recreational programs; and

(ix) Any other term, condition, or privilege of employment.

(2) The Contractor shall comply with the rules, regulations, and relevant orders of the Secretary of Labor issued under the Vietnam Era Veterans' Readjustment Assistance Act of 1972 (the Act), as amended (38 U.S.C. 4211 and 4212).

(c) *Listing openings*. (1) The Contractor shall immediately list all employment openings that exist at the time of the execution of this contract and those which occur during the performance of this contract, including those not generated by this contract, and including those occurring at an establishment of the Contractor other than the one where the contract is being performed, but excluding those of independently operated corporate affiliates, at an appropriate local public employment service office of the State wherein the opening occurs. Listing employment openings with the U.S. Department of Labor's America's Job Bank shall satisfy the requirement to list jobs with the local employment service office.

(2) The Contractor shall make the listing of employment openings with the local employment service office at least concurrently with using any other recruitment source or effort and shall involve the normal obligations of placing a bona fide job order, including accepting referrals of veterans and nonveterans. This listing of employment openings does not require hiring any particular job applicant or hiring from any particular group of job applicants and is not intended to relieve the Contractor from any requirements of Executive orders or regulations concerning nondiscrimination in employment.

(3) Whenever the Contractor becomes contractually bound to the listing terms of this clause, it shall advise the State public employment agency in each State where it has establishments of the name and location of each hiring location in the State. As long as the Contractor is contractually bound to these terms and has so advised the State agency, it need not advise the State agency of subsequent contracts. The Contractor may advise the State agency when it is no longer bound by this contract clause.

(d) *Applicability*. This clause does not apply to the listing of employment openings that occur and are filled outside the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, American Samoa, Guam, the Virgin Islands of the United States, and Wake Island.

(e) *Postings*. (1) The Contractor shall post employment notices in conspicuous places that are available to employees and applicants for employment.

(2) The employment notices shall—

(i) State the rights of applicants and employees as well as the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified employees and applicants who are special disabled veterans, veterans of the Vietnam era, and other eligible veterans; and

(ii) Be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance Programs, Department of Labor (Deputy Assistant Secretary of Labor), and provided by or through the Contracting Officer.

(3) The Contractor shall ensure that applicants or employees who are special disabled veterans are

informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled veteran, or may lower the posted notice so that it can be read by a person in a wheelchair).

(4) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement, or other contract understanding, that the Contractor is bound by the terms of the Act and is committed to take affirmative action to employ, and advance in employment, qualified special disabled veterans, veterans of the Vietnam era, and other eligible veterans.

(f) *Noncompliance*. If the Contractor does not comply with the requirements of this clause, the Government may take appropriate actions under the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.

(g) *Subcontracts*. The Contractor shall insert the terms of this clause in all subcontracts or purchase orders of $25,000 or more unless exempted by rules, regulations, or orders of the Secretary of Labor. The Contractor shall act as specified by the Deputy Assistant Secretary of Labor to enforce the terms, including action for noncompliance.

(End of clause)

53. *FAR 52.222-36 AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES (JUN 1998)

(a) General.

(1) Regarding any position for which the employee or applicant for employment is qualified, the Contractor shall not discriminate against any employee or applicant because of physical or mental disability. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified individuals with disabilities without discrimination based upon their physical or mental disability in all employment practices such as--

(i) Recruitment, advertising, and job application procedures;

(ii) Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff, and rehiring;

(iii) Rates of pay or other forms of compensation and changes in compensation;

(iv) Job assignments, job classifications, orgizational structures, position descriptions, lines of progression, and senority lists;

(v) Leaves of absence, sick leave, or any other leave;

(vi) Fringe benefits available by virtue of employment, whether or not administered by the Contractor;

(vii) Selection and financial support for training, including apprenticeships, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;

(viii) Activities sponsored by the Contractor, including social or recreational programs; and

(ix) Any other term, condition, or priviledge of employment.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Rehabilitation Act of 1973 (29 U.S.C. 793) (the Act), as amended.

(b) Postings.

(1) The Contractor agrees to post employment notices stating--

(i) The Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified individuals with disabilities; and

(ii) The rights of applicants and employees.

(2) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. The Contractor shall ensure that applicants and employees with disabilities are informed of the contents of the notice (e.g., the Contractor may have the notice read to visually disabled individual, or may lower the posted notice so that it might be read by a person in a wheelchair). The notices shall be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance of the U.S. Department of Labor (Deputy Assistant Secretary) and shall be provided by or through the Contracting Officer.

(3) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of

Section 503 of the Act and is committed to take affirmative action to employ, and advance in employment, qualified individuals with physical or mental disabilities.

(c) Noncompliance. If the Contractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations, and relevant orders of the Secretary issued pursuant to the Act.

(b) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order in excess of $10,000 unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Deputy Assistant Secretary to enforce the terms, including action for noncompliance.

54. *FAR 52.222-37 EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS (DEC 2001)

(a) Unless the Contractor is a State or local government agency, the Contractor shall report at least annually, as required by the Secretary of Labor, on—

(1) The number of special disabled veterans, the number of veterans of the Vietnam era, and other eligible veterans in the workforce of the Contractor by job category and hiring location; and

(2) The total number of new employees hired during the period covered by the report, and of the total, the number of special disabled veterans, the number of veterans of the Vietnam era, and the number of other eligible veterans; and

(3) The maximum number and the minimum number of employees of the Contractor during the period covered by the report.

(b) The Contractor shall report the above items by completing the Form VETS-100, entitled "Federal Contractor Veterans' Employment Report (VETS-100 Report)".

(c) The Contractor shall submit VETS-100 Reports no later than September 30 of each year beginning September 30, 1988.

(d) The employment activity report required by paragraph (a)(2) of this clause shall reflect total hires during the most recent 12-month period as of the ending date selected for the employment profile report required by paragraph (a)(1) of this clause. Contractors may select an ending date—

(1) As of the end of any pay period between July 1 andAugust 31 of the year the report is due; or

(2) As of December 31, if the Contractor has prior writtenapproval from the Equal Employment Opportunity Commission to do so for purposes of submitting the Employer Information Report EEO-1 (Standard Form 100).

(e) The Contractor shall base the count of veterans reported according to paragraph (a) of this clause on voluntary disclosure. Each Contractor subject to the reporting requirements at 38 U.S.C. 4212 shall invite all special disabled veterans, veterans of the Vietnam era, and other eligible veterans who wish to benefit under the affirmative action program at 38 U.S.C. 4212 to identify themselves to the Contractor. The invitation shall state that—

(1) The information is voluntarily provided;

(2) The information will be kept confidential;

(3) Disclosure or refusal to provide the information will not subject the applicant or employee to any adverse treatment; and

(4) The information will be used only in accordance with the regulations promulgated under 38 U.S.C. 4212.

(f) The Contractor shall insert the terms of this clause in all subcontracts or purchase orders of $25,000 or more unless exempted by rules, regulations, or orders of the Secretary of Labor.

(End of clause)

55. *FAR 52.222-38 COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (DEC 2001)

By submission of its offer, the offeror represents that, if it is subject to the reporting requirements of 38 U.S.C. 4212(d) (*i.e.*, if it has any contract containing Federal Acquisition Regulation clause 52.222-37, Employment

Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans), it has submitted the most recent VETS-100 Report required by that clause.
(End of provision)

56. *FAR 52.223-3 HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA (JAN 1997)

(a) "Hazardous material," as used in this clause, includes any material defined as hazardous under the latest version of Federal Standard No. 313 (including revisions adopted during the term of the contract).

(b) The offeror must list any hazardous material, as defined in paragraph (a) of this clause, to be delivered under this contract. The hazardous material shall be properly identified and include any applicable identification number, such as National Stock Number or Special Item Number. This information shall also be included on the Material Safety Data Sheet submitted under this contract.

Material (If none, insert "None")	Identification No.
_____	_____
_____	_____
_____	_____

(c) This list must be updated during performance of the contract whenever the Contractor determines that any other material to be delivered under this contract is hazardous.

(d) The apparently successful offeror agrees to submit, for each item as required prior to award, a Material Safety Data Sheet, meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous material identified in paragraph (b) of this clause. Data shall be submitted in accordance with Federal Standard No. 313, whether or not the apparently successful offeror is the actual manufacturer of these items. Failure to submit the Material Safety Data Sheet prior to award may result in the apparently successful offeror being considered nonresponsible and ineligible for award.

(e) If, after award, there is a change in the composition of the item(s) or a revision to Federal Standard No. 313, which renders incomplete or inaccurate the data submitted under paragraph (d) of this clause, the Contractor shall promptly notify the Contracting Officer and resubmit the data.

(f) Neither the requirements of this clause nor any act or failure to act by the Government shall relieve the Contractor of any responsibility or liability for the safety of Government, Contractor, or subcontractor personnel or property.

(g) Nothing contained in this clause shall relieve the Contractor from complying with applicable Federal, State, and local laws, codes, ordinances, and regulations (including the obtaining of licenses and permits) in connection with hazardous material.

(h) The Government's rights in data furnished under this contract with respect to hazardous material are as follows:

(1) To use, duplicate and disclose any data to which this clause is applicable. The purposes of this right are to--

(i) Apprise personnel of the hazards to which they may be exposed in using, handling, packaging, transporting, or disposing of hazardous materials;

(ii) Obtain medical treatment for those affected by the material; and

(iii) Have others use, duplicate, and disclose the data for the Government for these purposes.

(2) To use, duplicate, and disclose data furnished under this clause, in accordance with subparagraph (h)(1) of this clause, in precedence over any other clause of this contract providing for rights in data.

(3) The Government is not precluded from using similar or identical data acquired from other sources. (End of clause)

57. *FAR 52.223-5 POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION (AUG 2003) [For Work on Federal Facilities]

(a) *Definitions*. As used in this clause—

"Priority chemical" means a chemical identified by the Interagency Environmental Leadership Workgroup or, alternatively, by an agency pursuant to Section 503 of Executive Order 13148 of April 21, 2000, Greening the Government through Leadership in Environmental Management.

"Toxic chemical" means a chemical or chemical category listed in 40 CFR 372.65.

(b) Executive Order 13148 requires Federal facilities to comply with the provisions of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11001-11050) and the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13101-13109).

(c) The Contractor shall provide all information needed by the Federal facility to comply with the following:

(1) The emergency planning reporting requirements of Section 302 of EPCRA.
(2) The emergency notice requirements of Section 304 of EPCRA.
(3) The list of Material Safety Data Sheets, required by Section 311 of EPCRA.
(4) The emergency and hazardous chemical inventory forms of Section 312 of EPCRA.
(5) The toxic chemical release inventory of Section 313 of EPCRA, which includes the reduction and recycling information required by Section 6607 of PPA.
(6) The toxic chemical, priority chemical, and hazardous substance release and use reduction goals of Sections 502 and 503 of Executive Order 13148.

(End of clause)

58. *FAR 52.223-6 DRUG-FREE WORKPLACE (MAY 2001)

(a) Definitions. As used in this clause--

"Controlled substance" means a controlled substance in schedules I through V of section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined in regulation at 21 CFR 1308.11 - 1308.15.

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes.

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, possession or use of any controlled substance.

"Drug-free workplace" means the site(s) for the performance of work done by the Contractor in connection with a specific contract where employees of the Contractor are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.

"Employee" means an employee of a Contractor directly engaged in the performance of work under a Government contract. "Directly engaged" is defined to include all direct cost employees and any other Contractor employee who has other than a minimal impact or involvement in contract performance.

"Individual" means an offeror/contractor that has no more than one employee including the offeror/contractor.

(b) The Contractor, if other than an individual, shall--within 30 days after award (unless a longer period is agreed to in writing for contracts of 30 days or more performance duration), or as soon as possible for contracts of less than 30 days performance duration--

(1) Publish a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition;

(2) Establish an ongoing drug-free awareness program to inform such employees about--

(i) The dangers of drug abuse in the workplace;

(ii) The Contractor's policy of maintaining a drug-free workplace;

(iii) Any available drug counseling, rehabilitation, and employee assistance programs; and

(iv) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace.

(3) Provide all employees engaged in performance of the contract with a copy of the statement required by subparagraph (b)(1) of this clause;

(4) Notify such employees in writing in the statement required by subparagraph (b)(1) of this clause that, as a condition of continued employment on this contract, the employee will--

(i) Abide by the terms of the statement; and

(ii) Notify the employer in writing of the employee's conviction under a criminal drug statute for a violation occurring in the workplace no later than 5 days after such conviction.

(5) Notify the Contracting Officer in writing within 10 days after receiving notice under subdivision (b)(4)(ii) of this clause, from an employee or otherwise receiving actual notice of such conviction. The notice shall include the position title of the employee;

(6) Within 30 days after receiving notice under subdivision (b)(4)(ii) of this clause of a conviction, take one of the following actions with respect to any employee who is convicted of a drug abuse violation occurring in the workplace:

(i) Taking appropriate personnel action against such employee, up to and including termination; or

(ii) Require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency; and

(7) Make a good faith effort to maintain a drug-free workplace through implementation of subparagraphs (b)(1) through (b)(6) of this clause.

(c) The Contractor, if an individual, agrees by award of the contract or acceptance of a purchase order, not to engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance while performing this contract.

(d) In addition to other remedies available to the Government, the Contractor's failure to comply with the requirements of paragraph (b) or (c) of this clause may, pursuant to FAR 23.560, render the Contractor subject to suspension of contract payments, termination of the contract for default, and suspension or debarment.

59. FAR 52.223-9 ESTIMATE OF PERCENTAGE OF RECOVERED MATERIAL CONTENT FOR EPA-DESIGNATED PRODUCTS (AUG 2000) [For Contracts exceeding $100,000. EPA Designated product (available at http://www.epa.gov/cpg/)]

(a) Definitions. As used in this clause—

"Postconsumer material" means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of "recovered material."

"Recovered material" means waste materials and by-products recovered or diverted from solid waste, but the term does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process.

(b) The Contractor, on completion of this contract, shall—

(1) Estimate the percentage of the total recovered material used in contract performance, including, if applicable, the percentage of postconsumer material content; and

(2) Submit this estimate to the Contracting Officer.

(End of clause)

60. *FAR 52.223-14 TOXIC CHEMICAL RELEASE REPORTING (AUG 2003)
[For Contracts Over $100,000]

(a) Unless otherwise exempt, the Contractor, as owner or operator of a facility used in the performance of this contract, shall file by July 1 for the prior calendar year an annual Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023(a) and (g)), and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106). The Contractor shall file, for each facility subject to the Form R filing and reporting requirements, the annual Form R throughout the life of the contract.

(b) A Contractor-owned or -operated facility used in the performance of this contract is exempt from the requirement to file an annual Form R if—

(1) The facility does not manufacture, process, or otherwise use any toxic chemicals listed in 40 CFR 372.65;

(2) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);

(3) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

(4) The facility does not fall within the following Standard Industrial Classification (SIC) codes or their corresponding North American Industry Classification System sectors:

(i) Major group code 10 (except 1011, 1081, and 1094.

(ii) Major group code 12 (except 1241).

(iii) Major group codes 20 through 39.

(iv) Industry code 4911, 4931, or 4939 (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce).

(v) Industry code 4953 (limited to facilities regulated under the Resource Conservation and Recovery Act, Subtitle C (42 U.S.C. 6921, *et seq*.)), or 5169, or 5171, or 7389 (limited to facilities primarily engaged in solvent recovery services on a contract or fee basis); or

(5) The facility is not located in the United States or its outlying areas.

(c) If the Contractor has certified to an exemption in accordance with one or more of the criteria in paragraph (b) of this clause, and after award of the contract circumstances change so that any of its owned or operated facilities used in the performance of this contract is no longer exempt—

(1) The Contractor shall notify the Contracting Officer; and

(2) The Contractor, as owner or operator of a facility used in the performance of this contract that is no longer exempt, shall—

(i) Submit a Toxic Chemical Release Inventory Form (Form R) on or before July 1 for the prior calendar year during which the facility becomes eligible; and

(ii) Continue to file the annual Form R for the life of the contract for such facility.

(d) The Contracting Officer may terminate this contract or take other action as appropriate, if the Contractor fails to comply accurately and fully with the EPCRA and PPA toxic chemical release filing and reporting requirements.

(e) Except for acquisitions of commercial items as defined in FAR Part 2, the Contractor shall—

(1) For competitive subcontracts expected to exceed $100,000 (including all options), include a solicitation provision substantially the same as the provision at FAR 52.223-13, Certification of Toxic Chemical Release Reporting; and

(2) Include in any resultant subcontract exceeding $100,000 (including all options), the substance of this clause, except this paragraph (e).

(End of clause)

61. DFARS 252.223-7006 PROHIBITION ON STORAGE AND DISPOSAL OF TOXIC AND

HAZARDOUS MATERIALS (APR 1993)

(a) Definitions. As used in this clause--

(1) "Storage" means a non-transitory, semi-permanent or permanent holding, placement, or leaving of material. It does not include a temporary accumulation of a limited quantity of a material used in or a waste generated or resulting from authorized activities, such as servicing, maintenance, or repair of Department of Defense (DoD) items, equipment, or facilities.

(2) "Toxic or hazardous materials" means:

(i) Materials referred to in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (42 U.S.C. 9601(14)) and materials designated under section 102 of CERCLA (42 U.S.C. 9602) (40 CFR Part 302);

(ii) Materials that are of an explosive, flammable, or pyrotechnic nature; or

(iii) Materials otherwise identified by the Secretary of Defense as specified in DoD regulations.

(b) In accordance with 10 U.S.C. 2692, the Contractor is prohibited from storing or disposing of non-DoD-owned toxic or hazardous materials on a DoD installation, except to the extent authorized by a statutory exception to 10 U.S.C. 2692 or as authorized by the Secretary of Defense or his designee.

62. *FAR 52.225-9 BUY AMERICAN ACT—CONSTRUCTION MATERIALS (JUNE 2003) (<u>For Contracts less than $6.481 million</u>)

(a) *Definitions*. As used in this clause—

"Component" means an article, material, or supply incorporated directly into a construction material.

"Construction material" means an article, material, or supply brought to the construction site by the Contractor or a subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

"Cost of components" means—

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the construction material (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the end product.

"Domestic construction material" means—

(1) An unmanufactured construction material mined or produced in the United States; or

(2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic.

"Foreign construction material" means a construction material other than a domestic construction material.

"United States" means the 50 States and the District of Columbia, and outlying areas.

(b) *Domestic preference*. (1) This clause implements the Buy American Act (41 U.S.C. 10a - 10d) by providing a preference for domestic construction material. The Contractor shall use only domestic construction material in performing this contract, except as provided in paragraphs (b)(2) and (b)(3) of this clause.

(2) This requirement does not apply to the construction material or components listed by the

Government as follows:

_____

[*Contracting Officer to list applicable excepted materials or indicate "none"*]

(3) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(2) of this clause if the Government determines that—

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the requirements of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent;

(ii) The application of the restriction of the Buy American Act to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) *Request for determination of inapplicability of the BuyAmerican Act*. (1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(3) of this clause shall include adequate information for Government evaluation of the request, including—

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(3)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American Act applies, use of foreign construction material is noncompliant with the Buy American Act.

(d) *Data*. To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

FOREIGN AND DOMESTIC CONSTRUCTION MATERIALS PRICE COMPARISON			
Construction Material Description	Unit of Measure	Quantity	Price (Dollars)*
Item 1:			
Foreign construction material	_____	_____	_____
Domestic construction material	_____	_____	_____
Item 2:			
Foreign construction material	_____	_____	_____
Domestic construction material	_____	_____	_____

[List *name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.]*
[Include other applicable supporting information.]
[Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).]*

63. *FAR 52.225-10 NOTICE OF BUY AMERICAN ACT REQUIREMENT—CONSTRUCTION MATERIALS (MAY 2002) (Applicable with FAR 52.225-9)

(a) *Definitions*. "Construction material," "domestic construction material," and "foreign construction material," as used in this provision, are defined in the clause of this solicitation entitled "Buy American Act—Construction Materials" (Federal Acquisition Regulation (FAR) clause 52.225-9).

(b) *Requests for determinations of inapplicability*. An offeror requesting a determination regarding the inapplicability of the Buy American Act should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of the clause at FAR 52.225-9 in the request. If an offeror has not requested a determination regarding the inapplicability of the Buy American Act before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) *Evaluation of offers*. (1) The Government will evaluate an offer requesting exception to the requirements of the Buy American Act, based on claimed unreasonable cost of domestic construction material, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(3)(i) of the clause at FAR 52.225-9.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) *Alternate offers*. (1) When an offer includes foreign construction material not listed by the Government in this solicitation in paragraph (b)(2) of the clause at FAR 52.225-9, the offeror also may submit an alternate offer based on use of equivalent domestic construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of the clause at FAR 52.225-9 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of the clause at FAR 52.225-9 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic construction material, and the offeror shall be required to furnish such domestic construction material. An offer based on use of the foreign construction material for which an exception was requested—

(i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or
(ii) May be accepted if revised during negotiations.

(End of provision)

64. *FAR 52.225-11 BUY AMERICAN ACT—CONSTRUCTION MATERIALS UNDER TRADE AGREEMENTS (JUNE 2004) [For Contracts more than $6,481,000] ALTERNATE I (JAN 2004) [<u>For Contracts between $6.481 and 7.304733 Million</u>]

(a) *Definitions*. As used in this clause—

"Component" means an article, material, or supply incorporated directly into a construction material.

"Construction material" means an article, material, or supply brought to the construction site by the Contractor or subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as

emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

"Cost of components" means—

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the construction material (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the end product.

"Designated country" means any of the following countries:

Aruba	Kiribati
Austria	Korea, Republic of
Bangladesh	Latvia
Belgium	Lesotho
Benin	Liechtenstein
Bhutan	Lithuania
Botswana	Luxembourg
Burkina Faso	Malawi
Burundi	Maldives
Canada	Mali
Cape Verde	Malta
Central African Republic	Mozambique
	Nepal
Chad	Netherlands
Comoros	Niger
Cyprus	Norway
Czech Republic	Poland
Denmark	Portugal
Djibouti	Rwanda
Equatorial Guinea	Sao Tome and Principe
Estonia	Sierra Leone
Finland	Singapore
France	Slovak Republic
Gambia	Slovenia
Germany	Somalia
Greece	Spain
Guinea	Sweden
Guinea-Bissau	Switzerland
Haiti	Tanzania U.R.
Hong Kong	Togo
Hungary	Tuvalu
Iceland	Uganda
Ireland	United Kingdom
Israel	Vanuatu
Italy	Western Samoa
Japan	Yemen

"Designated country construction material" means a construction material that—

(1) Is wholly the growth, product, or manufacture of a designated country; or

(2) In the case of a construction material that consists in whole or in part of materials from another

country, has been substantially transformed in a designated country into a new and different construction material distinct from the materials from which it was transformed.

"Domestic construction material" means—

(1) An unmanufactured construction material mined or produced in the United States; or

(2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic.

"Foreign construction material" means a construction material other than a domestic construction material.

"Free Trade Agreement country" means Canada, Chile, Mexico, or Singapore.

"Free Trade Agreement country construction material" means a construction material that—

(1) Is wholly the growth, product, or manufacture of a Free Trade Agreement (FTA) country; or

(2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a FTA country into a new and different construction material distinct from the materials from which it was transformed.

"United States" means the 50 States and the District of Columbia, and outlying areas.

(b) *Construction materials*. (1) This clause implements the Buy American Act (41 U.S.C. 10a–10d) by providing a preference for domestic construction material. In addition, the Contracting Officer has determined that the Trade Agreements Act and Free Trade Agreements (FTAs) apply to this acquisition.
Therefore, the Buy American Act restrictions are waived for designated country and FTA country construction materials.

(2) The Contractor shall use only domestic, designated country, or FTA country construction material in performing this contract, except as provided in paragraphs (b)(3) and (b)(4) of this clause.

(3) The requirement in paragraph (b)(2) of this clause does not apply to the construction materials or components listed by the Government as follows:

_____

[*Contracting Officer to list applicable excepted materials or indicate "none"*]

(4) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(3) of this clause if the Government determines that—

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the restrictions of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent;

(ii) The application of the restriction of the Buy American Act to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) *Request for determination of inapplicability of the Buy American Act*. (1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(4) of this clause shall include adequate information for Government evaluation of the request, including—

(A) A description of the foreign and domestic construction materials;
(B) Unit of measure;
(C) Quantity;
(D) Price;
(E) Time of delivery or availability;
(F) Location of the construction project;
(G) Name and address of the proposed supplier; and
(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall

explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(4)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American Act applies, use of foreign construction material is noncompliant with the Buy American Act.

(d) *Data*. To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

FOREIGN AND DOMESTIC CONSTRUCTION MATERIALS PRICE COMPARISON			
Construction Material Description	Unit of Measure	Quantity	Price (Dollars)*
Item 1:			
Foreign construction material	_____	_____	_____
Domestic construction material	_____	_____	_____
Item 2:			
Foreign construction material	_____	_____	_____
Domestic construction material	_____	_____	_____

[List *name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.] [Include other applicable supporting information.]*
[Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).]*

(e) United States law will apply to resolve any claim of breach of this contract.

(End of clause)

Alternate I (Jan 2004). As prescribed in 25.1102(c)(3), delete the definitions of ''Free Trade Agreement country'' and ''Free Trade Agreement country construction material'' from the definitions in paragraph (a) of the basic clause, add the following definition of ''Chilean construction material'' to paragraph (a) of the basic clause, and substitute the following paragraphs (b)(1) and (b)(2) for paragraphs (b)(1) and (b)(2) of the basic clause:

"Chilean construction material" means a construction material that—

(1) Is wholly the growth, product, or manufacture of Chile; or

(2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in Chile into a new and different construction material distinct from the materials from which it was transformed.

(b) *Construction materials.* (1) This clause implements the Buy American Act (41 U.S.C. 10a–10d) by providing a preference for domestic construction material. In addition, the Contracting Officer has determined that the Trade Agreements Act, the Chile Free Trade Agreement, and the Singapore Free Trade Agreement apply to this acquisition. Therefore, the Buy American Act restrictions are waived for designated country and Chilean construction materials.

(2) The Contractor shall use only domestic, designated country, or Chilean construction material in performing this contract, except as provided in paragraphs (b)(3) and (b)(4) of this clause.

65. *FAR 52.225-12 NOTICE OF BUY AMERICAN ACT REQUIREMENT—CONSTRUCTION MATERIALS UNDER TRADE AGREEMENTS (JAN 2004) [Applicable with FAR 52.225-11] ALTERNATE II (JAN 2004) [For Contracts Between 6.481 and 7.344733 Million]

(a) *Definitions.* "Construction material," "designated country construction material," "domestic construction material," "foreign construction material," and "FTA country construction material," as used in this provision, are defined in the clause of this solicitation entitled "Buy American Act—
Construction Materials under Trade Agreements" (Federal Acquisition Regulation (FAR) clause 52.225-11).

(b) *Requests for determination of inapplicability*. An offeror requesting a determination regarding the inapplicability of the Buy American Act should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of FAR clause 52.225-11 in the request. If an offeror has not requested a determination regarding the inapplicability of the Buy American Act before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) *Evaluation of offers*. (1) The Government will evaluate an offer requesting exception to the requirements of the Buy American Act, based on claimed unreasonable cost of domestic construction materials, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(4)(i) of FAR clause 52.225-11.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) *Alternate offers*. (1) When an offer includes foreign construction material, other than designated country or FTA country construction material, that is not listed by the Government in this solicitation in paragraph (b)(3) of FAR clause 52.225-11, the offeror also may submit an alternate offer based on use of equivalent domestic, designated country, or FTA country construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of FAR clause 52.225-11 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of FAR clause 52.225-11 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic, designated country, or FTA country construction material, and the offeror shall be required to furnish such domestic, designated country, or FTA country construction material. An offer based on use of the foreign construction material for which an exception was requested—

(i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or

(ii) May be accepted if revised during negotiations.

(End of provision)

ALTERNATE II (JAN 2004) **[For Contracts between 6.481 and 7.304733 Million]**
As prescribed in 25.1102(d)(3), substitute the following paragraphs (a) and (d) for paragraphs (a) and (d) of the basic provision:

(a) Definitions. *Chilean construction material, construction material, designated country construction material, domestic construction material*, and *foreign construction material*, as used in this provision, are defined in the clause of this solicitation entitled ''Buy American Act—Construction Materials Under Trade Agreements'' (Federal Acquisition Regulation (FAR) clause 52.225–11).

(d) *Alternate offers*. (1) When an offer includes foreign construction material, other than designated country or Chilean construction material, that is not listed by the Government in this solicitation in paragraph (b)(3) of FAR clause 52.225–11, the offeror also may submit an alternate offer based on use of equivalent domestic,

designated country, or Chilean construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of FAR clause 52.225-11 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of FAR clause 52.225–11 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic, designated country, or Chilean construction material, and the offeror shall be required to furnish such domestic, designated country, or Chilean construction material. An offer based on use of the foreign construction material for which an exception was requested—

(i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or
(ii) May be accepted if revised during negotiations.

66. *FAR 52.225-13 RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (DEC 2003)

(a) Except as authorized by the Office of Foreign Assets Control (OFAC) in the Department of the Treasury, the Contractor shall not acquire, for use in the performance of this contract, any supplies or services if any proclamation, Executive order, or statute administered by OFAC, or if OFAC's implementing regulations at 31 CFR chapter V, would prohibit such a transaction by a person subject to the jurisdiction of the United States.

(b) Except as authorized by OFAC, most transactions involving Cuba, Iran, Libya, and Sudan are prohibited, as are most imports from North Korea, into the United States or its outlying areas. Lists of entities and individuals subject to economic sanctions are included in OFAC's List of Specially Designated Nationals and Blocked Persons at *http://www.epls.gov/TerList1.html*. More information about these restrictions, as well as updates, is available in the OFAC's regulations at 31 CFR chapter V and/or on OFAC's website at *http://www.treas.gov/ofac*.

(c) The Contractor shall insert this clause, including this paragraph (c), in all subcontracts.
(End of clause)

67. DFARS 252.226-7001 UTILIZATION OF INDIAN ORGANIZATIONS, INDIAN-OWNED ECONOMIC ENTERPRISES, AND NATIVE HAWAIIAN SMALL BUSINESS CONCERNS (OCT 2003)

(a) *Definitions.* As used in this clause--

"Indian" means any person who is a member of any Indian tribe, band, group, pueblo, or community that is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs (BIA) in accordance with 25 U.S.C. 1452(c) and any "Native" as defined in the Alaska Native Claims Settlement Act (43 U.S.C. 1601).

"Indian organization" means the governing body of any Indian tribe or entity established or recognized by the governing body of an Indian tribe for the purposes of 25 U.S.C. Chapter 17.

"Indian-owned economic enterprise" means any Indian-owned (as determined by the Secretary of the Interior) commercial, industrial, or business activity established or organized for the purpose of profit, provided that Indian ownership constitutes not less than 51 percent of the enterprise.

"Indian tribe" means any Indian tribe, band, group, pueblo, or community, including native villages and native groups (including corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, that is recognized by the Federal Government as eligible for services from BIA in accordance with 25 U.S.C. 1452(c).

"Interested party" means a contractor or an actual or prospective offeror whose direct economic interest would be affected by the award of a subcontract or by the failure to award a subcontract.

"Native Hawaiian small business concern" means an entity that is-

(1) A small business concern as defined in Section 3 of the Small Business Act (15 U.S.C. 632) and relevant implementing regulations; and

(2) Owned and controlled by a Native Hawaiian as defined in 25 U.S.C. 4221(9).

(b) The Contractor shall use its best efforts to give Indian organizations, Indian-owned economic enterprises, and Native Hawaiian small business concerns the maximum practicable opportunity to participate in the subcontracts it awards, to the fullest extent consistent with efficient performance of the contract.

(c) The Contracting Officer and the Contractor, acting in good faith, may rely on the representation of an Indian organization, Indian-owned economic enterprise, or Native Hawaiian small business concern as to its eligibility, unless an interested party challenges its status or the Contracting Officer has independent reason to question that status.

(d) In the event of a challenge to the representation of a subcontractor, the Contracting Officer will refer the matter to-

(1) For matters relating to Indian organizations or Indian-owned economic enterprises:

U.S. Department of the Interior
Bureau of Indian Affairs
Attn: Chief, Division of Contracting and
Grants Administration
1849 C Street NW, MS-2626-MIB
Washington, DC 20240-4000.

The BIA will determine the eligibility and will notify the Contracting Officer.

(2) For matters relating to Native Hawaiian small business concerns:

Department of Hawaiian Home Lands
PO Box 1879
Honolulu, HI 96805.

The Department of Hawaiian Home Lands will determine the eligibility and will notify the Contracting Officer.

(e) No incentive payment will be made-

(1) While a challenge is pending; or

(2) If a subcontractor is determined to be an ineligible participant.

(f)(1) The Contractor, on its own behalf or on behalf of a subcontractor at any tier, may request an incentive payment in accordance with this clause.

(2) The incentive amount that may be requested is 5 percent of the estimated cost, target cost, or fixed price included in the subcontract at the time of award to the Indian organization, Indian-owned economic enterprise, or Native Hawaiian small business concern.

(3) In the case of a subcontract for commercial items, the Contractor may receive an incentive payment only if the subcontracted items are produced or manufactured in whole or in part by an Indian organization, Indian-owned economic enterprise, or Native Hawaiian small business concern.

(4) The Contractor has the burden of proving the amount claimed and shall assert its request for an incentive payment prior to completion of contract performance.

(5) The Contracting Officer, subject to the terms and conditions of the contract and the availability of funds, will authorize an incentive payment of 5 percent of the estimated cost, target cost, or fixed price included in the subcontract awarded to the Indian organization, Indian-owned economic enterprise, or Native Hawaiian small business concern.

(6) If the Contractor requests and receives an incentive payment on behalf of a subcontractor, the

Contractor is obligated to pay the subcontractor the incentive amount.

(g) The Contractor shall insert the substance of this clause, including this paragraph (g), in all subcontracts exceeding $500,000 for which further subcontracting opportunities may exist.

(End of clause)

68. *FAR 52.227-1 AUTHORIZATION AND CONSENT (JUL 1995)

(a) The Government authorizes and consents to all use and manufacture, in performing this contract or any subcontract at any tier, of any invention described in and covered by a United States patent

(1) embodied in the structure or composition of any article the delivery of which is accepted by the Government under this contract or

(2) used in machinery, tools, or methods whose use necessarily results from compliance by the Contractor or a subcontractor with

(i) specifications or written provisions forming a part of this contract or

(ii) specific written instructions given by the Contracting Officer directing the manner of performance. The entire liability to the Government for infringement of a patent of the United States shall be determined solely by the provisions of the indemnity clause, if any, included in this contract or any subcontract hereunder (including any lower-tier subcontract), and the Government assumes liability for all other infringement to the extent of the authorization and consent hereinabove granted.

(b) The Contractor agrees to include, and require inclusion of, this clause, suitably modified to identify the parties, in all subcontracts at any tier for supplies or services (including construction, architect-engineer services, and materials, supplies, models, samples, and design or testing services expected to exceed the simplified acquisition threshold) however, omission of this clause from any subcontract, including those at or below the simplified acquisition threshold, does not affect this authorization and consent.

69. *FAR 52.227-2 NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT (AUG 1996)

(a) The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copy-right infringement based on the performance of this contract of which the Contractor has knowledge.

(b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed under this contract, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.

(c) The Contractor agrees to include, and require inclusion of, this clause in all subcontracts at any tier for supplies or services (including construction and architect-engineer subcontracts and those for material, supplies, models, samples, or design or testing services) expected to exceed the simplified acquistion threshold at FAR 2.101.

70. *FAR 52.227-4 PATENT INDEMNITY--CONSTRUCTION CONTRACTS (APR 1984)

Except as otherwise provided, the Contractor agrees to indemnify the Government and its officers, agents, and employees against liability, including costs and expenses, for infringement upon any United States patent (except a patent issued upon an application that is now or may hereafter be withheld from issue pursuant to a Secrecy Order under 35 U.S.C. 181) arising out of performing this contract or out of the use or disposal by or for the account of the Government of supplies furnished or work performed under this contract.

71. DFARS 252.227-7022 GOVERNMENT RIGHTS (UNLIMITED) (MAR 1979)

The Government shall have unlimited rights, in all drawings, designs, specifications, notes and other works developed in the performance of this contract, including the right to use same on any other Government design or construction without additional compensation to the Contractor. The Contractor hereby grants to the Government a paid-up license throughout the world to all such works to which he may assert or establish any claim under design patent or copyright laws. The Contractor for a period of three (3) years after completion of the project agrees to furnish the original or copies of all such works on the request of the Contracting Officer. (End of clause)

72. DFARS 252.227-7023 DRAWINGS AND OTHER DATA TO BECOME PROPERTY OF GOVERNMENT (MAR 1979)

All designs, drawings, specifications, notes and other works developed in the performance of this contract shall become the sole property of the Government and may be used on any other design or construction without additional compensation to the Contractor. The Government shall be considered the "person for whom the work was prepared" for the purpose of authorship in any copyrightable work under 17 U.S.C. 201(b). With respect thereto, the Contractor agrees not to assert or authorize others to assert any rights nor establish any claim under the design patent or copyright laws. The Contractor for a period of three (3) years after completion of the project agrees to furnish all retained works on the request of the Contracting Officer. Unless otherwise provided in this contract, the Contractor shall have the right to retain copies of all works beyond such period.

73. DFARS 252.227-7033 RIGHTS IN SHOP DRAWINGS (APR 1966)

(a) Shop drawings for construction means drawings, submitted to the Government by the Construction Contractor, subcontractor or any lower-tier subcontractor pursuant to a construction contract, showing in detail

(i) the proposed fabrication and assembly of structural elements and (ii) the installation (i.e., form, fit, and attachment details) of materials or equipment. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(b) This clause, including this paragraph (b), shall be included in all subcontracts hereunder at any tier.

74. *FAR 52.228-2 ADDITIONAL BOND SECURITY (OCT 1997)

The Contractor shall promptly furnish additional security required to protect the Government and persons supplying labor or materials under this contract if--

(a) Any surety upon any bond, or issuing financial institution for other security, furnished with this contract becomes unacceptable to the Government;

(b) Any surety fails to furnish reports on its financial condition as required by the Government;

(c) The contract price is increased so that the penal sum of any bond becomes inadequate in the opinion of the Contracting Officer; or

(d) An irrevocable letter of credit (ILC) used as security will expire before the end of the period of required security. If the Contractor does not furnish an acceptable extension or replacement ILC, or other acceptable substitute, at least 30 days before an ILC's scheduled expiration, the Contracting Officer has the right to immediately draw on the ILC.

75. *FAR 52.228-5 INSURANCE--WORK ON A GOVERNMENT INSTALLATION (JAN 1997) [For Contracts Exceeding $100,000]

(a) The Contractor shall, at its own expense, provide and maintain during the entire performance of this contract, at least the kinds and minimum amounts of insurance required in the Schedule or elsewhere in the contract.

(b) Before commencing work under this contract, the Contractor shall notify the Contracting Officer in writing that the required insurance has been obtained. The policies evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change adversely affecting the Government's interest shall not be effective

(1) for such period as the laws of the State in which this contract is to be performed prescribe, or

(2) until 30 days after the insurer or the Contractor gives written notice to the Contracting Officer, whichever period is longer.

(c) The Contractor shall insert the substance of this clause, including this paragraph (c), in subcontracts under this contract that require work on a Government installation and shall require subcontractors to provide and maintain the insurance required in the Schedule or elsewhere in the contract. The Contractor shall maintain a copy of all subcontractors' proofs of required insurance, and shall make copies available to the Contracting Officer upon request.

76. *FAR 52.228-11 PLEDGES OF ASSETS (FEB 1992)

(a) Offerors shall obtain from each person acting as an individual surety on a bid guarantee, a performance bond, or a payment bond--

(1) Pledge of assets; and

(2) Standard Form 28, Affidavit of Individual Surety.

(b) Pledges of assets from each person acting as an individual surety shall be in the form of--

(1) Evidence of an escrow account containing cash, certificates of deposit, commercial or Government securities, or other assets described in FAR 28.203-2 (except see 28.203-2(b)(2) with respect to Government securities held in book entry form) and/or;

(2) A recorded lien on real estate. The offeror will be required to provide--

(i) Evidence of title in the form of a certificate of title prepared by a title insurance company approved by the United States Department of Justice. This title evidence must show fee simple title vested in the surety along with any concurrent owners; whether any real estate taxes are due and payable; and any recorded encumbrances against the property, including the lien filed in favor of the Government as required by FAR 28.203-3(d);

(ii) Evidence of the amount due under any encumbrance shown in the evidence of title;

(iii) A copy of the current real estate tax assessment of the property or a current appraisal dated no earlier than 6 months prior to the date of the bond, prepared by a professional appraiser who certifies that the appraisal has been conducted in accordance with the generally accepted appraisal standards as reflected in the Uniform Standards of Professional Appraisal Practice, as promulgated by the Appraisal Foundation.

77. *FAR 52.228-12 PROSPECTIVE SUBCONTRACTOR REQUESTS FOR BONDS (OCT 1995)

In accordance with Section 806(a)(3) of Public Law 102-190, as amended by Sections 2091 and 8105 of Pub. L. 103-355, upon the request of a prospective subcontractor or supplier offering to furnish labor or material for the performance of this contract for which a payment bond has been furnished to the Government pursuant to the Miller Act, the Contractor shall promptly provide a copy of such payment bond to the requestor.

78. FAR 52.228-14 IRREVOCABLE LETTER OF CREDIT (DEC 1999)

(a) "Irrevocable letter of credit" (ILC), as used in this clause, means a written commitment by a federally insured financial institution to pay all or part of a stated amount of money, until the expiration date of the letter, upon presentation by the Government (the beneficiary) of a written demand therefor. Neither the financial institution nor the offeror/Contractor can revoke or condition the letter of credit.

(b) If the offeror intends to use an ILC in lieu of a bid bond, or to secure other types of bonds such as performance and payment bonds, the letter of credit and letter of confirmation formats in paragraphs (e) and (f) of this clause shall be used.

(c) The letter of credit shall be irrevocable, shall require presentation of no document other than a written demand and the ILC (including confirming letter, if any), shall be issued/confirmed by an acceptable federally insured financial institution as provided in paragraph (d) of this clause, and--

(1) If used as a bid guarantee, the ILC shall expire no earlier than 60 days after the close of the bid acceptance period;

(2) If used as an alternative to corporate or individual sureties as security for a performance or payment bond, the offeror/Contractor may submit an ILC to cover the entire period of performance or may submit an ILC with an initial expiration date estimated to cover the entire period for which financial security is required or may submit an ILC with an an initial expiration that is a minimum period of one year from the date of issuance. The ILC shall provide that, unless the issuer provides the beneficiary written notice of non-renewal of least 60 days in advance of the current expiration date, the ILC is automatically extended without amendment for one year from the expiration date, or any future expiration date, until the period of required coverage is completed and the Contracting Officer provides the financial institution with a written statement waiving the right to payment. The period of required coverage shall be:

(i) For contracts subject to the Miller Act, the later of--

(A) One year following the expected date of final payment;

(B) For performance bonds only, until completion of any warranty period; or

(C) For payment bonds only, until resolution of all claims filed against the payment bond during the one-year period following final payment.

(ii) For contracts not subject to the Miller Act, the later of--

(A) 90 days following final payment; or

(B) For performance bonds only, until completion of any warranty period.

(d) Only federally insured financial institution rated investment grade or higher shall issue or confirm the ILC. The offeror/Contractor shall provide the Contracting Officer a credit rating that indicates the financial institution has the required rating(s) as of the date of issuance of the ILC. Unless the financial institution issuing the ILC had letter of credit business of at least $25 million in the past year, ILCs over $5 million must be confirmed by another acceptable financial institution that had letter of credit business of at least $25 million in the past year.

(e) The following format shall be used by the issuing financial institution to create an ILC:

[Issuing Financial Institution's Letterhead or Name and Address]

Issue Date ----------

Irrevocable Letter of Credit No.----------
Account party's name----------
Account party's address----------
For Solicitation No.----------
(For reference only)

TO: [U.S. Government agency]
[U.S. Government agency's address]

1. We hereby establish this irrevocable and transferable Letter of Credit in your favor for one or more drawings up to United States $_____. This Letter of Credit is payable at [issuing financial institution's and, if any, confirming financial institution's] office at [issuing financial institution's address and, if any, confirming financial institution's address] and expires with our close of business on _____, or any automatically extended expiration date.

2. We hereby undertake to honor your or transferee's sight draft(s) drawn on issuing or, if any, the confirming financial institution, for all or any part of this credit if presented with this Letter of Credit and confirmation, if any, at the office specified in paragraph 1 of this Letter of Credit on or before the expiration date or any automatically extended expiration date.

3. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this Letter of Credit that it is deemed to be automatically extended without amendment for one year from the expiration date hereof, or any future expiration date, unless at least 60 days prior to any expiration date, we notify you or the transferee by registered mail, or other receipted means of delivery, that we elect not to consider this Letter of Credit renewed for any such additional period. At the time we notify you, we also agree to notify the account party (and confirming financial institution, if any) by the same means of delivery.

4. This Letter of Credit is transferable. Transfers and assignments of proceeds are to be effected without charge to either the beneficiary or the transferee/assignee of proceeds. Such transfer or assignment shall be only at the written direction of the Government (the beneficiary) in a form satisfactory to the issuing financial institution and the confirming financial institution, if any.

5. This Letter of Credit is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of _____ [state of confirming financial institution, if any, otherwise state of issuing financial institution].

6. If this credit expires during an interruption of business of this financial institution as described in Article 17 of the UCP, the financial institution specifically agrees to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

[Issuing financial institution]

(f) The following format shall be used by the financial institution to confirm an ILC:

[Confirming Financial Institution's Letterhead or Name and Address]---

(Date)_____

Our Letter of Credit
Advice Number----------
Beneficiary:----------
[U.S. Government agency]
Issuing Financial Institution:----------
Issuing Financial Institution's LC No.:----------

Gentlemen:

1. We hereby confirm the above indicated Letter of Credit, the original of which is attached, issued by _____ [name of issuing financial institution] for drawings of up to United States dollars _____/U.S. $_____ and expiring with our close of business on _____ [the expiration date], or any automatically extended expiration date.

2. Draft(s) drawn under the Letter of Credit and this Confirmation are payable at our office located at _____.

3. We hereby undertake to honor sight draft(s) drawn under and presented with the Letter of Credit and this Confirmation at our offices as specified herein.

4. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this confirmation that it be deemed automatically extended without amendment for one year from the expiration date hereof, or any automatically extended expiration date, unless:

(a) At least 60 days prior to any such expiration date, we shall notify the Contracting Officer, or the transferee and the issuing financial institution, by registered mail or other receipted means of delivery, that we elect not to consider this confirmation extended for any such additional period; or

(b) The issuing financial institution shall have exercised its right to notify you or the transferee, the account party, and ourselves, of its election not to extend the expiration date of the Letter of Credit.

5. This confirmation is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of _____ [state of confirming financial institution].

6. If this confirmation expires during an interruption of business of this financial institution as described in Article 17 of the UCP, we specifically agree to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

[Confirming financial institution]

(g) The following format shall be used by the Contracting Officer for a sight draft to draw on the Letter of Credit:

SIGHT DRAFT

[City, State]

(Date)_____

[Name and address of financial institution]

Pay to the order of----------

[Beneficiary Agency] _____

the sum of United States $ _____

This draft is drawn under----------

Irrevocable Letter of Credit No.----------

[Beneficiary Agency]

By: _____

79. *FAR 52.228-15 PERFORMANCE AND PAYMENT BONDS (JULY 2000)

(a) *Definitions*. As used in this clause—

"Original contract price" means the award price of the contract; or, for requirements contracts, the price payable for the estimated total quantity; or, for indefinite-quantity contracts, the price payable for the specified minimum quantity. Original contract price does not include the price of any options, except those options exercised at the time of contract award.

(b) *Amount of required bonds*. Unless the resulting contract price is $100,000 or less, the successful offeror shall furnish performance and payment bonds to the Contracting Officer as follows:

(1) *Performance bonds (Standard Form 25).* The penal amount of performance bonds at the time of contract award shall be 100 percent of the original contract price.

(2) *Payment Bonds (Standard Form 25-A).* The penal amount of payment bonds at the time of contract award shall be 100 percent of the original contract price.

(3) *Additional bond protection*. (i) The Government may require additional performance and payment bond protection if the contract price is increased. The increase in protection generally will equal 100 percent of the increase in contract price.

(ii) The Government may secure the additional protection by directing the Contractor to increase the penal amount of the existing bond or to obtain an additional bond.

(c) *Furnishing executed bonds*. The Contractor shall furnish all executed bonds, including any necessary reinsurance agreements, to the Contracting Officer, within the time period specified in the Bid Guarantee provision

of the solicitation, or otherwise specified by the Contracting Officer, but in any event, before starting work.

(d) *Surety or other security for bonds*. The bonds shall be in the form of firm commitment, supported by corporate sureties whose names appear on the list contained in Treasury Department Circular 570, individual sureties, or by other acceptable security such as postal money order, certified check, cashier's check, irrevocable letter of credit, or, in accordance with Treasury Department regulations, certain bonds or notes of the United States. Treasury Circular 570 is published in the Federal Register or may be obtained from the:

U.S. Department of Treasury
Financial Management Service
Surety Bond Branch
401 14th Street, NW, 2nd Floor, West Wing
Washington, DC 20227.

(e) *Notice of subcontractor waiver of protection (40 U.S.C. 270b(c).* Any waiver of the right to sue on the payment bond is void unless it is in writing, signed by the person whose right is waived, and executed after such person has first furnished labor or material for use in the performance of the contract.
(End of clause)

80. FAR 52.229-3 FEDERAL, STATE, AND LOCAL TAXES (APR 2003) [<u>For Contracts Exceeding $100,000</u>]

(a) As used in this clause--

"All applicable Federal, State, and local taxes and duties," means all taxes and duties, in effect on the contract date, that the taxing authority is imposing and collecting on the transactions or property covered by this contract.

"After-imposed Federal tax," means any new or increased Federal excise tax or duty, or tax that was exempted or excluded on the contract date but whose exemption was later revoked or reduced during the contract period, on the transactions or property covered by this contract that the Contractor is required to pay or bear as the result of legislative, judicial, or administrative action taking effect after the contract date. It does not include social security tax or other employment taxes.

"After-relieved Federal tax," means any amount of Federal excise tax or duty, except social security or other employment taxes, that would otherwise have been payable on the transactions or property covered by this contract, but which the Contractor is not required to pay or bear, or for which the Contractor obtains a refund or drawback, as the result of legislative, judicial, or administrative action taking effect after the contract date.

"Contract date," means the date set for bid opening or, if this is a negotiated contract or a modification, the effective date of this contract or modification.

"*Local taxes"* includes taxes imposed by a possession or territory of the United States, Puerto Rico, or the Northern Mariana Islands, if the contract is performed wholly or partly in any of those areas.

(b) The contract price includes all applicable Federal, State, and local taxes and duties.

(c) The contract price shall be increased by the amount of any after-imposed Federal tax, provided the Contractor warrants in writing that no amount for such newly imposed Federal excise tax or duty or rate increase was included in the contract price, as a contingency reserve or otherwise.

(d) The contract price shall be decreased by the amount of any after-relieved Federal tax.

(e) The contract price shall be decreased by the amount of any Federal excise tax or duty, except social security or other employment taxes, that the Contractor is required to pay or bear, or does not obtain a refund of, through the Contractor's fault, negligence, or failure to follow instructions of the Contracting Officer.

(f) No adjustment shall be made in the contract price under this clause unless the amount of the adjustment exceeds $250.

(g) The Contractor shall promptly notify the Contracting Officer of all matters relating to any Federal excise tax or duty that reasonably may be expected to result in either an increase or decrease in the contract price and shall take appropriate action as the Contracting Officer directs.

(h) The Government shall, without liability, furnish evidence appropriate to establish exemption from any Federal, State, or local tax when the Contractor requests such evidence and a reasonable basis exists to sustain the exemption.

81. RESERVED

82. FAR 52.230-1 COST ACCOUNTING STANDARDS NOTICES AND CERTIFICATION (JUNE 2000)

Note: This notice does not apply to small businesses or foreign governments. This notice is in three parts, identified by Roman numerals I through III.

Offerors shall examine each part and provide the requested information in order to determine Cost Accounting Standards (CAS) requirements applicable to any resultant contract.

If the offeror is an educational institution, Part II does not apply unless the contemplated contract will be subject to full or modified CAS coverage pursuant to 48 CFR 9903.201-2(c)(5) or 9903.201-2(c)(6), respectively.

I. DISCLOSURE STATEMENT--COST ACCOUNTING PRACTICES AND CERTIFICATION

(a) Any contract in excess of $500,000 resulting from this solicitation will be subject to the requirements of the Cost Accounting Standards Board (48 CFR Chapter 99), except for those contracts which are exempt as specified in 48 CFR 9903.201-1.

(b) Any offeror submitting a proposal which, if accepted, will result in a contract subject to the requirements of 48 CFR Chapter 99 must, as a condition of contracting, submit a Disclosure Statement as required by 48 CFR 9903.202. When required, the Disclosure Statement must be submitted as a part of the offeror's proposal under this solicitation unless the offeror has already submitted a Disclosure Statement disclosing the practices used in connection with the pricing of this proposal. If an applicable Disclosure Statement has already been submitted, the offeror may satisfy the requirement for submission by providing the information requested in paragraph (c) of Part I of this provision.

CAUTION: In the absence of specific regulations or agreement, a practice disclosed in a Disclosure Statement shall not, by virtue of such disclosure, be deemed to be a proper, approved, or agreed-to practice for pricing proposals or accumulating and reporting contract performance cost data.

(c) Check the appropriate box below:

[ ] (1) Certificate of Concurrent Submission of Disclosure Statement

The offeror hereby certifies that, as a part of the offer, copies of the Disclosure Statement have been submitted as follows: (i) original and one copy to the cognizant Administrative Contracting Officer (ACO) or cognizant Federal agency official authorized to act in that capacity (Federal official), as applicable, and (ii) one copy to the cognizant Federal auditor.

(Disclosure must be on Form No. CASB DS-1 or CASB DS-2, as applicable. Forms may be obtained from the cognizant ACO or Federal official and/or from the loose-leaf version of the Federal Acquisition Regulation.)

Date of Disclosure Statement: _____

Name and Address of Cognizant ACO or Federal Official Where Filed:

_____

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the Disclosure Statement.

[ ] (2) Certificate of Previously Submitted Disclosure Statement.

The offeror hereby certifies that the required Disclosure Statement was filed as follows:

Date of Disclosure Statement: _____
Name and Address of Cognizant ACO or Federal Official Where Filed:
_____

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the applicable Disclosure Statement.

[ ] (3) Certificate of Monetary Exemption.

The offeror hereby certifies that the offeror, together with all divisions, subsidiaries, and affiliates under common control, did not receive net awards of negotiated prime contracts and subcontracts subject to CAS totaling $50 million or more in the cost accounting period immediately preceding the period in which this proposal was submitted. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

[ ] (4) Certificate of Interim Exemption.

The offeror hereby certifies that (i) the offeror first exceeded the monetary exemption for disclosure, as defined in (3) of this subsection, in the cost accounting period immediately preceding the period in which this offer was submitted and (ii) in accordance with 48 CFR 9903.202-1, the offeror is not yet required to submit a Disclosure Statement. The offeror further certifies that if an award resulting from this proposal has not been made within 90 days after the end of that period, the offeror will immediately submit a revised certificate to the Contracting Officer, in the form specified under subparagraph (c)(1) or (c)(2) of Part I of this provision, as appropriate, to verify submission of a completed Disclosure Statement.

CAUTION: Offerors currently required to disclose because they were awarded a CAS-covered prime contract or subcontract of $50 million or more in the current cost accounting period may not claim this exemption (4). Further, the exemption applies only in connection with proposals submitted before expiration of the 90-day period following the cost accounting period in which the monetary exemption was exceeded.

II. COST ACCOUNTING STANDARDS--ELIGIBILITY FOR MODIFIED CONTRACT COVERAGE

If the offeror is eligible to use the modified provisions of 48 CFR 9903.201-2(b) and elects to do so, the offeror shall indicate by checking the box below. Checking the box below shall mean that the resultant contract is subject to the Disclosure and Consistency of Cost Accounting Practices clause in lieu of the Cost Accounting Standards clause.

[ ] The offeror hereby claims an exemption from the Cost Accounting Standards clause under the provisions of 48 CFR 9903.201-2(b) and certifies that the offeror is eligible for use of the Disclosure and Consistency of Cost Accounting Practices clause because during the cost accounting period immediately preceding the period in which this proposal was submitted, the offeror received less than $50 million in awards of CAS-covered prime contracts and subcontracts. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

CAUTION: An offeror may not claim the above eligibility for modified contract coverage if this proposal is expected to result in the award of a CAS-covered contract of $50 million or more or if, during its current cost accounting period, the offeror has been awarded a single CAS-covered prime contract or subcontract of $50 million or more.

III. ADDITIONAL COST ACCOUNTING STANDARDS APPLICABLE TO EXISTING CONTRACTS

The offeror shall indicate below whether award of the contemplated contract would, in accordance with subparagraph (a)(3) of the Cost Accounting Standards clause, require a change in established cost accounting practices affecting existing contracts and subcontracts.

[ ] YES [ ] NO
(End of provision)

83. *FAR 52.230-2 COST ACCOUNTING STANDARDS (APR 1998)

(a) Unless the contract is exempt under 48 CFR 9903.201-1 and 9903.201-2, the provisions of 48 CFR Part 9903 are incorporated herein by reference and the Contractor, in connection with this contract, shall--

(1) (CAS-covered Contracts Only) By submission of a Disclosure Statement, disclose in writing the Contractor's cost accounting practices as required by 48 CFR 9903.202-1 through 9903.202-5, including methods of distinguishing direct costs from indirect costs and the basis used for allocating indirect costs. The practices disclosed for this contract shall be the same as the practices currently disclosed and applied on all other contracts and subcontracts being performed by the Contractor and which contain a Cost Accounting Standards (CAS) clause. If the Contractor has notified the Contracting Officer that the Disclosure Statement contains trade secrets and commercial or financial information which is privileged and confidential, the Disclosure Statement shall be protected and shall not be released outside of the Government.

(2) Follow consistently the Contractor's cost accounting practices in accumulating and reporting contract performance cost data concerning this contract. If any change in cost accounting practices is made for the purposes of any contract or subcontract subject to CAS requirements, the change must be applied prospectively to this contract and the Disclosure Statement must be amended accordingly. If the contract price or cost allowance of this contract is affected by such changes, adjustment shall be made in accordance with subparagraph (a)(4) or (a)(5) of this clause, as appropriate.

(3) Comply with all CAS, including any modifications and interpretations indicated thereto contained in 48 CFR Part 9904, in effect on the date of award of this contract or, if the Contractor has submitted cost or pricing data, on the date of final agreement on price as shown on the Contractor's signed certificate of current cost or pricing data. The Contractor shall also comply with any CAS (or modifications to CAS) which hereafter become applicable to a contract or subcontract of the Contractor. Such compliance shall be required prospectively from the date of applicability to such contract or subcontract.

(4)(i) Agree to an equitable adjustment as provided in the Changes clause of this contract if the contract cost is affected by a change which, pursuant to subparagraph (a)(3) of this clause, the Contractor is required to make to the Contractor's established cost accounting practices.

(ii) Negotiate with the Contracting Officer to determine the terms and conditions under which a change may be made to a cost accounting practice, other than a change made under other provisions of subparagraph (a)(4) of this clause; provided that no agreement may be made under this provision that will increase costs paid by the United States.

(iii) When the parties agree to a change to a cost accounting practice, other than a change under subdivision (a)(4)(i) of this clause, negotiate an equitable adjustment as provided in the Changes clause of this contract.

(5) Agree to an adjustment of the contract price or cost allowance, as appropriate, if the Contractor or a subcontractor fails to comply with an applicable Cost Accounting Standard, or to follow any cost accounting practice consistently and such failure results in any increased costs paid by the United States. Such adjustment shall provide for recovery of the increased costs to the United States, together with interest thereon computed at the annual rate established under section 6621 of the Internal Revenue Code of 1986 (26 U.S.C. 6621) for such period, from the time the payment by the United States was made to the time the adjustment is effected. In no case shall the Government recover costs greater than the increased cost to the Government, in the aggregate, on the relevant contracts subject to the price adjustment, unless the Contractor made a change in its cost accounting practices of which it was aware or should have been aware at the time of price negotiations and which it failed to disclose to the Government.

(b) If the parties fail to agree whether the Contractor or a subcontractor has complied with an applicable CAS in 48 CFR 9904 or a CAS rule or regulation in 48 CFR 9903 and as to any cost adjustment demanded by the United States, such failure to agree will constitute a dispute under the Contract Disputes Act (41 U.S.C. 601).

(c) The Contractor shall permit any authorized representatives of the Government to examine and make copies of any documents, papers, or records relating to compliance with the requirements of this clause.

(d) The Contractor shall include in all negotiated subcontracts which the Contractor enters into, the substance of this clause, except paragraph (b), and shall require such inclusion in all other subcontracts, of any tier, including the obligation to comply with all CAS in effect on the subcontractor's award date or if the subcontractor has submitted cost or pricing data, on the date of final agreement on price as shown on the subcontractor's signed Certificate of Current Cost or Pricing Data. If the subcontract is awarded to a business unit which pursuant to 48 CFR 9903.201-2 is subject to other types of CAS coverage, the substance of the applicable clause set forth in subsection 30.201-4 of the Federal Acquisition Regulation shall be inserted. This requirement shall apply only to negotiated subcontracts in excess of $500,000, except that the requirement shall not apply to negotiated subcontracts otherwise exempt from the requirement to include a CAS clause as specified in 48 CFR 9903.201-1.

(End of clause)

84. *FAR 52.230-3 DISCLOSURE AND CONSISTENCY OF COST ACCOUNTING PRACTICES (APR 1998)

(a) The Contractor, in connection with this contract, shall--

(1) Comply with the requirements of 48 CFR 9904.401, Consistency in Estimating, Accumulating, and Reporting Costs; 48 CFR 9904.402, Consistency in Allocating Costs Incurred for the Same Purpose; 48 CFR 9904.405, Accounting for Unallowable Costs; and 48 CFR 9904.406, Cost Accounting Standard--Cost Accounting Period, in effect on the date of award of this contract as indicated in 48 CFR Part 9904.

(2) (CAS-covered Contracts Only) If it is a business unit of a company required to submit a Disclosure Statement, disclose in writing its cost accounting practices as required by 48 CFR 9903.202-1 through 9903.202-5. If the Contractor has notified the Contracting Officer that the Disclosure Statement contains trade secrets and commercial or financial information which is privileged and confidential, the Disclosure Statement shall be protected and shall not be released outside of the Government.

(3)(i) Follow consistently the Contractor's cost accounting practices. A change to such practices may be proposed, however, by either the Government or the Contractor, and the Contractor agrees to negotiate with the Contracting Officer the terms and conditions under which a change may be made. After the terms and conditions under which the change is to be made have been agreed to, the change must be applied prospectively to this contract, and the Disclosure Statement, if affected, must be amended accordingly.

(ii) The Contractor shall, when the parties agree to a change to a cost accounting practice and the Contracting Officer has made the finding required in 48 CFR 9903.201-6(b), that the change is desirable and not detrimental to the interests of the Government, negotiate an equitable adjustment as provided in the Changes clause of this contract. In the absence of the required finding, no agreement may be made under this contract clause that will increase costs paid by the United States.

(4) Agree to an adjustment of the contract price or cost allowance, as appropriate, if the Contractor or a subcontractor fails to comply with the applicable CAS or to follow any cost accounting practice, and such failure results in any increased costs paid by the United States. Such adjustment shall provide for recovery of the increased costs to the United States together with interest thereon computed at the annual rate of interest established under the Internal Revenue Code of 1986 (26 U.S.C. 6621), from the time the payment by the United States was made to the time the adjustment is effected.

(b) If the parties fail to agree whether the Contractor has complied with an applicable CAS, rule, or regulation as specified in 48 CFR 9903 and 9904 and as to any cost adjustment demanded by the United States, such failure to agree will constitute a dispute under the Contract Disputes Act (41 U.S.C. 601).

(c) The Contractor shall permit any authorized representatives of the Government to examine and make copies of any documents, papers, and records relating to compliance with the requirements of this clause.

(d) The Contractor shall include in all negotiated subcontracts, which the Contractor enters into, the substance of this clause, except paragraph (b), and shall require such inclusion in all other subcontracts of any tier, except that--

(1) If the subcontract is awarded to a business unit which pursuant to 48 CFR 9903.201-2 is subject to other types of CAS coverage, the substance of the applicable clause set forth in subsection 30.201-4 of the Federal Acquisition Regulation shall be inserted.

(2) This requirement shall apply only to negotiated subcontracts in excess of $500,000.

(3) The requirement shall not apply to negotiated subcontracts otherwise exempt from the requirement to include a CAS clause as specified in 48 CFR 9903.201-1.

(End of clause)

85. DFARS 252.231-7000 SUPPLEMENTAL COST PRINCIPLES (DEC 1991)

When the allowability of costs under this contract is determined in accordance with part 31 of the Federal Acquisition Regulation (FAR) allowability shall also be determined in accordance with part 231 of the DoD FAR Supplement, in effect on the date of this contract.

86. *FAR 52.232-5 PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS (SEPT 2002)

(a) Payment of Price. The Government shall pay the Contractor the contract price as provided in this contract.

(b) Progress Payments. The Government shall make progress payments monthly as the work proceeds, or at more frequent intervals as determined by the Contracting Officer, on estimates of work accomplished which meets the standards of quality established under the contract, as approved by the Contracting Officer.

(1) The Contractor's request for progress payments shall include the following substantiation:

(i) An itemization of the amounts requested, related to the various elements of work required by the contract covered by the payment requested.

(ii) A listing of the amount included for work performed by each subcontractor under the contract.

(iii) A listing of the total amount of each subcontract under the contract.

(iv) A listing of the amounts previously paid to each such subcontractor under the contract.

(v) Additional supporting data in a form and detail required by the Contracting Officer.

(2) In the preparation of estimates, the Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration. Material delivered to the Contractor at locations other than the site also may be taken into consideration if--

(i) Consideration is specifically authorized by this contract; and

(ii) The Contractor furnishes satisfactory evidence that it has acquired title to such material and that the material will be used to perform this contract.

(c) Contractor Certification. Along with each request for progress payments, the Contractor shall furnish the following certification, or payment shall not be made: (However, if the Contractor elects to delete paragraph (c)(4) from the certification, the certification is still acceptable.) I hereby certify, to the best of my knowledge and belief, that--

(1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;

(2) All payments due to subcontractors and suppliers from previous payments received under the contract have been made, and timely payments will be made from the proceeds of the payment covered by this

certification, in accordance with subcontract agreements and the requirements of chapter 39 of Title 31, United States Code;

(3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract; and

(4) This certification is not to be construed as final acceptance of a subcontractor's performance.

(Name)

(Title)

(Date)

(d) Refund of Unearned Amounts. If the Contractor, after making a certified request for progress payments, discovers that a portion or all of such request constitutes a payment for performance by the Contractor that fails to conform to the specifications, terms, and conditions of this contract (hereinafter referred to as the "unearned amount"), the Contractor shall--

(1) Notify the Contracting Officer of such performance deficiency; and

(2) Be obligated to pay the Government an amount (computed by the Contracting Officer in the manner provided in paragraph (j) of this clause) equal to interest on the unearned amount from the 8th day after the date of receipt of the unearned amount until--

(i) The date the Contractor notifies the Contracting Officer that the performance deficiency has been corrected; or

(ii) The date the Contractor reduces the amount of any subsequent certified request for progress payments by an amount equal to the unearned amount.

(e) Retainage. If the Contracting Officer finds that satisfactory progress was achieved during any period for which a progress payment is to be made, the Contracting Officer shall authorize payment to be made in full. However, if satisfactory progress has not been made, the Contracting Officer may retain a maximum of 10 percent of the amount of the payment until satisfactory progress is achieved. When the work is substantially complete, the Contracting Officer may retain from previously withheld funds and future progress payments that amount the Contracting Officer considers adequate for protection of the Government and shall release to the Contractor all the remaining withheld funds. Also, on completion and acceptance of each separate building, public work, or other division of the contract, for which the price is stated separately in the contract, payment shall be made for the completed work without retention of a percentage.

(f) Title, Liability, and Reservation of Rights. All material and work covered by progress payments made shall, at the time of payment, become the sole property of the Government, but this shall not be construed as--

(1) Relieving the Contractor from the sole responsibility for al material and work upon which payments have been made or the restoration of any damaged work; or

(2) Waiving the right of the Government to require the fulfillment of all of the terms of the contract.

(g) Reimbursement for Bond Premiums. In making these progress payments, the Government shall, upon request, reimburse the Contractor for the amount of premiums paid for performance and payment bonds (including coinsurance and reinsurance agreements, when applicable) after the Contractor has furnished evidence of full payment to the surety. The retainage provisions in paragraph (e) of this clause shall not apply to that portion of progress payments attributable to bond premiums.

(h) Final Payment. The Government shall pay the amount due the Contractor under this contract after--

(1) Completion and acceptance of all work;

(2) Presentation of a properly executed voucher; and

(3) Presentation of release of all claims against the Government arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. A release may also be required of the assignee if the Contractor's claim to amounts payable under this contract has been assigned under the Assignment of Claims Act of 1940 (31 U.S.C. 3727 and 41 U.S.C. 15).

(i) Limitation Because of Undefinitized Work. Notwithstanding any provision of this contract, progress payments shall not exceed 80 percent on work accomplished on undefinitized contract actions. A "contract action" is any action resulting in a contract, as defined in FAR Subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes clause, or funding and other administrative changes.

(j) Interest Computation on Unearned Amounts. In accordance with 31 U.S.C. 3903(c)(1), the amount payable under subparagraph (d)(2) of this clause shall be--

(1) Computed at the rate of average bond equivalent rates of 91-day Treasury bills auctioned at the most recent auction of such bills prior to the date the Contractor receives the unearned amount; and

(2) Deducted from the next available payment to the Contractor.

87. RESERVED.

88. *FAR 52.232-10 PAYMENTS UNDER FIXED-PRICE ARCHITECT-ENGINEER CONTRACTS (AUG 1987)

(a) Estimates shall be made monthly of the amount and value of the work and services performed by the Contractor under this contract which meet the standards of quality established under this contract. The estimates shall be prepared by the Contractor and accompanied by any supporting data required by the Contracting Officer.

(b) Upon approval of the estimate by the Contracting Officer, payment upon properly executed vouchers shall be made to the Contractor, as soon as practicable, of 90 percent of the approved amount, less all previous payments; provided, that payment may be made in full during any months in which the Contracting Officer determines that performance has been satisfactory. Also, whenever the Contracting Officer determines that the work is substantially complete and that the amount retained is in excess of the amount adequate for the protection of the Government, the Contracting Officer may release the excess amount to the Contractor.

(c) Upon satisfactory completion by the Contractor and acceptance by the Contracting Officer of the work done by the Contractor under the "Statement of Architect-Engineer Services", the Contractor will be paid the unpaid balance of any money due for work under the statement, including retained percentages relating to this portion of the work. Upon satisfactory completion and final acceptance of the construction work, the Contractor shall be paid any unpaid balance of money due under this contract.

(d) Before final payment under the contract, or before settlement upon termination of the contract, and as a condition precedent thereto, the Contractor shall execute and deliver to the Contracting Officer a release of all claims against the Government arising under or by virtue of this contract, other than any claims that are specifically excepted by the Contractor from the operation of the release in amounts stated in the release.

(e) Notwithstanding any other provision in this contract, and specifically paragraph (b) of this clause, progress payments shall not exceed 80 percent on work accomplished on undefinitized contract actions. A "contract action" is any action resulting in a contract, as defined in FAR Subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes clause, or funding and other administrative changes. (End of clause)

89. *FAR 52.232-17 INTEREST (JUN 1996)

(a) Except as otherwise provided in this contract under a Price Reduction for Defective Cost or Pricing Data clause or a Cost Accounting Standards clause, all amounts that become payable by the Contractor to the Government under this contract (net of any applicable tax credit under the Internal Revenue Code (26 U.S.C. 1481)) shall bear simple interest from the date due until paid unless paid within 30 days of becoming due. The interest rate shall be the interest rate established by the Secretary of the Treasury as provided in Section 12 of the Contract Disputes Act of 1978 (Public Law 95-563), which is applicable to the period in which the amount becomes due, as

provided in paragraph (b) of this clause, and then at the rate applicable for each six-month period as fixed by the Secretary until the amount is paid.

(b) Amounts shall be due at the earliest of the following dates:

(1) The date fixed under this contract.

(2) The date of the first written demand for payment consistent with this contract, including any demand resulting from a default termination.

(3) The date the Government transmits to the Contractor a proposed supplemental agreement to confirm completed negotiations establishing the amount of debt.

(4) If this contract provides for revision of prices, the date of written notice to the Contractor stating the amount of refund payable in connection with a pricing proposal or a negotiated pricing agreement not confirmed by contract modification.

(c) The interest charge made under this clause may be reduced under the procedures prescribed in 32.614-2 of the Federal Acquisition Regulation in effect on the date of this contract.

90. *FAR 52.232-23 ASSIGNMENT OF CLAIMS (JAN 1986)

(a) The Contractor, under the Assignment of Claims Act, as amended, 31 U.S.C. 3727, 41 U.S.C. 15 (hereafter referred to as "the Act"), may assign its rights to be paid amounts due or to become due as a result of the performance of this contract to a bank, trust company, or other financing institution, including any Federal lending agency. The assignee under such an assignment may thereafter further assign or reassign its right under the original assignment to any type of financing institution described in the preceding sentence.

(b) Any assignment or reassignment authorized under the Act and this clause shall cover all unpaid amounts payable under this contract, and shall not be made to more than one party, except that an assignment or reassignment may be made to one party as agent or trustee for two or more parties participating in the financing of this contract.

(c) The Contractor shall not furnish or disclose to any assignee under this contract any classified document (including this contract) or information related to work under this contract until the Contracting Officer authorizes such action in writing.

91. *FAR 52.232-26 PROMPT PAYMENT FOR FIXED-PRICE ARCHITECT-ENGINEER CONTRACTS (OCT 2003)

Notwithstanding any other payment terms in this contract, the Government will make invoice payments under the terms and conditions specified in this clause. The Government considers payment as being made on the day a check is dated or the date of an electronic funds transfer. Definitions of pertinent terms are set forth in sections 2.101, 32.001, and 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see paragraph (a)(3) of this clause concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) *Invoice payments*—(1) *Due date.* The due date for making invoice payments is—

(i) For work or services completed by the Contractor, the later of the following two events:

(A) The 30th day after the designated billing office receives a proper invoice from the Contractor (except as provided in paragraph (a)(1)(iii) of this clause).

(B) The 30th day after Government acceptance of the work or services completed by the Contractor. For a final invoice, when the payment amount is subject to contract settlement actions (*e.g.,* release of claims), acceptance is deemed to occur on the effective date of the settlement.

(ii) The due date for progress payments is the 30th day after Government approval of Contractor estimates of work or services accomplished.

(iii) If the designated billing office fails to annotate the invoice or payment request with the actual date of receipt at the time of receipt, the payment due date is the 30th day after the date of the Contractor's

invoice or payment request, provided the designated billing office receives a proper invoice or payment request and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(2) *Contractor's invoice.* The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in paragraphs (a)(2)(i) through (a)(2)(x) of this clause. If the invoice does not comply with these requirements, the designated billing office will return it within 7 days after receipt, with the reasons why it is not a proper invoice. When computing any interest penalty owed the Contractor, the Government will take into account if the Government notifies the Contractor of an improper invoice in an untimely manner.

(i) Name and address of the Contractor.

(ii) Invoice date and invoice number. (The Contractor should date invoices as close as possible to the date of mailing or transmission.)

(iii) Contract number or other authorization for work or services performed (including order number and contract line item number).

(iv) Description of work or services performed.

(v) Delivery and payment terms (*e.g.,* discount for prompt payment terms).

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number, and mailing address of person to notify in the event of a defective invoice.

(viii) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(ix) Electronic funds transfer (EFT) banking information.

(A) The Contractor shall include EFT banking information on the invoice only if required elsewhere in this contract.

(B) If EFT banking information is not required to be on the invoice, in order for the invoice to be a proper invoice, the Contractor shall have submitted correct EFT banking information in accordance with the applicable solicitation provision (*e.g.,* 52.232–38, Submission of Electronic Funds Transfer Information with Offer), contract clause (*e.g.,* 52.232–33, Payment by Electronic Funds Transfer—Central Contractor Registration, or 52.232–34, Payment by Electronic Funds Transfer—Other Than Central Contractor Registration), or applicable agency procedures.

(C) EFT banking information is not required if the Government waived the requirement to pay by EFT.

(x) Any other information or documentation required by the contract.

(3) *Interest penalty.* The designated payment office will pay an interest penalty automatically, without request from the Contractor, if payment is not made by the due date and the conditions listed in paragraphs (a)(3)(i) through (a)(3)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday, the designated payment office may make payment on the following working day without incurring a late payment interest penalty.

(i) The designated billing office received a proper invoice.

(ii) The Government processed a receiving report or other Government documentation authorizing payment and there was no disagreement over quantity, quality, Contractor compliance with any contract term or condition, or requested progress payment amount.

(iii) In the case of a final invoice for any balance of funds due the Contractor for work or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(4) *Computing penalty amount.* The Government will compute the interest penalty in accordance with the Office of Management and Budget prompt payment regulations at 5 CFR part 1315.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor, Government acceptance or approval is deemed to occur constructively as shown in paragraphs (a)(4)(i)(A) and (B) of this clause. If actual acceptance or approval occurs within the constructive acceptance or approval period, the Government will base the determination of an interest penalty on the actual date of acceptance or approval. Constructive acceptance or constructive approval requirements do not apply if there is a disagreement over quantity, quality, Contractor compliance with a contract provision, or requested progress payment amounts. These requirements also do not compel Government officials to accept work or services, approve Contractor

estimates, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(A) For work or services completed by the Contractor, Government acceptance is deemed to occur constructively on the 7th day after the Contractor completes the work or services in accordance with the terms and conditions of the contract.

(B) For progress payments, Government approval is deemed to occur on the 7th day after the designated billing office receives the Contractor estimates.

(ii) The prompt payment regulations at 5 CFR 1315.10(c) do not require the Government to pay interest penalties if payment delays are due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. The Government and the Contractor shall resolve claims involving disputes, and any interest that may be payable in accordance with the clause at FAR 52.233–1, Disputes.

(5) *Discounts for prompt payment.* The designated payment office will pay an interest penalty automatically, without request from the Contractor, if the Government takes a discount for prompt payment improperly. The Government will calculate the interest penalty in accordance with 5 CFR part 1315.

(6) *Additional interest penalty*

(i) The designated payment office will pay a penalty amount, calculated in accordance with the prompt payment regulations at 5 CFR part 1315, in addition to the interest penalty amount only if—

(A) The Government owes an interest penalty of $1 or more;

(B) The designated payment office does not pay the interest penalty within 10 days after the date the invoice amount is paid; and

(C) The contractor makes a written demand to the designated payment office for additional penalty payment, in accordance with paragraph (a)(6)(ii) of this clause, postmarked not later than 40 days after the date the invoice amount is paid.

(ii)(A) The Contractor shall support written demands for additional penalty payments with the following data. The Government will not request any additional data. The Contractor shall—

(*1*) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(*2*) Attach a copy of the invoice on which the unpaid late payment interest is due; and

(*3*) State that payment of the principal has been received, including the date of receipt.

(B) If there is no postmark or the postmark is illegible—

(*1*) The designated payment office that receives the demand will annotate it with the date of receipt, provided the demand is received on or before the 40th day after payment was made; or

(*2*) If the designated payment office fails to make the required annotation, the Government will determine the demand's validity based on the date the Contractor has placed on the demand, provided such date is no later than the 40th day after payment was made.

(iii) The additional penalty does not apply to payments regulated by other Government regulations (*e.g.,* payments under utility contracts subject to tariffs and regulation).

(b) *Contract financing payments.* If this contract provides for contract financing, the Government will make contract financing payments in accordance with the applicable contract financing clause.

(c) *Overpayments*. If the Contractor becomes aware of a duplicate contract financing or invoice payment or that the Government has otherwise overpaid on a contract financing or invoice payment, the Contractor shall immediately notify the Contracting Officer and request instructions for disposition of the overpayment.
(End of clause)

92. *FAR 52.232-27 PROMPT PAY FOR CONSTRUCTION CONTRACTS (OCT 2003)

Notwithstanding any other payment terms in this contract, the Government will make invoice payments under the

terms and conditions specified in this clause. The Government considers payment as being made on the day a check is dated or the date of an electronic funds transfer. Definitions of pertinent terms are set forth in sections 2.101, 32.001, and 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see paragraph (a)(3) concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) *Invoice payments*—(1) *Types of invoice payments.* For purposes of this clause, there are several types of invoice payments that may occur under this contract, as follows:

(i) Progress payments, if provided for elsewhere in this contract, based on Contracting Officer approval of the estimated amount and value of work or services performed, including payments for reaching milestones in any project.

(A) The due date for making such payments is 14 days after the designated billing office receives a proper payment request. If the designated billing office fails to annotate the payment request with the actual date of receipt at the time of receipt, the payment due date is the 14th day after the date of the Contractor's payment request, provided the designated billing office receives a proper payment request and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) The due date for payment of any amounts retained by the Contracting Officer in accordance with the clause at 52.232–5, Payments Under Fixed-Price Construction Contracts, is as specified in the contract or, if not specified, 30 days after approval by the Contracting Officer for release to the Contractor.

(ii) Final payments based on completion and acceptance of all work and presentation of release of all claims against the Government arising by virtue of the contract, and payments for partial deliveries that have been accepted by the Government (*e.g.,* each separate building, public work, or other division of the contract for which the price is stated separately in the contract).

(A) The due date for making such payments is the later of the following two events:

(*1*) The 30th day after the designated billing office receives a proper invoice from the Contractor.

(*2*) The 30th day after Government acceptance of the work or services completed by the Contractor. For a final invoice when the payment amount is subject to contract settlement actions (*e.g.,* release of claims), acceptance is deemed to occur on the effective date of the contract settlement.

(B) If the designated billing office fails to annotate the invoice with the date of actual receipt at the time of receipt, the invoice payment due date is the 30th day after the date of the Contractor's invoice, provided the designated billing office receives a proper invoice and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(2) *Contractor's invoice.* The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in paragraphs (a)(2)(i) through (a)(2)(xi) of this clause. If the invoice does not comply with these requirements, the designated billing office must return it within 7 days after receipt, with the reasons why it is not a proper invoice. When computing any interest penalty owed the Contractor, the Government will take into account if the Government notifies the Contractor of an improper invoice in an untimely manner.

(i) Name and address of the Contractor.

(ii) Invoice date and invoice number. (The Contractor should date invoices as close as possible to the date of mailing or transmission.)

(iii) Contract number or other authorization for work or services performed (including order number and contract line item number).

(iv) Description of work or services performed.

(v) Delivery and payment terms (*e.g.,* discount for prompt payment terms).

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number, and mailing address of person to notify in the event of a defective invoice.

(viii) For payments described in paragraph (a)(1)(i) of this clause, substantiation of the amounts requested and certification in accordance with the requirements of the

clause at 52.232–5, Payments Under Fixed-Price Construction Contracts.

(ix) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(x) Electronic funds transfer (EFT) banking information.

(A) The Contractor shall include EFTbanking information on the invoice only if required elsewhere in this contract.

(B) If EFT banking information is not required to be on the invoice, in order for the invoice to be a proper invoice, the Contractor shall have submitted correct EFT banking information in accordance with the applicable solicitation provision (*e.g.,* 52.232–38, Submission of Electronic Funds Transfer Information with Offer), contract clause (*e.g.,* 52.232–33, Payment by Electronic Funds Transfer—Central Contractor Registration, or 52.232–34, Payment by Electronic Funds Transfer—
Other Than Central Contractor Registration), or applicable agency procedures.

(C) EFT banking information is not required if the Government waived the requirement to pay by EFT.

(xi) Any other information or documentation required by the contract.

(3) *Interest penalty.* The designated payment office will pay an interest penalty automatically, without request from the Contractor, if payment is not made by the due date and the conditions listed in paragraphs (a)(3)(i) through (a)(3)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday, the designated payment office may make payment on the following working day without incurring a late payment interest penalty.

(i) The designated billing office received a proper invoice.

(ii) The Government processed a receiving report or other Government documentation authorizing payment and there was no disagreement over quantity, quality, Contractor compliance with any contract term or condition, or requested progress payment amount.

(iii) In the case of a final invoice for any balance of funds due the Contractor for work or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(4) *Computing penalty amount.* The Government will compute the interest penalty in accordance with the Office of Management and Budget prompt payment regulations at 5 CFR part 1315.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor for payments described in paragraph (a)(1)(ii) of this clause, Government acceptance or approval is deemed to occur constructively on the 7th day after the Contractor has completed the work or services in accordance with the terms and conditions of the contract. If actual acceptance or approval occurs within the constructive acceptance or approval period, the Government will base the determination of an interest penalty on the actual date of acceptance or approval. Constructive acceptance or constructive approval requirements do not apply if there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. These requirements also do not compel Government officials to accept work or services, approve Contractor estimates, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The prompt payment regulations at 5 CFR 1315.10(c) do not require the Government to pay interest penalties if payment delays are due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. The Government and the Contractor shall resolve claims involving disputes, and any interest that may be payable in accordance with the clause at FAR 52.233–1, Disputes.

(5) *Discounts for prompt payment.* The designated payment office will pay an interest penalty automatically, without request from the Contractor, if the Government takes a discount for prompt payment improperly. The Government will calculate the interest penalty in accordance with the prompt payment regulations at 5 CFR part 1315.

(6) *Additional interest penalty.* (i) The designated payment office will pay a penalty amount, calculated in accordance with the prompt payment regulations at 5 CFR part 1315 in addition to the interest penalty amount only if—

(A) The Government owes an interest penalty of $1 or more;

(B) The designated payment office does not pay the interest penalty within 10 days after the date the invoice amount is paid; and

(C) The Contractor makes a written demand to the designated payment office for additional penalty payment, in accordance with paragraph (a)(6)(ii) of this clause, postmarked not later than 40 days after the date the invoice amount is paid.

(ii)(A) The Contractor shall support written demands for additional penalty payments with the following data. The Government will not request any additional data. The Contractor shall—

(*1*) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(*2*) Attach a copy of the invoice on which the unpaid late payment interest was due; and

(*3*) State that payment of the principal has been received, including the date of receipt.

(B) If there is no postmark or the postmark is illegible—

(1) The designated payment office that receives the demand will annotate it with the date of receipt provided the demand is received on or before the 40th day after payment was made; or

(*2*) If the designated payment office fails to make the required annotation, the Government will determine the demand's validity based on the date the Contractor has placed on the demand, provided such date is no later than the 40th day after payment was made.

(b) *Contract financing payments.* If this contract provides for contract financing, the Government will make contract financing payments in accordance with the applicable contract financing clause.

(c) *Subcontract clause requirements.* The Contractor shall include in each subcontract for property or services (including a material supplier) for the purpose of performing this contract the following:

(1) *Prompt payment for subcontractors.* A payment clause that obligates the Contractor to pay the subcontractor for satisfactory performance under its subcontract not later than 7 days from receipt of payment out of such amounts as are paid to the Contractor under this contract.

(2) *Interest for subcontractors.* An interest penalty clause that obligates the Contractor to pay to the subcontractor an interest penalty for each payment not made in accordance with the payment clause—

(i) For the period beginning on the day after the required payment date and ending on the date on which payment of the amount due is made; and

(ii) Computed at the rate of interest established by the Secretary of the Treasury, and published in the **Federal Register,** for interest payments under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(3) *Subcontractor clause flowdown.* A clause requiring each subcontractor to

(i) Include a payment clause and an interest penalty clause conforming to the standards set forth in paragraphs (c)(1) and (c)(2) of this clause in each of its subcontracts; and

(ii) Require each of its subcontractors to include such clauses in their subcontracts with each lower-tier subcontractor or supplier.

(d) *Subcontract clause interpretation.* The clauses required by paragraph (c) of this clause shall not be construed to impair the right of the Contractor or a subcontractor at any tier to negotiate, and to include in their subcontract, provisions that—

(1) *Retainage permitted.* Permit the Contractor or a subcontractor to retain (without cause) a specified percentage of each progress payment otherwise due to a subcontractor for satisfactory performance under the subcontract without incurring any obligation to pay a late payment interest penalty, in accordance with terms and conditions agreed to by the parties to the subcontract, giving such recognition as the parties deem appropriate to the ability of a subcontractor to furnish a performance bond and a payment bond;

(2) *Withholding permitted.* Permit the Contractor or subcontractor to make a determination that part or all of the subcontractor's request for payment may be withheld in accordance with the subcontract agreement; and

(3) *Withholding requirements.* Permit such withholding without incurring any obligation to pay a late payment penalty if—

(i) A notice conforming to the standards of paragraph (g) of this clause previously has been furnished to the subcontractor; and

(ii) The Contractor furnishes to the Contracting Officer a copy of any notice issued by a

Contractor pursuant to paragraph (d)(3)(i) of this clause.

(e) *Subcontractor withholding procedures.* If a Contractor, after making a request for payment to the Government but before making a payment to a subcontractor for the subcontractor's performance covered by the payment request, discovers that all or a portion of the payment otherwise due such subcontractor is subject to withholding from the subcontractor in accordance with the subcontract agreement, then the Contractor shall—

(1) *Subcontractor notice.* Furnish to the subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon ascertaining the cause giving rise to a withholding, but prior to the due date for subcontractor payment;

(2) *Contracting Officer notice.* Furnish to the Contracting Officer, as soon as practicable, a copy of the notice furnished to the subcontractor pursuant to paragraph (e)(1) of this clause;

(3) *Subcontractor progress payment reduction.* Reduce the subcontractor's progress payment by an amount not to exceed the amount specified in the notice of withholding furnished under paragraph (e)(1) of this clause;

(4) *Subsequent subcontractor payment.* Pay the subcontractor as soon as practicable after the correction of the identified subcontract performance deficiency, and—

(i) Make such payment within—

(A) Seven days after correction of the identified subcontract performance deficiency (unless the funds therefor must be recovered from the Government because of a reduction under paragraph (e)(5)(i)) of this clause; or

(B) Seven days after the Contractor recovers such funds from the Government; or

(ii) Incur an obligation to pay a late payment interest penalty computed at the rate of interest established by the Secretary of the Treasury, and published in the **Federal Register**, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty;

(5) *Notice to Contracting Officer.* Notify the Contracting Officer upon—

(i) Reduction of the amount of any subsequent certified application for payment; or

(ii) Payment to the subcontractor of any withheld amounts of a progress payment, specifying—

(A) The amounts withheld under paragraph (e)(1) of this clause; and

(B) The dates that such withholding began and ended; and

(6) *Interest to Government.* Be obligated to pay to the Government an amount equal to interest on the withheld payments (computed in the manner provided in 31 U.S.C. 3903(c)(1)), from the 8th day after receipt of the withheld amounts from the Government until—

(i) The day the identified subcontractor performance deficiency is corrected; or

(ii) The date that any subsequent payment is reduced under paragraph (e)(5)(i) of this clause.

(f) *Third-party deficiency reports*—(1) *Withholding from subcontractor.* If a Contractor, after making payment to a first-tier subcontractor, receives from a supplier or subcontractor of the first-tier subcontractor (hereafter referred to as a ''second-tier subcontractor'') a written notice in accordance with section 2 of the Act of August 24, 1935 (40 U.S.C. 270b, Miller Act), asserting a deficiency in such first-tier subcontractor's performance under the contract for which the Contractor may be ultimately liable, and the Contractor determines that all or a portion of future payments otherwise due such first-tier subcontractor is subject to withholding in accordance with the subcontract agreement, the Contractor may, without incurring an obligation to pay an interest penalty under paragraph (e)(6) of this clause—

(i) Furnish to the first-tier subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon making such determination; and

(ii) Withhold from the first-tier subcontractor's next available progress payment or payments an amount not to exceed the amount specified in the notice of withholding furnished under paragraph (f)(1)(i) of this clause.

(2) *Subsequent payment or interest charge.* As soon as practicable, but not later than 7 days after receipt of satisfactory written notification that the identified subcontract performance deficiency has been corrected, the Contractor shall—

(i) Pay the amount withheld under paragraph (f)(1)(ii) of this clause to such first-tier

subcontractor; or

(ii) Incur an obligation to pay a late payment interest penalty to such first-tier subcontractor computed at the rate of interest established by the Secretary of the Treasury, and published in the **Federal Register**, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(g) *Written notice of subcontractor withholding.* The Contractor shall issue a written notice of any withholding to a subcontractor (with a copy furnished to the Contracting Officer), specifying—

(1) The amount to be withheld;

(2) The specific causes for the withholding under the terms of the subcontract; and

(3) The remedial actions to be taken by the subcontractor in order to receive payment of the amounts withheld.

(h) *Subcontractor payment entitlement.* The Contractor may not request payment from the Government of any amount withheld or retained in accordance with paragraph (d) of this clause until such time as the Contractor has determined and certified to the Contracting Officer that the subcontractor is entitled to the payment of such amount.

(i) *Prime-subcontractor disputes.* A dispute between the Contractor and subcontractor relating to the amount or entitlement of a subcontractor to a payment or a late payment interest penalty under a clause included in the subcontract pursuant to paragraph (c) of this clause does not constitute a dispute to which the Government is a party. The Government may not be interpleaded in any judicial or administrative proceeding involving such a dispute.

(j) *Preservation of prime-subcontractor rights.* Except as provided in paragraph (i) of this clause, this clause shall not limit or impair any contractual, administrative, or judicial remedies otherwise available to the Contractor or a subcontractor in the event of a dispute involving late payment or nonpayment by the Contractor or deficient subcontract performance or nonperformance by a subcontractor.

(k) *Non-recourse for prime contractor interest penalty.* The Contractor's obligation to pay an interest penalty to a subcontractor pursuant to the clauses included in a subcontract under paragraph (c) of this clause shall not be construed to be an obligation of the Government for such interest penalty. A cost-reimbursement claim may not include any amount for reimbursement of such interest penalty.

(l) *Overpayments*. If the Contractor becomes aware of a duplicate contract financing or invoice payment or that the Government has otherwise overpaid on a contract financing or invoice payment, the Contractor shall immediately notify the Contracting Officer and request instructions for disposition of the overpayment.
(End of clause)

93. *FAR 52.232-33 PAYMENT BY ELECTRONIC FUNDS TRANSFER –CENTRAL CONTRACTOR REGISTRATION (OCT 2003)

(a) *Method of payment*. (1) All payments by the Government under this contract shall be made by electronic funds transfer (EFT), except as provided in paragraph (a)(2) of this clause. As used in this clause, the term ''EFT'' refers to the funds transfer and may also include the payment information transfer.

(2) In the event the Government is unable to release one or more payments by EFT, the Contractor agrees to either—

(i) Accept payment by check or some other mutually agreeable method of payment; or

(ii) Request the Government to extend the payment due date until such time as the Government can make payment by EFT (but see paragraph (d) of this clause).

(b) *Contractor's EFT information*. The Government shall make payment to the Contractor using the EFT information contained in the Central Contractor Registration (CCR) database. In the event that the EFT information changes, the Contractor shall be responsible for providing the updated information to the CCR database.

(c) *Mechanisms for EFT payment*. The Government may make payment by EFT through either the Automated Clearing House (ACH) network, subject to the rules of the National Automated Clearing House Association, or the Fedwire Transfer System. The rules governing Federal payments through the ACH are contained in 31 CFR part 210.

(d) *Suspension of payment*. If the Contractor's EFT information in the CCR database is incorrect, then the Government need not make payment to the Contractor under this contract until correct EFT information is entered into the CCR database; and any invoice or contract financing request shall be deemed not to be a proper invoice for

the purpose of prompt payment under this contract. The prompt payment terms of the contract regarding notice of an improper invoice and delays in accrual of interest penalties apply.

(e) *Contractor EFT arrangements*. If the Contractor has identified multiple payment receiving points (i.e., more than one remittance address and/or EFT information set) in the CCR database, and the Contractor has not notified the Government of the payment receiving point applicable to this contract, the Government shall make payment to the first payment receiving point (EFT information set or remittance address as applicable) listed in the CCR database.

(f) *Liability for uncompleted or erroneous transfers*. (1) If an uncompleted or erroneous transfer occurs because the Government used
the Contractor's EFT information incorrectly, the Government remains responsible for—

(i) Making a correct payment;

(ii) Paying any prompt payment penalty due; and

(iii) Recovering any erroneously directed funds.

(2) If an uncompleted or erroneous transfer occurs because the Contractor's EFT information was incorrect, or was revised within 30 days of Government release of the EFT payment transaction instruction to the Federal Reserve System, and—

(i) If the funds are no longer under the control of the payment office, the Government is deemed to have made payment and the Contractor is responsible for recovery of any erroneously directed funds; or

(ii) If the funds remain under the control of the payment office, the Government shall not make payment, and the provisions of paragraph (d) of this clause shall apply.

(g) *EFT and assignment of claims*. If the Contractor assigns the proceeds of this contract as provided for in the assignment of claims terms of this contract, the Contractor shall require as a condition of any such assignment, that the assignee shall register separately in the CCR database and shall be paid by EFT in accordance with the terms of this clause. Notwithstanding any other requirement of this contract, payment to an ultimate recipient other than the Contractor, or a financial institution properly recognized under an assignment of claims pursuant to Subpart 32.8, is not permitted. In all respects, the requirements of this clause shall apply to the assignee as if it were the Contractor. EFT information that shows the ultimate recipient of the transfer to be other than the Contractor, in the absence of a proper assignment of claims acceptable to the Government, is incorrect EFT information within the meaning of paragraph
(d) of this clause.

(h) *Liability for change of EFT information by financial agent*. The Government is not liable for errors resulting from changes to EFT information made by the Contractor's financial agent.

(i) *Payment information*. The payment or disbursing office shall forward to the Contractor available payment information that is suitable for transmission as of the date of release of the EFT instruction to the Federal Reserve System. The Government may request the Contractor to designate a desired format and method(s) for delivery of payment information from a list of formats and methods the payment office is capable of executing. However, the Government does not guarantee that any particular format or method of delivery is available at any particular payment office and retains the latitude to use the format and delivery method most convenient to the Government. If the Government makes payment by check in accordance with paragraph (a) of this clause, the Government shall mail the payment information to the remittance address contained in the CCR database.
(End of Clause)

94. DFARS 252.232-7004 DOD PROGRESS PAYMENT RATES (OCT 2001)

(a) If the contractor is a small business concern, the Progress Payments clause of this contract is modified to change each mention of the progress payment rate and liquidation rate (excepting paragraph (k), *Limitations on Undefinitized Contract Actions*) to 90 percent.

(b) If the contractor is a small disadvantaged business concern, the Progress Payments clause of this contract is modified to change each mention of the progress payment rate and liquidation rate (excepting paragraph (k), *Limitations on Undefinitized Contract Actions*) to 95 percent.
(End of clause)

95. DFARS 252.232-7005 REIMBURSEMENT OF SUBCONTRACTOR ADVANCE PAYMENTS--DOD PILOT MENTOR-PROTEGE PROGRAM (SEP 2001)

(a) The Government will reimburse the Contractor for any advance payments made by the Contractor, as a mentor firm, to a protege firm, pursuant to an approved mentor-protege agreement, provided-

(1) The Contractor's subcontract with the protege firm includes a provision substantially the same as FAR 52.232-12, Advance Payments;

(2) The Contractor has administered the advance payments in accordance with the policies of FAR Subpart 32.4; and

(3) The Contractor agrees that any financial loss resulting from the failure or inability of the protege firm to repay any unliquidated advance payments is the sole financial responsibility of the Contractor.

(b) For a fixed price type contract, advance payments made to a protege firm shall be paid and administered as if they were 100 percent progress payments. The Contractor shall include as a separate attachment with each Standard Form (SF) 1443, Contractor's Request for Progress Payment, a request for reimbursement of advance payments made to a protege firm. The attachment shall provide a separate calculation of lines 14a through 14e of SF 1443 for each protege, reflecting the status of advance payments made to that protege.

(c) For cost reimbursable contracts, reimbursement of advance payments shall be made via public voucher. The Contractor shall show the amounts of advance payments made to each protege on the public voucher, in the form and detail directed by the cognizant contracting officer or contract auditor.

(End of clause)

96. *FAR 52.233-1 DISPUTES (JULY 2002)

(a) This contract is subject to the Contract Disputes Act of 1978, as amended (41 U.S.C. 601-613).

(b) Except as provided in the Act, all disputes arising under or relating to this contract shall be resolved under this clause.

(c) “Claim,” as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract. However, a written demand or written assertion by the Contractor seeking the payment of money exceeding $100,000 is not a claim under the Act until certified. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim under the Act. The submission may be converted to a claim under the Act, by complying with the submission and certification requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

(d)(1) A claim by the Contractor shall be made in writing and, unless otherwise stated in this contract, submitted within 6 years after accrual of the claim to the Contracting Officer for a written decision. A claim by the Government against the Contractor shall be subject to a written decision by the Contracting Officer.

(2) (i) Contractors shall provide the certification specified in paragraph (d)(2)(iii) of this clause when submitting any claim exceeding $100,000.

(ii) The certification requirement does not apply to issues in controversy that have not been submitted as all or part of a claim.

(iii) The certification shall state as follows:

'I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the contract adjustment for which the Contractor believes the Government is liable; and that I am duly authorized to certify the claim on behalf of the Contractor.'

(3) The certification may be executed by any person duly authorized to bind the Contractor with respect to the claim.

(e) For Contractor claims of $100,000 or less, the Contracting Officer must, if requested in writing by the Contractor, render a decision within 60 days of the request. For Contractor-certified claims over $100,000, the

Contracting Officer must, within 60 days, decide the claim or notify the Contractor of the date by which the decision will be made.

(f) The Contracting Officer's decision shall be final unless the Contractor appeals or files a suit as provided in the Act.

(g) If the claim by the Contractor is submitted to the Contracting Officer or a claim by the Government is presented to the Contractor, the parties, by mutual consent, may agree to use alternative dispute resolution (ADR). If the Contractor refuses an offer for ADR, the Contractor shall inform the Contracting Officer, in writing, of the Contractor's specific reasons for rejecting the offer.

(h) The Government shall pay interest on the amount found due and unpaid from (1) the date the Contracting Officer receives the claim (certified if required), or (2) the date that payment otherwise would be due, if that date is later, until the date of payment. With regard to claims having defective certifications, as defined in (FAR) 48 CFR 33.201, interest shall be paid from the date that the Contracting Officer initially receives the claim. Simple interest on claims shall be paid at the rate, fixed by the Secretary of the Treasury as provided in the Act, which is applicable to the period during which the Contracting Officer receives the claim and then at the rate applicable for each 6-month period as fixed by the Treasury Secretary during the pendency of the claim.

(i) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under the contract, and comply with any decision of the Contracting Officer.

97. *FAR 52.233-1I DISPUTES (JULY 2002) ALTERNATE I (DEC 1991)

(a) This contract is subject to the Contract Disputes Act of 1978, as amended (41 U.S.C. 601-613).

(b) Except as provided in the Act, all disputes arising under or relating to this contract shall be resolved under this clause.

(c) “Claim,” as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract. However, a written demand or written assertion by the Contractor seeking the payment of money exceeding $100,000 is not a claim under the Act until certified. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim under the Act. The submission may be converted to a claim under the Act, by complying with the submission and certification requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

(d)(1) A claim by the Contractor shall be made in writing and, unless otherwise stated in this contract, submitted within 6 years after accrual of the claim to the Contracting Officer for a written decision. A claim by the Government against the Contractor shall be subject to a written decision by the Contracting Officer.

(2) (i) Contractors shall provide the certification specified in paragraph (d)(2)(iii) of this clause when submitting any claim exceeding $100,000.

(ii) The certification requirement does not apply to issues in controversy that have not been submitted as all or part of a claim.

(iii) The certification shall state as follows: "I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the contract adjustment for which the Contractor believes the Government is liable; and that I am duly authorized to certify the claim on behalf of the Contractor."

(3) The certification may be executed by any person duly authorized to bind the Contractor with respect to the claim.

(e) For Contractor claims of $100,000 or less, the Contracting Officer must, if requested in writing by the Contractor, render a decision within 60 days of the request. For Contractor-certified claims over $100,000, the Contracting Officer must, within 60 days, decide the claim or notify the Contractor of the date by which the decision will be made.

(f) The Contracting Officer's decision shall be final unless the Contractor appeals or files a suit as provided in the Act.

(g) If the claim by the Contractor is submitted to the Contracting Officer or a claim by the Government is presented to the Contractor, the parties, by mutual consent, may agree to use alternative dispute resolution (ADR). If the Contractor refuses an offer for ADR, the Contractor shall inform the Contracting Officer, in writing, of the Contractor's specific reasons for rejecting the offer.

(h) The Government shall pay interest on the amount found due and unpaid from (1) the date that the Contracting Officer receives the claim (certified, if required); or (2) the date that payment otherwise would be due, if that date is later, until the date of payment. With regard to claims having defective certifications, as defined in FAR 33.201, interest shall be paid from the date that the Contracting Officer initially receives the claim. Simple interest on claims shall be paid at the rate, fixed by the Secretary of the Treasury as provided in the Act, which is applicable to the period during which the Contracting Officer receives the claim and then at the rate applicable for each 6-month period as fixed by the Treasury Secretary during the pendency of the claim.

(i) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under or relating to the contract, and comply with any decision of the Contracting Officer. (End of clause)

98. *FAR 52.233-3 PROTEST AFTER AWARD (AUG 1996)

(a) Upon receipt of a notice of protest (as defined in FAR 33.101) or a determination that a protest is likely (see FAR 33.102(d)), the Contracting Officer may, by written order to the Contractor, direct the Contractor to stop performance of the work called for by this contract. The order shall be specifically identified as a stop-work order issued under this clause. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage. Upon receipt of the final decision in the protest, the Contracting Officer shall either--

(1) Cancel the stop-work order; or

(2) Terminate the work covered by the order as provided in the Default, or the Termination for Convenience of the Government, clause of this contract.

(b) If a stop-work order issued under this clause is canceled either before or after a final decision in the protest, the Contractor shall resume work. The Contracting Officer shall make an equitable adjustment in the delivery schedule or contract price, or both, and the contract shall be modified, in writing, accordingly, if--

(1) The stop-work order results in an increase in the time required for, or in the Contractor's cost properly allocable to, the performance of any part of this contract; and

(2) The Contractor asserts its right to an adjustment within 30 days after the end of the period of work stoppage; provided, that if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon a proposal at any time before final payment under this contract.

(c) If a stop-work order is not canceled and the work covered by the order is terminated for the convenience of the Government, the Contracting Officer shall allow reasonable costs resulting from the stop-work order in arriving at the termination settlement.

(d) If a stop-work order is not canceled and the work covered by the order is terminated for default, the Contracting Officer shall allow, by equitable adjustment or otherwise, reasonable costs resulting from the stop-work order.

(e) The Government's rights to terminate this contract at any time are not affected by action taken under this clause.

(f) If, as the result of the Contractor's intentional or negligent misstatement, misrepresentation, or miscertification, a protest related to this contract is sustained, and the Government pays costs, as provided in FAR 33.102(b)(2) or 33.104(h)(1), the Government may require the Contractor to reimburse the Government the amount of such costs. In addition to any other remedy available, and pursuant to the requirements of Subpart 32.6, the Government may collect this debt by offsetting the amount against any payment due the Contractor under any contract between the Contractor and the Government.

99. RESERVED.

100. FAR 52.236-2 DIFFERING SITE CONDITIONS (APR 1984)

(a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of

(1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or

(2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.

(b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this clause and the contract modified in writing accordingly.

(c) No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required, provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.

(d) No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

101. *FAR 52.236-3 SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK (APR 1984)

(a) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to

(1) conditions bearing upon transportation, disposal, handling, and storage of materials;

(2) the availability of labor, water, electric power, and roads;

(3) uncertainties of weather, river stages, tides, or similar physical conditions at the site;

(4) the conformation and conditions of the ground; and

(5) the character of equipment and facilities needed preliminary to and during work performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Government, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Government.

(b) The Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government. Nor does the Government assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

102. *FAR 52.236-5 MATERIAL AND WORKMANSHIP (APR 1984)

(a) All equipment, material, and articles incorporated into the work covered by this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in the specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting

competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.

(b) The Contractor shall obtain the Contracting Officer's approval of the machinery and mechanical and other equipment to be incorporated into the work. When requesting approval, the Contractor shall furnish to the Contracting Officer the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the machinery and mechanical and other equipment. When required by this contract or by the Contracting Officer, the Contractor shall also obtain the Contracting Officer's approval of the material or articles which the Contractor contemplates incorporating into the work. When requesting approval, the Contractor shall provide full information concerning the material or articles. When directed to do so, the Contractor shall submit samples for approval at the Contractor's expense, with all shipping charges prepaid. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

(c) All work under this contract shall be performed in a skillful and workmanlike manner. The Contracting Officer may require, in writing, that the Contractor remove from the work any employee the Contracting Officer deems incompetent, careless, or otherwise objectionable.

103. *FAR 52.236-6 SUPERINTENDENCE BY THE CONTRACTOR (APR 1984)

At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the work site a competent superintendent who is satisfactory to the Contracting Officer and has authority to act for the Contractor.

104. FAR 52.236-7 PERMITS AND RESPONSIBILITIES (NOV 1991)

The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits, and for complying with any Federal, State, and municipal laws, codes, and regulations applicable to the performance of the work. The Contractor shall also be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract.

105. *FAR 52.236-8 OTHER CONTRACTS (APR 1984)

The Government may undertake or award other contracts for additional work at or near the site of the work under this contract. The Contractor shall fully cooperate with the other contractors and with Government employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by Government employees.

106. *FAR 52.236-9 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS (APR 1984)

(a) The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this contract. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.

(b) The Contractor shall protect from damage all existing improvements and utilities

(1) at or near the work site, and

(2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refused to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

107. FAR 52.236-10 OPERATIONS AND STORAGE AREAS (APR 1984)

(a) The Contractor shall confine all operations (including storage of materials) on Government premises to areas authorized or approved by the Contracting Officer. The Contractor shall hold and save the Government, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.

(b) Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the Government. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.

(c) The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

108. *FAR 52.236-11 USE AND POSSESSION PRIOR TO COMPLETION (APR 1984)

(a) The Government shall have the right to take possession of or use any completed or partially completed part of the work. Before taking possession of or using any work, the Contracting Officer shall furnish the Contractor a list of items of work remaining to be performed or corrected on those portions of the work that the Government intends to take possession of or use. However, failure of the Contracting Officer to list any item of work shall not relieve the Contractor of responsibility for complying with the terms of the contract. The Government's possession or use shall not be deemed an acceptance of any work under the contract.

(b) While the Government has such possession or use, the Contractor shall be relieved of the responsibility for the loss of or damage to the work resulting from the Government's possession or use, notwithstanding the terms of the clause in this contract entitled "Permits and Responsibilities." If prior possession or use by the Government delays the progress of the work or causes additional expense to the Contractor, an equitable adjustment shall be made in the contract price or the time of completion, and the contract shall be modified in writing accordingly.

109. *FAR 52.236-12 CLEANING UP (APR 1984)

The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. Before completing the work, the Contractor shall remove from the work and premises any rubbish, tools, scaffolding, equipment, and materials that are not the property of the Government. Upon completing the work, the Contractor shall leave the work area in a clean, neat, and orderly condition satisfactory to the Contracting Officer.

110. *FAR 52.236-13 ACCIDENT PREVENTION-ALTERNATE I (NOV 1991)

(a) The Contractor shall provide and maintain work environments and procedures which will (1) safeguard the public and Government personnel, property, materials, supplies, and equipment exposed to Contractor operations and activities; (2) avoid interruptions of Government operations and delays in project completion dates; and (3) control costs in the performance of this contract.

(b) For these purposes on contracts for construction or dismantling, demolition, or removal of improvements, the Contractor shall--

(1) Provide appropriate safety barricades, signs, and signal lights;

(2) Comply with the standards issued by the Secretary of Labor at 29 CFR Part 1926 and 29 CFR Part 1910; and

(3) Ensure that any additional measures the Contracting Officer determines to be reasonably necessary for the purposes are taken.

(c) If this contract is for construction or dismantling, demolition or removal of improvements with any Department of Defense agency or component, the Contractor shall comply with all pertinent provisions of the latest version of U.S. Army Corps of engineers Safety and Health Requirements Manual, EM 385-1-1, in effect on the date of the solicitation.

(d) Whenever the Contracting Officer becomes aware of any noncompliance with these requirements or any condition which poses a serious or imminent danger to the health or safety of the public or Government personnel, the Contracting Officer shall notify the Contractor orally, with written confirmation, and request immediate initiation of corrective action. This notice, when delivered to the Contractor or the Contractor's representative at the work site, shall be deemed sufficient notice of the noncompliance and that corrective action is required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to promptly take corrective action, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not be entitled to any equitable adjustment of the contract price or extension of the performance schedule on any stop work order issued under this clause.

(e) The Contractor shall insert this clause, including this paragraph (e), with appropriate changes in the designation of the parties, in subcontractors.

(f) Before commencing the work, the Contractor shall--

(1) Submit a written proposed plan for implementing this clause. The plan shall include an analysis of the significant hazards to life, limb, and property inherent in contract work performance and a plan for controlling these hazards; and

(2) Meet with representatives of the Contracting Officer to discuss and develop a mutual understanding relative to administration of the overall safety program.

111. *FAR 52.236-14 AVAILABILITY AND USE OF UTILITY SERVICES (APR 1984)

(a) The Government shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract. Unless otherwise provided in the contract, the amount of each utility service consumed shall be charged to or paid for by the Contractor at prevailing rates charged to the Government or, where the utility is produced by the Government, at reasonable rates determined by the Contracting Officer. The Contractor shall carefully conserve any utilities furnished without charge.

(b) The Contractor, at its expense and in a workmanlike manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used for the purpose of determining charges. Before final acceptance of the work by the Government, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

112. FAR 52.236-15 SCHEDULES FOR CONSTRUCTION CONTRACTS (APR 1984)

(a) The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring materials, plant, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments until the Contractor submits the required schedule.

(b) The Contractor shall enter the actual progress on the chart as directed by the Contracting Officer, and upon doing so shall immediately deliver three copies of the annotated schedule to the Contracting Officer. If, in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.

(c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of this contract.

113. *FAR 52.236-17 LAYOUT OF WORK (APR 1984)

The Contractor shall lay out its work from Government-established base lines and bench marks indicated on the drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due or to become due to the Contractor.

114. FAR 52.236-21 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FEB 1997)

(a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

(b) Wherever in the specifications or upon the drawings the words "directed," "required," "ordered," "designated," "prescribed," or words of like import are used, it shall be understood that the "direction," "requirement," "order," "designation," or "prescription," of the Contracting Officer is intended and similarly the words "approved," "acceptable," "satisfactory," or words of like import shall mean "approved by," or "acceptable to," or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.

(c) Where "as shown," "as indicated," "as detailed," or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provide complete in place," that is "furnished and installed."

(d) Shop drawings means drawings, submitted to the Government by the Contractor, subcontractor, or any lower tier subcontractor pursuant to a construction contract, showing in detail

(1) the proposed fabrication and assembly of structural elements, and

(2) the installation (i.e., fit, and attachment details) of materials or equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the Contractor to explain in detail specific portions of the work required by the contract. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the Government's reasons therefor. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.

(f) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such variation, the Contracting Officer shall issue an appropriate contract modification, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.

(g) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated) of all shop drawings, will be retained by the Contracting Officer and one set will be returned to the Contractor.

115. *FAR 52.236-23 RESPONSIBILITY OF THE ARCHITECT-ENGINEER CONTRACTOR (APR 1984)

(a) The Contractor shall be responsible for the professional quality, technical accuracy, and the coordination of all designs, drawings, specifications, and other services furnished by the Contractor under this contract. The Contractor shall, without additional compensation, correct or revise any errors or deficiencies in its designs, drawings, specifications, and other services.

(b) Neither the Government's review, approval or acceptance of, nor payment for, the services required under this contract shall be construed to operate as a waiver of any rights under this contract or of any cause of action arising out of the performance of this contract, and the Contractor shall be and remain liable to the Government in accordance with applicable law for all damages to the Government caused by the Contractor's negligent performance of any of the services furnished under this contract.

(c) The rights and remedies of the Government provided for under this contract are in addition to any other rights and remedies provided by law.

(d) If the Contractor is comprised of more than one legal entity, each such entity shall be jointly and severally liable hereunder. (End of clause)

116. *FAR 52.236-24 WORK OVERSIGHT IN ARCHITECT-ENGINEER CONTRACTS (APR 1984)

The extent and character of the work to be done by the Contractor shall be subject to the general oversight, supervision, direction, control, and approval of the Contracting Officer. (End of clause)

117. *FAR 52.236-25 REQUIREMENTS FOR REGISTRATION OF DESIGNERS (JUNE 2003)

Architects or engineers registered to practice in the particular professional field involved in a State, the District of Columbia, or an outlying area of the United States shall prepare or review and approve the design of architectural, structural, mechanical, electrical, civil, or other engineering features of the work. (End of clause)

118. *FAR 52.236-26 PRECONSTRUCTION CONFERENCE (FEB 1995)

If the Contracting Officer decides to conduct a preconstruction conference, the successful offeror will be notified and will be required to attend. The Contracting Officer's notification will include specific details regarding the date, time, and location of the conference, any need for attendance by subcontractors, and information regarding the items to be discussed.

119. DFARS 252.236-7000 MODIFICATION OF PROPOSALS - PRICE BREAKDOWN (DEC 1991)

(a) The Contractor shall furnish a price breakdown, itemized as required and within the time specified by the Contracting Officer, with any proposal for a contract modification.

(b) The price breakdown--

(1) Must include sufficient detail to permit an analysis of profit, and of all costs for--

(i) Material;

(ii) Labor,

(iii) Equipment;

(iv) Subcontracts; and

(2) Most cover all work involved in the modification, whether the work was deleted, added, or changed.

(c) The Contractor shall provide similar price breakdowns to support any amounts claimed for subcontracts.

(d) The Contractor's proposal shall include a justification for any time extension proposed.

120. *FAR 52.242-13 BANKRUPTCY (JUL 1995)

In the event the Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, the Contractor agrees to furnish, by certified mail or electronic commerce method authorized by the contract, written notification of the bankruptcy to the Contracting Officer responsible for administering the contract. This notification shall be furnished within five days of the initiation of the proceedings relating to bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in which the bankruptcy petition was filed, and a listing of Government contract numbers and contracting offices for all Government contracts against which final payment has not been made. This obligation remains in effect until final payment under this contract.

121. *FAR 52.242-14 SUSPENSION OF WORK (APR 1984)

(a) The Contracting Officer may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the Government.

(b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted (1) by an act of the Contracting Officer in the administration of this contract, or (2) by the Contracting Officer's failure to act within the time specified in this contract (or within a reasonable time if not specified), an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit)

necessarily caused by the unreasonable suspension, delay, or interruption, and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor, or for which an equitable adjustment is provided for or excluded under any other term or condition of this contract.

(c) A claim under this clause shall not be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order), and (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

122. DFARS 252.242-7005 COST/SCHEDULE STATUS REPORT (MAR 1998)

(a) The Contractor shalluse management procedures in the performance of this contract that provide for--

(1) Planning and control of costs;

(2) Measurement of performance (value for completed tasks); and

(3) Generation of timely and reliable information for the cost/schedule status report (C/SSR).

(b) As a minimum, these procedures must provide for--

(1) Establishing the time-phased budgeted cost of work scheduled (including work authorization, budgeting, and scheduling), the budgeted cost for work performed, the actual cost of work performed, the budget at completion, the estimate at completion, and provisions for subcontractor performance measurement and reporting;

(2) Applying all direct and indirect costs and provisions for use and control of management reserve and undistributed budget;

(3) Incorporating changes to the contract budget base for both Government directed changes and internal replanning;

(4) Establishing constraints to preclude subjective adjustment of data to ensure performance measurement remains realistic. The total allocated budget may exceed the contract budget base only after consultation with the Contracting Officer. For cost-reimbursement contracts, the contract budget base shall exclude changes for cost growth increases, other than for authorized changes to the contract scope; and

(5) Establishing the capability to accurately identify and explain significant cost and schedule variances, both on a cumulative basis and projected at completion basis.

(c) The Offeror/Contractor may use a cost/schedule control system that has been recognized by the congnizant Administrative Contracting Officer (ACO) as complying with the earned value management system criteria provided in DoD 5000.2-R, Manadatory Procedures for Major Defense Acquisition Programs (MDAPs) and Major Automated Information System (MAIS) Acquisition Programs.

(d) The Government may require integrated baseline reviews. Such reviews shallbe scheduled as early as practicable and should be conducted within 180 calendar days after (1) contract award, (2) the exercise of significant contract options, or (3) the incorporation of major modifications. The objective of the integrated baseline review is for the Government and the Contractor to jointly assess areas, such as the Contractor's planning, to ensure complete coverage of the statement of work, logical scheduling of the work activities, adequate resourcing, and identification of inherent risks.

(e) The Contractor shall provide access to all pertinent records, company procedures, and data requested by the Contracting Officer, or authorized representative, to--

(1) Show proper implementation of the procedures generating the cost schedule information being used to satisfy the C/SSR contractual data requirements to the Government; and

(2) Ensure continuing application of the accepted company procedures in satisfying the C/SSR data item.

(f) The Contractor shall submit any substantive changes to the procedures and their impact to the ACO for review.

(g) The Contractor shall require a subcontractor to furnish C/SSR in each case where the subcontract is other than firm fixed-price, is 12 months or more in duration, and has critical or significant tasks related to the prime contract. Critical or significant tasks shall be defined by mutual agreement between the Government and

Contractor. Each subcontractor's reported cost and schedule information shall be incorporated into the Contractor's C/SSR.
(End of clause)

123. *FAR 52.243-1 CHANGES--FIXED-PRICE (AUG 1987) ALTERNATE III (AUG 1984)

(a) The Contracting Officer may at any time, by written order, and without notice to the sureties, if any, make changes within the general scope of this contract in the services to be performed.

(b) If any such change causes an increase or decrease in the cost of, or the time required for, performance of any part of the work under this contract, whether or not changed by the order, the Contracting Officer shall make an equitable adjustment in the contract price, the delivery schedule, or both, and shall modify the contract.

(c) The Contractor must assert its right to an adjustment under this clause within 30 days from the date of receipt of the written order. However, if the Contracting Officer decides that the facts justify it, the Contracting Officer may receive and act upon a proposal submitted before final payment of the contract.

(d) If the Contractor's proposal includes the cost of property made obsolete or excess by the change, the Contracting Officer shall have the right to prescribe the manner of the disposition of the property.

(e) Failure to agree to any adjustment shall be a dispute under the Disputes clause. However, nothing in this clause shall excuse the Contractor from proceeding with the contract as changed.

(f) No services for which an additional cost or fee will be charged by the Contractor shall be furnished without the prior written authorization of the Contracting Officer. (End of clause)

124. FAR 52.243-4 CHANGES (AUG 1987)

(a) The Contracting Officer may, at any time, without notice to the sureties, if any, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract, including changes--

(1) In the specifications (including drawings and designs);
(2) In the method or manner of performance of the work;
(3) In the Government-furnished facilities, equipment, materials, services, or site; or
(4) Directing acceleration in the performance of the work.

(b) Any other written or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating

(1) the date, circumstances, and source of the order and
(2) that the Contractor regards the order as a change order.

(c) Except as provided in this clause, no order, statement, or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.

(d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for an adjustment based on defective specifications, no adjustment for any change under paragraph (b) of this clause shall be made for any costs incurred more than 20 days before the Contractor gives written notice as required. In the case of defective specifications for which the Government is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.

(e) The Contractor must assert its right to an adjustment under this clause within 30 days after

(1) receipt of a written change order under paragraph (a) of this clause or
(2) the furnishing of a written notice under paragraph (b) of this clause, by submitting to the Contracting Officer a written statement describing the general nature and amount of the proposal, unless this period is extended by the Government. The statement of proposal for adjustment may be included in the notice under paragraph (b) above.

(f) No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.

125. DFARS 252.243-7001 PRICING OF CONTRACT MODIFICATIONS (DEC 1991)

When costs are a factor in any price adjustment under this contract, the contract cost principles and procedures in FAR Part 31 and DRARS Part 231, in effect on the date of this contract, apply.

126. DFARS 252.243-7002 REQUESTS FOR EQUITABLE ADJUSTMENT (MAR 1998)

(a) The amount of any request for equitable adjustment to contract terms shall accurately reflect the contract adjustment for which the Contractor believes the Government is liable. The request shall include only costs for performing the change, and shall not include any costs that already have been reimbursed or that have been separately claimed. All indirect costs included in the request shall be properly allocable to the change in accordance with applicable acquisition regulations.

(b)In accordance with 10 U.S.C. 2410(a), any request for equitable adjustment to contract terms that exceeds the simplified acquisition threshold shall bear, at the time of submission, the following certificate executed by an individual authorized to certify the request on behalf of the Contractor:
I certify that the request is made in good faith, and that the supporting data are accurate and complete to the best of may knowledge and belief.

(Official's Name)

(Title)

(c) The certification in paragraph (b) of this clause requires full disclosure of all relevant facts, including--

(1) Cost or pricing data if required in accordance with subsection 15.403-4 of the Federal Acquisition Regulation; and

(2) Information other than cost or pricing data, in accordance with subsection 15.403-3 of the FAR, including actual cost data and data to support any estimated costs, even if cost or pricing data are not required.

(d) The certification requirement in paragraph (b) of this clause does not apply to----

(1) Requests for routine contract payments; for example, requests for payment for accepted supplies and services, routine vouchers under a cost-reimbursement type contract, or progress payment invoices; or

(2) Final adjustment under an incentive provision of the contract.

(End of clause)

127. *FAR 52.244-2 SUBCONTRACTS (AUG 1998)

(a) Definitions. As used in this clause--

"Approved purchasing system" means a Contractor's purchasing system that has been reviewed and approved in accordance with Part 44 of the Federal Acquistion Regulation (FAR).

"Consent of subcontract" means the Contracting Officer's written consent for the Contractor to enter into a particular subcontract.

"Subcontract," means any contract, as defined in FAR Subpart 2.1, entered into by a subcontractor to furnish supplies or sevices for performance of the the prime contract or a subcontract. It includes, but is not limited to purchase orders, and changes and modifications to purchase orders.

(b) This clause does not apply to subcontracts for special test equipment when the contract contains the clause at FAR 52.245-18, Special Test Equipment.

(c) When this clause is included in a fixed-price type contract, consent to subcontract is required only on unpriced contract actions (including unpriced modification or unpriced delivery orders), and only if required in accordance with paragraph (d) or (e) of this clause.

(d) If the Contractor does not have an approved purchasing system, consent to subcontract is required for any subcontract that--

(1) Is of the cost-reimbursement, time-and-materials, or labor-hour type; or

(2) Is fixed-price and exceeds--

(i) For a contract awarded by the Department of Defense, the Coast Guard, or the National Aeronautics and Space Administration, the greater of the simplified theshold or 5 percent of the total estimated cost of the contract; or

(ii) For a contract awarded by a civilian agency other that the Coast Guard and the National Aeronautics and Space Administration, either the the simplified theshold or 5 percent of the total estimated cost of the contract.

(e) If the Contractor has an approved purchasing system, the Contractor nevertheless shall obtain the Contracting Officer's written consent before placing the following subcontracts:

_____
_____
_____

(f)(1) The Contractor shall notify the Contracting Officer reasonably in advance of placing any subcontract or modification thereof for which consent is required under paragraph (c), (d), or (e) of this clause, including the following information:

(i) A description of the supplies or services to be subcontracted.

(ii) Identification of the type of subcontract to be used.

(iii) Identification of the proposed subcontractor.

(iv) The proposed subcontract price.

(v) The subcontractor's current, complete, and accurate cost or pricing data and Certificate of Current Cost or Pricing Data, if required by other contract provisions.

(vi) The subcontractor's Disclosure Statement or Certificate relating to Cost Accounting Standards when such data are required by other provisions of this contract.

(vii) A negotiation memorandum reflecting--

(A) The principal elements of the subcontract price negotiations;

(B) The most significant considerations controlling establishment of initial or revised prices;

(C) The reason cost or pricing data were or were not required;

(D) The extent, if any, to which the Contractor did not rely on the subcontractor's cost or pricing data in determining the price objective and in negotiating the final price;

(E) The extent to which it was recognized in the negotiation that the subcontractor's cost or pricing data were not accurate, complete, or current; the action taken by the Contractor and subcontractor; and the effect of any such defective data on the total price negotiated;

(F) The reasons for any significant difference between the Contractor's price objective and the price negotiated; and

(G) A complete explanation of the incentive fee or profit plan when incentives are used. The explanation shall identify each critical performance element, management decisions used to quantify each incentive element, reasons for the incentives, and a summary of all trade-off possibilities considered.

(2) The Contractor is not required to notify the Contracting Officer in advance of entering into any subcontract for which consent is not required under paragraph (c), (d), or (e) of this clause.

(g) Unless the consent or approval specifically provides otherwise, neither consent by the Contracting Officer to any subcontract nor approval of the Contractor's purchasing system shall constitute a determination--

(1) Of the acceptability of any subcontract terms or conditions;

(2) Of the acceptability of any cost under this contract; or

(3) To relieve the Contractor of any responsibility for performing this contract.

(h) No subcontract or modification thereof placed under this contract shall provide for payment on a cost-plus-a-percentage-of-cost basis, and any fee payable under cost-reimbursement subcontracts shall not exceed the fee limitations in FAR 15.404-4(c)(4)(i).

(i) The Contractor shall give the Contracting Officer immediate written notice of any action or suit filed and prompt notice of any claim made against the Contractor by any subcontractor or vendor that, in the opinion of the Contractor, may result in litigation related in any way to this contract, with respect to which the Contractor may be entitled to reimbursement by the Government.

(j) The Government reserves the right to review the Contractor's purchasing system as set forth in FAR Subpart 44.3.

(k) Paragraphs (d) and (f) of this clause do not apply to the following subcontracts, which ere evaluated during negotiations:

_____

_____

_____

(End of clause)

128. *FAR 52.244-4 SUBCONTRACTORS AND OUTSIDE ASSOCIATES AND CONSULTANTS (ARCHITECT-ENGINEER SERVICES) (AUG 1998)

Any subcontractors and outside associates or consultants required by the Contractor in connection with the services covered by the contract will be limited to individuals or firms that were specifically identified and agreed to during negotiations. The Contractor shall obtain the Contracting Officer's written consent before making any substitution for these subcontractors, associates, or consultants. (End of clause)

129. FAR 52.244-6 SUBCONTRACTS FOR COMMERCIAL ITEMS (JULY 2004)

(a) *Definitions.* As used in this clause—

"Commercial item" has the meaning contained in Federal Acquisition Regulation 2.101, Definitions.

"Subcontract" includes a transfer of commercial items between divisions, subsidiaries, or affiliates of the Contractor or subcontractor at any tier.

(b) To the maximum extent practicable, the Contractor shall incorporate, and require its subcontractors at all tiers to incorporate, commercial items or nondevelopmental items as components of items to be supplied under this contract.

(c)(1) The Contractor shall insert the following clauses in subcontracts for commercial items:

(i) 52.219-8, Utilization of Small Business Concerns (May 2004) (15 U.S.C. 637(d)(2) and (3)), in all subcontracts that offer further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceeds $500,000 ($1,000,000 for construction of any public facility), the subcontractor must include 52.219-8 in lower tier subcontracts that offer subcontracting opportunities.

(ii) 52.222-26, Equal Opportunity (Apr 2002) (E.O. 11246).

(iii) 52.222-35, Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (Dec 2001) (38 U.S.C. 4212(a));

(iv) 52.222-36, Affirmative Action for Workers with Disabilities (June 1998) (29 U.S.C. 793).

(v) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (APR 2003) (46 U.S.C. Appx 1241 and 10 U.S.C. 2631) (flow down required in accordance with paragraph (d) of FAR clause 52.247-64).

(2) While not required, the Contractor may flow down to subcontracts for commercial items a minimal number of additional clauses necessary to satisfy its contractual obligations.

(d) The Contractor shall include the terms of this clause, including this paragraph (d), in subcontracts awarded under this contract. (End of clause)

130. *FAR 52.245-2 GOVERNMENT PROPERTY (FIXED-PRICE CONTRACTS) (MAY 2004) [<u>For Government Property over $100,000</u>]

(a) Government-furnished property.

(1) The Government shall deliver to the Contractor, for use in connection with and under the terms of this contract, the Government-furnished property described in the Schedule or specifications together with any related data and information that the Contractor may request and is reasonably required for the intended use of the property (hereinafter referred to as "Government-furnished property").

(2) The delivery or performance dates for this contract are based upon the expectation that Government-furnished property suitable for use (except for property furnished "as is") will be delivered to the Contractor at the times stated in the Schedule or, if not so stated, in sufficient time to enable the Contractor to meet the contract's delivery or performance dates.

(3) If Government-furnished property is received by the Contractor in a condition not suitable for the intended use, the Contractor shall, upon receipt of it, notify the Contracting Officer, detailing the facts, and, as directed by the Contracting Officer and at Government expense, either repair, modify, return, or otherwise dispose of the property. After completing the directed action and upon written request of the Contractor, the Contracting Officer shall make an equitable adjustment as provided in paragraph (h) of this clause.

(4) If Government-furnished property is not delivered to the Contractor by the required time, the Contracting Officer shall, upon the Contractor's timely written request, make a determination of the delay, if any, caused the Contractor and shall make an equitable adjustment in accordance with paragraph (h) of this clause.

(b) Changes in Government-furnished property.

(1) The Contracting Officer may, by written notice,

(i) decrease the Government-furnished property provided or to be provided under this contract, or

(ii) substitute other Government-furnished property for the property to be provided by the Government, or to be acquired by the Contractor for the Government, under this contract. The Contractor shall promptly take such action as the Contracting Officer may direct regarding the removal, shipment, or disposal of the property covered by such notice.

(2) Upon the Contractor's written request, the Contracting Officer shall make an equitable adjustment to the contract in accordance with paragraph (h) of this clause, if the Government has agreed in the Schedule to make the property available for performing this contract and there is any--

(i) Decrease or substitution in this property pursuant to subparagraph (b)(1) above; or

(ii) Withdrawal of authority to use this property, if provided under any other contract or lease.

(c) Title in Government property. (1) The Government shall retain title to all Government-furnished property.

(2) All Government-furnished property and all property acquired by the Contractor, title to which vests in the Government under this paragraph (collectively referred to as "Government property"), are subject to the provisions of this clause. However, special tooling accountable to this contract is subject to the provisions of the Special Tooling clause and is not subject to the provisions of this clause. Title to Government property shall not be affected by its incorporation into or attachment to any property not owned by the Government, nor shall government property become a fixture or lose its identity as personal property by being attached to any real property.

(3) Title to each item of facilities and special test equipment acquired by the Contractor for the Government under this contract shall pass to and vest in the Government when its use in performing this contract commences or when the Government has paid for it, whichever is earlier, whether or not title previously vested in the Government.

(4) If this contract contains a provision directing the Contractor to purchase material for which the Government will reimburse the Contractor as a direct item of cost under this contract--

(i) Title to material purchased from a vendor shall pass to and vest in the Government upon the vendor's delivery of such material; and

(ii) Title to all other material shall pass to and vest in the Government upon--

(A) Issuance of the material for use in contract performance;

(B) Commencement of processing of the material or its use in contract performance; or

(C) Reimbursement of the cost of the material by the Government, whichever occurs first.

(d) Use of Government property. The Government property shall be used only for performing this contract, unless otherwise provided in this contract or approved by the Contracting Officer.

(e) Property Administration.

(1) The Contractor shall be responsible and accountable for all Government property provided under this contract and shall comply with Federal Acquisition Regulation (FAR) Subpart 45.5, as in effect on the date of this contract.

(2) The Contractor shall establish and maintain a program for the use, maintenance, repair, protection, and preservation of Government property in accordance with sound industrial practice and the applicable provisions of Subpart 45.5 of the FAR.

(3) If damage occurs to Government property, the risk of which has been assumed by the Government under this contract, the Government shall replace the items or the Contractor shall make such repairs as the Government directs. However, if the Contractor cannot effect such repairs within the time required, the Contractor shall dispose of the property as directed by the Contracting Officer. When any property for which the Government is responsible is replaced or repaired, the Contracting Officer shall make an equitable adjustment in accordance with paragraph (h) of this clause.

(4) The Contractor represents that the contract price does not include any amount for repairs or replacement for which the Government is responsible. Repair or replacement of property for which the Contractor is responsible shall be accomplished by the Contractor at its own expense.

(f) Access. The Government and all its designees shall have access at all reasonable times to the premises in which any Government property is located for the purpose of inspecting the Government property.

(g) Risk of loss. Unless otherwise provided in this contract, the Contractor assumes the risk of, and shall be responsible for, any loss or destruction of, or damage to, Government property upon its delivery to the Contractor or upon passage of title to the Government under paragraph (c) of this clause. However, the Contractor is not responsible for reasonable wear and tear to Government property or for Government property properly consumed in performing this contract.

(h) Equitable adjustment. When this clause specifies an equitable adjustment, it shall be made to any affected contract provision in accordance with the procedures of the Changes clause. When appropriate, the Contracting Officer may initiate an equitable adjustment in favor of the Government. The right to an equitable adjustment shall be the Contractor's exclusive remedy. The Government shall not be liable to suit for breach of contract for--

(1) Any delay in delivery of Government-furnished property;

(2) Delivery of Government-furnished property in a condition not suitable for its intended use;

(3) A decrease in or substitution of Government-furnished property; or

(4) Failure to repair or replace Government property for which the Government is responsible.

(i) *Government property disposal*. Except as provided in paragraphs (i)(1)(i), (i)(2), and (i)(8)(i) of this clause, the Contractor shall not dispose of Government property until authorized to do so by the Plant Clearance Officer.

(1) *Scrap (to which the Government has obtained title under paragraph (c) of this clause)*.—

(i) *Contractor with an approved scrap procedure*.—(A) The Contractor may dispose of scrap resulting from production or testing under this contract without Government approval. However, if the scrap requires demilitarization or is sensitive property, the Contractor shall submit the scrap on an inventory disposal schedule.

(B) For scrap from other than production or testing the Contractor may prepare scrap lists in lieu of inventory disposal schedules (provided such lists are consistent with the approved scrap procedures), except that inventory disposal schedules shall be submitted for scrap aircraft or aircraft parts and scrap that—

(1) Requires demilitarization;
(2) Is a classified item;
(3) Is generated from classified items;
(4) Contains hazardous materials or hazardous wastes;
(5) Contains precious metals; or
(6) Is dangerous to the public health, safety, or welfare.

(ii) *Contractor without an approved scrap procedure*. The Contractor shall submit an inventory disposal schedule for all scrap.

(2) *Pre-disposal requirements*. When the Contractor determines that a property item acquired or produced by the Contractor, to which the Government has obtained title under paragraph (c) of this clause, is no longer needed for performance of this contract, the Contractor, in the following order of priority:

(i) May purchase the property at the acquisition cost.

(ii) Shall make reasonable efforts to return unused property to the appropriate supplier at fair market value (less, if applicable, a reasonable restocking fee that is consistent with the supplier's customary practices).

(iii) Shall list, on Standard Form 1428, Inventory Disposal Schedule, property that was not purchased under paragraph (i)(2)(i) of this clause, could not be returned to a supplier, or could not be used in the performance of other Government contracts.

(3) *Inventory disposal schedules*.—(i) The Contractor shall use Standard Form 1428, Inventory Disposal Schedule, to identify—

(A) Government-furnished property that is no longer required for performance of this contract, provided the terms of another Government contract do not require the Government to furnish that property for performance of that contract; and

(B) Property acquired or produced by the Contractor, to which the Government has obtained title under paragraph (c) of this clause, that is no longer required for performance of that contract.

(ii) The Contractor may annotate inventory disposal schedules to identify property the Contractor wishes to purchase from the Government.

(iii) Unless the Plant Clearance Officer has agreed otherwise, or the contract requires electronic submission of inventory disposal schedules, the Contractor shall prepare separate inventory disposal schedules for—

(A) Special test equipment with commercial components;
(B) Special test equipment without commercial components;
(C) Printing equipment;
(D) Computers, components thereof, peripheral equipment, and related equipment;
(E) Precious Metals;

(F) Nonnuclear hazardous materials or hazardous wastes; or
(G) Nuclear materials or nuclear wastes.

(iv) Property with the same description, condition code, and reporting location may be grouped in a single line item. The Contractor shall describe special test equipment in sufficient detail to permit an understanding of the special test equipment's intended use.

(4) *Submission requirements*. The Contractor shall submit inventory disposal schedules to the Plant Clearance Officer no later than—

(i) Thirty days following the Contractor's determination that a Government property item is no longer required for performance of the contract;

(ii) Sixty days, or such longer period as may be approved by the Plant Clearance Officer, following completion of contract deliveries or performance; or

(iii) One hundred twenty days, or such longer period as may be approved by the Plant Clearance Officer, following contract termination in whole or in part.

(5) *Corrections*. The Plant Clearance Officer may require the Contractor to correct an inventory disposal schedule or may reject a schedule if the property identified on the schedule is not accountable under this contract or is not in the quantity or condition indicated.

(6) *Postsubmission adjustments*. The Contractor shall provide the Plant Clearance Officer at least 10 working days advance written notice of its intent to remove a property item from an approved inventory disposal schedule. Unless the Plant Clearance Officer objects to the intended schedule adjustment within the notice period, the Contractor may make the adjustment upon expiration of the notice period.

(7) *Storage*.—(i) The Contractor shall store the property identified on an inventory disposal schedule pending receipt of disposal instructions. The Government's failure to provide disposal instructions within 120 days following acceptance of an inventory disposal schedule might entitle the Contractor to an equitable adjustment for costs incurred to store such property on or after the 121st day.

(ii) The Contractor shall obtain the Plant Clearance Officer's approval to remove Government property from the premises at which the property is currently located prior to receipt of final disposition instructions. If approval is granted, any costs incurred by the Contractor to transport or store the property shall not increase the price or fee of any Government contract. The storage facility shall be appropriate for assuring the property's physical safety and suitability for use. Approval does not relieve the Contractor of any liability under this contract for such property.

(8) *Disposition instructions*.—(i) If the Government does not provide disposition instructions to the Contractor within 45 days following acceptance of a scrap list, the Contractor may dispose of the listed scrap in accordance with the Contractor's approved scrap procedures.

(ii) The Contractor shall prepare for shipment, deliver f.o.b. origin, or dispose of Government property as directed by the Plant Clearance Officer. The Contractor shall remove and destroy any markings identifying the property as Government property prior to disposing of the property.

(iii) The Contracting Officer may require the Contractor to demilitarize the property prior to shipment or disposal. Any equitable adjustment incident to the Contracting Officer's direction to demilitarize Government property shall be made in accordance with paragraph (h) of this clause.

(9) *Disposal proceeds*. The Contractor shall credit the net proceeds from the disposal of Government property to the price or cost of work covered by this contract or to the Government as the Contracting Officer directs.

(10) *Subcontractor inventory disposal schedules*. The Contractor shall require a subcontractor that is using property accountable under this contract at a subcontractor-managed site to submit inventory disposal

schedules to the Contractor in sufficient time for the Contractor to comply with the requirements of paragraph (i)(4) of this clause.

(j) *Abandonment of Government property*.—(1) The Government will not abandon sensitive Government property without the Contractor's written consent.

(2) The Government, upon notice to the Contractor, may abandon any nonsensitive Government property in place at which time all obligations of the Government regarding such abandoned property shall cease.

(3) The Government has no obligation to restore or rehabilitate the Contractor's premises under any circumstances; however, if Government-furnished property is withdrawn or is unsuitable for the intended use, or if other Government property is substituted, then the equitable adjustment under paragraph (h) of this clause may properly include restoration or rehabilitation costs.

(k) Communications. All communications under this clause shall be in writing.

(l) Overseas contracts. If this contract is to be performed outside of the United States of America and its outlying areas, the words "Government" and "Government-furnished" (wherever they appear in this clause) shall be construed as "United States Government" and "United States Government-furnished," respectively.

131. *FAR 52.245-4 GOVERNMENT-FURNISHED PROPERTY (SHORT FORM) (JUNE 2003) [For Government Property $100,000 or Less]

(a) The Government shall delivery to the Contractor, at the time and locations stated in this contract, the Government-furnished property described in the Schedule or specifications. If that property, suitable for its intended use, is not delivered to the Contractor, the Contracting Officer shall equitably adjust affected provisions of this contract in accordance with the Changed clause when--

(1) The Contractor submits a timely written request for an equitable adjustment; and

(2) The facts warrant an equitable adjustment.

(b) Title to Government-furnished property shall remain in the Government. The Contractor shall use the Government-furnished property only in connection with this contract. The Contractor shall maintain adequate property control records in accordance with sound industrial practice and will make such records available for Government inspection at all reasonable times, unless the clause at Federal Acquisition Regulation 52.245-1, Property Records, is included in this contract.

(c) Upon delivery of Government-furnished property to the Contractor, the Contractor assumes the risk and responsibility for its loss or damage, except--

(1) For reasonable wear and tear;

(2) To the extent property is consumed in performing this contract; or

(3) As otherwise provided for by the provisions of this contract.

(d) Upon completing this contract, the Contractor shall follow the instructions of the Contracting Officer regarding the disposition of all Government-furnished property not consumed in performing this contract or previously delivered to the Government. The Contractor shall prepare for shipment, deliver f.o.b. origin, or dispose of the Government property, as may be directed or authorized by the Contracting Officer. The net proceeds of any such disposal shall be credited to the contract price or shall be paid to the Government as directed by the Contracting Officer.

(e) If this contract is to be performed outside the United States of America and its outlying areas, the words "Government" and "Government-furnished" (wherever they appear in this clause) shall be construed as "United States Government" and "United States Government-furnished," respectively.

132. *FAR 52.246-12 INSPECTION OF CONSTRUCTION (AUG 1996)

(a) Definition. "Work" includes, but is not limited to, materials, workmanship, and manufacture and fabrication of components.

(b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. The Contractor shall maintain complete inspection records and make them available to the Government. All work shall be conducted under the general direction of the Contracting Officer and is subject to Government inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.

(c) Government inspections and tests are for the sole benefit of the Government and do not--

(1) Relieve the Contractor of responsibility for providing adequate quality control measures;

(2) Relieve the Contractor of responsibility for damage to or loss of the material before acceptance;

(3) Constitute or imply acceptance; or

(4) Affect the continuing rights of the Government after acceptance of the completed work under paragraph (i) below.

(d) The presence or absence of a Government inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specification without the Contracting Officer's written authorization.

(e) The Contractor shall promptly furnish, at no increase in contract price, all facilities,labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Contracting Officer. The Government may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The Government shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.

(f) The Contractor shall, without charge, replace or correct work found by the Government not to conform to contract requirements, unless in the public interest the Government consents to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.

(g) If the Contractor does not promptly replace or correct rejected work, the Government may

(1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor or

(2) Terminate for default the Contractor's right to proceed.

(h) If, before acceptance of the entire work, the Government decides to examine already completed work by removing it or tearing it out, the Contractor, on request, shall promptly furnish all necessary facilities, labor, and material. If the work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray the expenses of the examination and of satisfactory reconstruction. However, if the work is found to meet contract requirements, the Contracting Officer shall make an equitable adjustment for the additional services involved in the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.

(i) Unless otherwise specified in the contract, the Government shall accept, as promptly as practicable after completion and inspection, all work required by the contract or that portion of the work the Contracting Officer determines can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the Government's rights under any warranty or guarantee.

133. *FAR 52.246-21 WARRANTY OF CONSTRUCTION (MAR 1994)

(a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (i) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

(b) This warranty shall continue for a period of 1 year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the Government takes possession.

(c) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Government-owned or controlled real or personal property, when that damage is the result of--

(1) The Contractor's failure to conform to contract requirements; or

(2) Any defect of equipment, material, workmanship, or design furnished.

(d) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year from the date of repair or replacement.

(e) The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

(f) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

(g) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall--

(1) Obtain all warranties that would be given in normal commercial practice;

(2) Require all warranties to be executed, in writing, for the benefit of the Government, if directed by the Contracting Officer; and

(3) Enforce all warranties for the benefit of the Government, if directed by the Contracting Officer.

(h) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the Government may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.

(i) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Government nor for the repair of any damage that results from any defect in Government-furnished material or design.

(j) This warranty shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

134. DFARS 252.247-7023 TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)

(a) Definitions.

As used in this clause--

(1) "Components" means articles, materials, and supplies incorporated directly into end products at any level of manufacture, fabrication, or assembly by the Contractor or any subcontractor.

(2) 'Department of Defense" (DOD) means the Army, Navy, Air Force, Marine Corps, and defense agencies.

(3) "Foreign flag vessel" means any vessel that is not a U.S.-flag vessel.

(4) "Ocean transportation" means any transportation aboard a ship, vessel, boat, barge, or ferry through international waters.

(5) "Subcontractor" means a supplier, materialman, distributor, or vendor at any level below the prime Contractor whose contractual obligation to perform results from, or is conditioned upon, award of the prime contract and who is performing any part of the work or other requirement of the prime contract.

(6) "Supplies" means all property, except land and interests in lard, that is clearly identifiable for eventual use by or owned by the DoD at the time of transportation by sea.

(i) An item is clearly identifiable for eventual use by the DoD if, for example, the contract documentation contains a reference to a DoD contract number or a military destination.

(ii) "Supplies" includes (but is not limited to) public works; buildings and facilities; ships; floating equipment and vessels of every character, type, and description, with parts, subassemblies, accessories, and equipment; machine tools; material; equipment; stores of all kinds; end items; construction materials; and components of the foregoing.

(7) "U.S.-flag vessel" means a vessel of the United States or belonging to the United States, including any vessel registered or having national status under the laws of the United States.

(b) (1) The Contractor shall use U.S. -flag vessels when transporting any supplies by sea under this contract.

(2) A subcontractor transporting supplies by sea under this contract shall use U.S.-flag vessel if--

(i) This Contract is a construction contract; or

(ii) The supplies being transported are-

(A) Noncommercial items; or

(B) Commercial items that-

(1) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it subcontracts for f.o.b. destination shipment);

(2) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(3) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

(c) The Contractor and its subcontractors may request that the Contracting Officer authorize shipment in foreign-flag vessels, or designate available U.S.-flag vessels, if the Contractor or a subcontractor believes that--

(1) U.S.-flag vessels are not available for timely shipment;

(2) The freight charges are inordinately excessive or unreasonable; or

(3) Freight charges are higher that charges to private persons for transportation of like goods.

(d) The Contractor must submit any request for use of other than U.S.-flag vessels in writing to the Contracting Officer at least 45 days prior to the sailing date necessary to meet its delivery schedules. The Contracting Officer will process requests submitted after such date(s) as expeditiously as possible, but the Contracting Officer's failure to grant approvals to meet the shipper's sailing date will not of itself constitute a compensable delay under this or any other clause of this contract. Requests shall contain at a minimum--

(1) Type, weight, and cube of cargo;

(2) Required shipping date:

(3) Special handling and discharge requirements;

(4) Loading and discharge points;

(5) Name of shipper and consignee;

(6) Prime contract number, and

(7) A documented description of efforts made to secure U.S.-flag vessels, including points of contact (with names and telephone numbers) with at least two U.S.-flag carriers contacted. Copies of telephone notes, telegraphic and facsimile message or letters will be sufficient for this purpose.

(e) The Contractor shall, within 30 days after each shipment covered by this clause, provide the Contracting Officer and the Division of National Cargo, Office of Market Development, Maritime Administration, U.S. Department of Transportation, Washington, DC 20590, one copy of the rated on board vessel operating carrier's ocean bill of lading, which shall contain the following information--

(1) Prime contract number;

(2) Name of vessel;

(3) Vessel flag of registry;

(4) Date of loading;

(5) Port of loading;

(6) Port of final discharge;

(7) Description of commodity;
(8) Gross weight in pounds and cubic feet if available;
(9) Total ocean freight in U.S. dollars; and
(10) Name of the steamship company.

(f) The Contractor agrees to provide with its final invoice under this contract a representation that to the best of its knowledge and belief--

(1) No ocean transportation was used in the performance of this contract;
(2) Ocean transportation was used and only U.S.-flag vessels were used for all ocean shipments under the contract;
(3) Ocean transportation was used, and the Contractor had the written consent of the Contracting Officer for all non-U.S.-flag ocean transportation; or
(4) Ocean transportation was used and some or all of the shipments were made on non-U.S.-flag vessels without the written consent of the Contracting Officer. The Contractor shall describe these shipments in the following format;

ITEM DESCRIPTION	CONTRACT LINE ITEMS	QUANTITY
TOTAL		

(g) If the final invoice does not include the required representation, the Government will reject and return it to the Contractor as an improper invoice for the purposes of the Prompt Payment clause of this contract. In the event there has been unauthorized use of non-U.S.-flag vessels in the performance of this contract, the Contracting Officer is entitled to equitably adjust the contract, based on the unauthorized use.

(h) The Contractor shall include this clause, including this paragraph (h) in all subcontracts under this contract that-

(1) Exceed the simplified acquistion threshold in Part 2 of the Federal Acquisition Regulation; and
(2) Are for a type of supplies described in paragraph (b) (2) of this clause.

135. DFARS 252.247-7024 NOTIFICATION OF TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)

(a) The Contractor has indicated by the response to the solicitation provision, Representation of Extent of Transportation by Sea, that it did not anticipate transporting by sea any supplies. If, however, after the award of this contract, the Contractor learns that supplies, as defined in the Transportation of Supplies by Sea clause of this contract, will be transported by sea, the Contractor--

(1) Shall notify the Contracting Officer of that fact; and
(2) Hereby agrees to comply with all the terms and conditions of the Transportation of Supplies by Sea clause of this contract.

(b) (1) The Contractor shall use U.S. -flag vessels when transporting any supplies by sea under this contract.

(2) A subcontractor transporting supplies by sea under this contract shall use U.S.-flag vessel if--
(i) This Contract is a construction contract; or
(ii) The supplies being transported are-
(A) Noncommercial items; or
(B) Commercial items that-
(1) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it subcontracts for f.o.b. destination shipment);
(2) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(3) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

136. FAR 52.248-3 VALUE ENGINEERING--CONSTRUCTION (FEB 2000) (ALERNATE I (APR 1984)

(a) General. The Contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECP's) voluntarily. The Contractor shall share in any instant contract savings realized from accepted VECP's, in accordance with paragraph (f) of this clause.

(b) Definitions. "Collateral costs," as used in this clause, means agency costs of operation, maintenance, logistic support, or Government-furnished property.

"Collateral savings," as used in this clause, means those measurable net reductions resulting from a VECP in the agency's overall projected collateral costs, exclusive of acquisition savings, whether or not the acquisition cost changes.

"Contractor's development and implementation costs," as used in this clause, means those costs the Contractor incurs on a VECP specifically in developing, testing, preparing, and submitting the VECP, as well as those costs the Contractor incurs to make the contractual changes required by Government acceptance of a VECP.

"Government costs," as used in this clause, means those agency costs that result directly from developing and implementing the VECP, such as any net increases in the cost of testing, operations, maintenance, and logistic support. The term does not include the normal administrative costs of processing the VECP.

"Instant contract savings," as used in this clause, means the estimated reduction in Contractor cost of performance resulting from acceptance of the VECP, minus allowable Contractor's development and implementation costs, including subcontractors' development and implementation costs (see paragraph (h) of this clause).

"Value engineering change proposal (VECP)" means a proposal that--

(1) Requires a change to this, the instant contract, to implement; and

(2) Results in reducing the contract price or estimated cost without impairing essential functions or characteristics; provided, that it does not involve a change--

(i) In deliverable end item quantities only; or

(ii) To the contract type only.

(c) VECP preparation. As a minimum, the Contractor shall include in each VECP the information described in paragraphs (c) (1) through (7) of this clause. If the proposed change is affected by contractually required configuration management or similar procedures, the instructions in those procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:

(1) A description of the difference between the existing contract requirement and that proposed, the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, and the effect of the change on the end item's performance.

(2) A list and analysis of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revisions.

(3) A separate, detailed cost estimate for

(i) the affected portions of the existing contract requirement and

(ii) the VECP. The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under paragraph (h) of this clause.

(4) A description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.

(5) A prediction of any effects the proposed change would have on collateral costs to the agency.

(6) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.

(7) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known.

(d) Submission. The Contractor shall submit VECP's to the Resident Engineer at the worksite, with a copy to the Contracting Officer.

(e) Government action.

(1) The Contracting Officer will notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required, the Contracting Officer will notify the Contractor within the 45-day period and provide the reason for the delay and the expected date of the decision. The Government will process VECP's expeditiously; however, it will not be liable for any delay in acting upon a VECP.

(2) If the VECP is not accepted, the Contracting Officer will notify the Contractor in writing, explaining the reasons for rejection. The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the Government. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.

(3) Any VECP may be accepted, in whole or in part, by the Contracting Officer's award of a modification to this contract citing this clause. The Contracting Officer may accept the VECP, even though an agreement on price reduction has not been reached, by issuing the Contractor a notice to proceed with the change. Until a notice to proceed is issued or a contract modification applied a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The decision to accept or reject all or part of any VECP is a unilateral decision made solely at the discretion of the Contracting Officer.

(f) Sharing.

(1) Rates. The Government's share of savings is determined by subtracting Government costs from instant contract savings and multiplying the result by

(i) 45 percent for fixed-price contracts or

(ii) 75 percent for cost-reimbursement contracts.

(2) Payment. Payment of any share due the Contractor for use of a VECP on this contract shall be authorized by a modification to this contract to--

(i) Accept the VECP;

(ii) Reduce the contract price or estimated cost by the amount of instant contract savings; and

(iii) Provide the Contractor's share of savings by adding the amount calculated to the contract price or fee.

(g) Deleted.

(h) Subcontracts. The Contractor shall include an appropriate value engineering clause in any subcontract of $50,000 or more and may include one in subcontracts of lesser value. In computing any adjustment in this contract's price under paragraph (f) of this clause, the Contractor's allowable development and implementation costs clearly resulting from a VECP accepted by the Government under this contract, but shall exclude any value engineering incentive payments to a subcontractor. The Contractor may choose any arrangement for subcontractor value engineering incentive payments; provided, that these payments shall not reduce the Government's share of the savings resulting from the VECP.

(i) Data. The Contractor may restrict the Government's right to use any part of a VECP or the supporting data by marking the following legend on the affected parts:

"These data, furnished under the Value Engineering--Construction clause of contract - _____, shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a value engineering change proposal submitted under the clause. This restriction does not limit the Government's right to use information contained in these data if it has been obtained or is otherwise available from the Contractor or from another source without limitations."

If a VECP is accepted, the Contractor hereby grants the Government unlimited rights in the VECP and supporting data, except that, with respect to data qualifying and submitted as limited rights technical data, the Government shall have the rights specified in the contract modification implementing the VECP and shall appropriately mark the data. (The terms "unlimited rights" and "limited rights" are defined in Part 27 of the Federal Acquisition Regulation.)

(End of Clause)

137. *FAR 52.249-2 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (MAY 2004) ALTERNATE I (SEP 1996) [For Contracts Over $100,000]

(a) The Government may terminate performance of work under this contract in whole or, from time to time, in part if the Contracting Officer determines that a termination is in the Government's interest. The Contracting Officer shall terminate by delivering to the Contractor a Notice of Termination specifying the extent of termination and the effective date.

(b) After receipt of a Notice of Termination, and except as directed by the Contracting Officer, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due under this clause:

(1) Stop work as specified in the notice.

(2) Place no further subcontracts or orders (referred to as subcontracts in this clause) for materials, services, or facilities, except as necessary to complete the continued portion of the contract.

(3) Terminate all subcontracts to the extent they relate to the work terminated.

(4) Assign to the Government, as directed by the Contracting Officer, all right, title, and interest of the Contractor under the subcontracts terminated, in which case the Government shall have the right to settle or to pay any termination settlement proposal arising out of those terminations.

(5) With approval or ratification to the extent required by the Contracting Officer, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts; the approval or ratification will be final for purposes of this clause.

(6) As directed by the Contracting Officer, transfer title and deliver to the Government

(i) the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced or acquired for the work terminated, and

(ii) the completed or partially completed plans, drawings, information, and other property that, if the contract had been completed, would be required to be furnished to the Government.

(7) Complete performance of the work not terminated.

(8) Take any action that may be necessary, or that the Contracting Officer may direct, for the protection and preservation of the property related to this contract that is in the possession of the Contractor and in which the Government has or may acquire an interest.

(9) Use its best efforts to sell, as directed or authorized by the Contracting Officer, any property of the types referred to in subparagraph (b) (6) of this clause; provided, however, that the Contractor

(i) is not required to extend credit to any purchaser and

(ii) may acquire the property under the conditions prescribed by, and at prices approved by, the Contracting Officer. The proceeds of any transfer or disposition will be applied to reduce any payments to be made by the Government under this contract, credited to the price or cost of the work, or paid in any other manner directed by the Contracting Officer.

(c) The Contractor shall submit complete termination inventory schedules no later than 120 days from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 120-day period.

(d) After expiration of the plant clearance period as defined in Subpart 49.001 of the Federal Acquisition Regulation, the Contractor may submit to the Contracting Officer a list, certified as to quantity and quality, of termination inventory not previously disposed of, excluding items authorized for disposition by the Contracting Officer. The Contractor may request the Government to remove those items or enter into an agreement for their storage. Within 15 days, the Government will accept title to those items and remove them or enter into a storage agreement. The Contracting Officer may verify the list upon removal of the items, or if stored, within 45 days from submission of the list, and shall correct the list, as necessary, before final settlement.

(e) After termination, the Contractor shall submit a final termination settlement proposal to the Contracting Officer in the form and with the certification prescribed by the Contracting Officer. The Contractor shall submit the proposal promptly, but no later than 1 year from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 1 year period. However, if the Contracting Officer determines that the facts justify it, a termination settlement proposal may be received and acted on after 1 year or any extension. If the Contractor fails to submit the proposal within the time allowed, the

Contracting Officer may determine, on the basis of information available, the amount, if any, due the Contractor because of the termination and shall pay the amount determined.

(f) Subject to paragraph (e) of this clause, the Contractor and the Contracting Officer may agree upon the whole or any part of the amount to be paid because of the termination. The amount may include a reasonable allowance for profit on work done. However, the agreed amount, whether under this paragraph (f) or paragraph (g) of this clause, exclusive of costs shown in subparagraph (g)(3) of this clause, may not exceed the total contract price as reduced by (1) the amount of payments previously made and (2) the contract price of work not terminated. The contract shall be amended, and the Contractor paid the agreed amount. Paragraph (f) of this clause shall not limit, restrict, or affect the amount that may be agreed upon to be paid under this paragraph.

(g) If the Contractor and the Contracting Officer fail to agree on the whole amount to be paid the Contractor because of the termination of work, the Contracting Officer shall pay the Contractor the amounts determined as follows, but without duplication of any amounts agreed upon under paragraph (f) of this clause:

(1) For contract work performed before the effective date of the termination, the total (without duplication of any items) of--

(i) The cost of this work;

(ii) The cost of settling and paying termination settlement proposals under terminated subcontracts that are properly chargeable to the terminated portion of the contract if not included in subdivision (g)(1)(i) of this clause; and

(iii) A sum, as profit on subdivision (g)(1)(i) of this clause, determined by the Contracting Officer under 49.202 of the Federal Acquisition Regulation, in effect on the date of this contract, to be fair and reasonable; however, if it appears that the Contractor would have sustained a loss on the entire contract had it been completed, the Contracting Officer shall allow no profit under this subdivision (iii) and shall reduce the settlement to reflect the indicated rate of loss.

(2) The reasonable costs of settlement of the work terminated, including--

(i) Accounting, legal, clerical, and other expenses reasonably necessary for the preparation of termination settlement proposals and supporting data;

(ii) The termination and settlement of subcontracts (excluding the amounts of such settlements); and

(iii) Storage, transportation, and other costs incurred, reasonably necessary for the preservation, protection, or disposition of the termination inventory.

(h) Except for normal spoilage, and except to the extent that the Government expressly assumed the risk of loss, the Contracting Officer shall exclude from the amounts payable to the Contractor under paragraph (g) of this clause, the fair value, as determined by the Contracting Officer, of property that is destroyed, lost, stolen, or damaged so as to become undeliverable to the Government or to a buyer.

(i) The cost principles and procedures of Part 31 of the Federal Acquisition Regulation, in effect on the date of this contract, shall govern all costs claimed, agreed to, or determined under this clause.

(j) The Contractor shall have the right of appeal, under the Disputes clause, from any determination made by the Contracting Officer under paragraph (e), (g), or (l) of this clause, except that if the Contractor failed to submit the termination settlement proposal within the time provided in paragraph (e) or (l), respectively, and failed to request a time extension, there is no right of appeal.

(k) In arriving at the amount due the Contractor under this clause, there shall be deducted--

(1) All unliquidated advance or other payments to the Contractor under the terminated portion of this contract;

(2) Any claim which the Government has against the Contractor under this contract; and

(3) The agreed price for, or the proceeds of sale of, materials, supplies, or other things acquired by the Contractor or sold under the provisions of this clause and not recovered by or credited to the Government.

(l) If the termination is partial, the Contractor may file a proposal with the Contracting Officer for an equitable adjustment of the price(s) of the continued portion of the contract. The Contracting Officer shall make any equitable adjustment agreed upon. Any proposal by the Contractor for an equitable adjustment under this clause shall be requested within 90 days from the effective date of termination unless extended in writing by the Contracting Officer.

(m) (1) The Government may, under the terms and conditions it prescribes, make partial payments and payments against costs incurred by the Contractor for the terminated portion of the contract, if the Contracting Officer believes the total of these payments will not exceed the amount to which the Contractor will be entitled.

(2) If the total payments exceed the amount finally determined to be due, the Contractor shall repay the excess to the Government upon demand, together with interest computed at the rate established by the Secretary of the Treasury under 50 U.S.C. App. 1215(b)(2). Interest shall be computed for the period from the date the excess payment is received by the Contractor to the date the excess is repaid. Interest shall not be charged on any excess payment due to a reduction in the Contractor's termination settlement proposal because of retention or other disposition of termination inventory until 10 days after the date of the retention or disposition, or a later date determined by the Contracting Officer because of the circumstances.

(n) Unless otherwise provided in this contract or by statute, the Contractor shall maintain all records and documents relating to the terminated portion of this contract for 3 years after final settlement. This includes all books and other evidence bearing on the Contractor's costs and expenses under this contract. The Contractor shall make these records and documents available to the Government, at the Contractor's office, at all reasonable times, without any direct charge. If approved by the Contracting Officer, photographs, microphotographs, or other authentic reproductions may be maintained instead of original records and documents.

138. *FAR 52.249-10 DEFAULT (FIXED-PRICE CONSTRUCTION) (APR 1984)

(a) If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will insure its completion within the time specified in this contract including any extension, or fails to complete the work within this time, the Government may, by written notice to the Contractor, terminate the right to proceed with the work (or the separable part of the work) that has been delayed. In this event, the Government may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the Government resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the Government in completing the work.

(b) The Contractor's right to proceed shall not be terminated nor the Contractor charged with damages under this clause, if-

(1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include

(i) acts of God or of the public enemy,
(ii) acts of the Government in either its sovereign or contractual capacity,
(iii) acts of another Contractor in the performance of a contract with the Government,
(iv) fires,
(v) floods,
(vi) epidemics,
(vii) quarantine restrictions,
(viii) strikes,
(ix) freight embargoes,
(x) unusually severe weather, or
(xi) delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers; and

(2) The Contractor, within 10 days from the beginning of any delay (unless extended by the Contracting Officer), notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, the time for completing the work shall be extended. The findings of the Contracting Officer shall be final and conclusive on the parties, but subject to appeal under the Disputes clause.

(c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligation s of the parties will be the same as if the termination had been issued for the convenience of the Government.

(d) The rights and remedies of the Government in this clause are in addition to any other rights and remedies provided by law or under this contract.

139. ENVIRONMENTAL LITIGATION (1974 NOV OCE)

(a) If the performance of all or any part of the work is suspended, delayed, or interrupted due to an order of a court of competent jurisdiction as a result of environmental litigation, as defined below, the Contracting Officer, at the request of the Contractor, shall determine whether the order is due in any part to the acts or omissions of the Contractor or a Subcontractor at any tier not required by the terms of this contract. If it is determined that the order is not due in any part to acts or omissions of the Contractor or a Subcontractor at any tier other than as required by the terms of this contract, such suspension, delay, or interruption shall be considered as if ordered by the Contracting Officer in the administration of this contract under the terms of the "Suspension of Work" clause of this contract. The period of such suspension, delay, or interruption shall be considered unreasonable, and an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) as provided in that clause, subject to all the provisions thereof.

(b) The term "environmental litigation," as used herein, means a lawsuit alleging that the work will have an adverse effect on the environment or that the Government has not duly considered, either substantively or procedurally, the effect of the work on the environment.

140. EFARS 52.249-5000 BASIS FOR SETTLEMENT OF PROPOSALS

Actual costs will be used to determine equipment cost for a settlement proposal submitted on the total cost basis under FAR 49.206-2(b). In evaluating a termination settlement proposal using the total cost basis, the following principles will be applied to determine allowable equipment costs:

(1) Actual costs for each piece of equipment, or groups of similar serial or series equipment, need not be available in the contractor's accounting records to determine total actual equipment costs.

(2) If equipment costs have been allocated to a contract using predetermined rates, those charges will be adjusted to actual costs.

(3) Recorded job costs adjusted for unallowable and unallocable expenses will be used to determine equipment operating expenses.

(4) Ownership costs (depreciation) will be determined using the contractor's depreciation schedule (subject to the provisions of FAR 31.205-11).

(5) License, taxes, storage and insurance costs are normally recovered as an indirect expense and unless the contractor charges these costs directly to contracts, they will be recovered through the indirect expense rate.

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SECTION 00800

SPECIAL CONTRACT REQUIREMENTS
5/00, Rev 8/03

PART 1 GENERAL

Attachments:

General Wage Decision Nos. CO030006, CO030012 and CO030014
AF FORM 103, Base Civil Engineering Work Clearance Request
AF CONSENT FORM

1.1 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall be required to (a) commence work under this contract within ten (10) calendar days after the date of receipt by him of Notice to Proceed, (b) prosecute said work diligently, and (c) complete the entire work ready for use not later than the number of calendar days (which includes design, design reviews and all construction activities) indicated on the awarded Standard Form SF 1442 (Page 00010-1) for this contract. The time stated for completion of the project shall include final cleanup of the premises. (FAR 52.211-10)

1.1.1 Sequence of Design-Construction

(a) After receipt of the Contract Notice to Proceed (NTP), the Contractor shall initiate design, comply with all design submission requirements as covered in Division 01 General Requirements of the advertised Solicitation, and obtain Government review of each submission. No construction may be started until the Government reviews the 100 Percent Corrected Design submission and determines it satisfactory for purposes of beginning construction. The Contractor has the option to submit the design as an entirely complete design package (design analysis, plans,and specifications and other design deliverables) or as two (2) separate complete design packages (design analysis, plans,and specifications and other design deliverables), one for the site work, foundations, long lead items and utilities and one for all other work. Each package will require the same design submittals, design reviews and design review conferences as set forth in the Contract. The Government will not grant any time extension for any design resubmittal required when, in the opinion of the Contracting Officer, the initial submission failed to meet the minimum quality requirements as set forth in the Contract. See Section 01002 SITE WORK, paragraph: Construction Sequence for additional requirements.

(b) If the Government allows the Contractor to proceed with limited construction based on pending minor revisions to the reviewed 100 Percent Corrected Design submission, no payment will be made for any in-place construction related to the pending revisions until they are completed, resubmitted and are satisfactory to the Government. Proceeding with limited construction requires written authorization by the Contracting Officer.

1.2 LIQUIDATED DAMAGES-CONSTRUCTION (SEPT 2000)

(a) If the Contractor fails to complete the work within the time inserted in Item 11 on page 00010-1 of Standard Form 1442, the Contractor shall pay liquidated damages to the Government in the amount of $800.00 for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause. (FAR 52.211-12)

1.3 EXCEPTION TO COMPLETION TIME AND LIQUIDATED DAMAGES

In case the Contracting Officer determines that seeding, sodding, and/or planting and/or the specified maintenance thereof is not feasible during the construction period, such work will be excepted from the completion time and liquidated damages. This work shall be accomplished during the first seeding, sodding, and/or planting period and the specified maintenance period following the completion date.

1.4 DESIGN-BUILD CONTRACT - ORDER OF PRECEDENCE

(a) The contract includes the standard contract clauses and schedules current at the time of contract award. It entails (1) the solicitation in its entirety, including all drawings, cuts, and illustrations, and any amendments, and (2) the successful offeror's accepted proposal. The contract constitutes and defines the entire agreement between the Contractor and the Government. No documentation shall be omitted which in any way bears upon the terms of that agreement.

(b) In the event of conflict or inconsistency between any of the provisions of this contract, precedence shall be given in the following order:

(1) Betterments: Any portion of the accepted proposal, which both conform to and exceed the provisions of the solicitation. "Betterment" is defined as any product, component, or system, which exceeds the requirements stated in the solicitation.

(2) The provisions of the solicitation. (See also Contract Clause entitled "SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION".)

(3) All other provisions of the accepted proposal.

(4) Any design products including, but not limited to, plans, specifications, engineering studies and analyses, shop drawings, equipment installation drawings, etc.. These are "deliverable" under the contract and are not part of the contract itself. Design products must conform with all the provisions of the contract, in the order of precedence herein.

(c) Where conflicts between the solicitation requirements and the UFGS guide specifications (available as indicated in Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES exist, the solicitation requirements shall take precedence. Any installation requirements within solicitation requirements, but not contained in the UFGS guide specifications, shall be added to the specifications or shown on the drawings.

1.5 RESPONSIBILITY OF THE CONTRACTOR FOR DESIGN

(a) The Contractor shall be responsible for the professional quality, technical accuracy, and the coordination of all designs, drawings, specifications, and any other non-construction services furnished by the Contractor under this contract. The Contractor shall, without additional compensation, correct or revise any errors or deficiency in its designs, drawings, specifications, and other non-construction services.

(b) Neither the Government's review, approval or acceptance of, nor payment for, the services required under this contract shall be construed to operate as a waiver of any rights under this contract or any cause of action arising out of the performance of this contract, and the Contractor shall be and remain liable to the Government in accordance with applicable law for all damages to the Government caused by the Contractor's negligent performance of any of the services described in paragraph (a) furnished under this contract.

(c) The rights and remedies of the Government provided under this contract are in addition to any other rights and remedies provided by law.

1.6 MISSION DELAY DAYS

Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the Contractor will record on the daily CQC report, the occurrence of mission delays and resultant impact to normally scheduled work. Actual mission delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled work day. The Contractor shall expect 15 working days of mission delays. This will cover occurrences due to heightened force protection and/or prohibiting contractor access to the site. If the number of actual mission delay days exceeds the number of days anticipated, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent work days in the overall completion time.

1.7 REQUEST FOR PROPOSAL (RFP) DRAWINGS

Fourteen (14) calendar days after Notice to Proceed, the Government will provide the successful Contractor a CD-ROM containing editable RFP CADD file drawings (file format and general CADD requirements are defined in Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES and 01040 AS-BUILT DRAWINGS) for use in preparation of design drawing deliverables. As-built drawing requirements are specified in Section 01040 AS-BUILT DRAWINGS.

1.8 BUILDING DEMOLITION

Contractor will be required to furnish the Contracting Officer (CO) a building removal plan. The building removal plan shall be submitted a minimum of 7 working days prior to commencement of work. Plan shall include a schedule of work, implementation and staging plan. All building demolition and debris shall be removed to an approved off-site landfill location. The use of explosives will not be permitted. Demolition work shall be completed Monday through Friday and between the hours of 8:00 A.M. and 5:00 P.M. Work will not be permitted on federal holidays. Building foundations shall be removed to 8 feet below grade. All utility lines shall be capped at 5 feet from the street curb location. All removed materials shall become the property of the Contractor, except for furniture, office equipment and other items identified.

1.9 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Equipment Room Drawings; G-AO.

This submittal is not required during construction, if equipment room drawings are shown on the 100 percent design submittal.

1.10 PHYSICAL DATA (APR 1984)

Data and information furnished or referred to below is for the Contractors' information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

a. The indications of physical conditions on the drawings and in the specifications are the result of site investigations by surveys and soil borings. The data shown graphically and by symbol for each respective boring represents the actual geologic features observed and logged at the location given on the drawings. While the borings are representative of subsurface conditions at their respective locations and for their respective vertical reaches, local minor variations characteristic of the subsurface materials of this region could occur.

b. Weather conditions shall have been investigated by the Contractor to satisfy himself as to the hazards likely to arise therefrom. Complete weather records and reports may be obtained from the local U.S. Weather Bureau.

c. Transportation facilities shall have been investigated by the Contractor to satisfy himself as to the existence of access highways and railroad facilities. (FAR 52.236-4)

1.11 PAYMENT

1.11.1 PROMPT PAYMENT ACT

Pay requests authorized in CONTRACT CLAUSES clause: "Payments Under Fixed-Price Construction Contracts", will be paid pursuant to the clause, "Prompt Payment for Construction Contracts". Pay requests will be submitted on ENG Form 93 and 93a, "Payment Estimate-Contract Performance" and "Continuation". All information and substantiation required by the identified contract clauses will be submitted with the ENG Form 93, and the required certification will be included on the last page of the ENG Form 93a, signed by an authorized contractor official and dated when signed. The designated billing office is the Office of the Area Engineer.

1.11.2 PAYMENTS FOR MODIFICATIONS

Payments may be made for cost bearing change orders within the scope of the contract only to the extent funds are authorized in the order on a two-part

modification. Contractor pricing proposed must be submitted at the earliest possible time after the change order is issued, or at a specific time as directed by the Contracting Officer. At the discretion of the Contracting Officer, any and all payments may be withheld on the modification until the Contractor has submitted a qualifying price proposal, in as much detail as required by the Contracting Officer, and the final price has been agreed.

1.11.3 PAYMENT FOR MATERIALS DELIVERED OFFSITE (MAR 1995)

a. Pursuant to FAR clause 52.232-5, Payments Under Fixed Priced Construction Contracts, materials delivered to the contractor at locations other than the site of the work may be taken into consideration in making payments if included in payment estimates and if all the conditions of the General Provisions are fulfilled. Payment for items delivered to locations other than the work site will be limited to: (1) materials required by the technical provisions; or (2) materials that have been fabricated to the point where they are identifiable to an item of work required under this contract.

b. Such payment will be made only after receipt of paid or receipted invoices or invoices with canceled check showing title to the items in the prime contractor and including the value of material and labor incorporated into the item. Payment for materials delivered off-site includes petroleum products. (List additional items for which payments will be made for off-site delivery.) (EFAR 52.232-5000)

1.12 AVAILABILITY OF UTILITY SERVICES

All reasonably required amounts of domestic water and electricity will be made available to the Contractor by the Government from existing system outlets and supplies. Contractor's access for filling trucks with potable water is located west of Building 660. The Contractor shall, at his own expense, make all temporary connections and install distribution lines. Temporary overhead electrical lines are not permitted within the construction boundary, or near the existing facility. The Contractor shall furnish to the Contracting Officer a complete system layout drawing showing type of materials to be used and method of installation for all temporary electrical systems. Meters shall be installed by the Contractor to determine the amount water and electricity used by him, and such utilities will be paid for by or charged to the Contractor. All temporary lines shall be maintained by the Contractor in a workmanlike manner satisfactory to the Contracting Officer and shall be removed by the Contractor in like manner prior to final acceptance of the construction. Normal quantities of electricity and water used to make final tests of completely installed systems will be furnished by the Government. Contractor shall install temporary water meters for the duration of the project for all areas where water is used for this contract. The contractor shall keep track of all water usage used in the construction project process during all declared water restrictions. The data gathered will be compiled weekly and submitted at the weekly coordination meeting. The Government will use this data to insure proper water management is maintained.

1.12.1 Water Resrictions

The state of Colorado is under drought conditions and will be conserving water for years to rebuild the water reservoirs. The City of Colorado Springs provides water to Peterson AFB and is thus under its water regulations and jurisdiction. The City of Colorado Springs maintains a web

site that declares which condition of water conservation the jurisdiction is setting. The website is www.csu.org. Violation of these conservation requirements is punishable by fines issued by the City of Colorado Springs to Peterson AFB. If Peterson AFB is fined because of actions of the Contractor, the base fine will be passed onto the Contractor via the Contracting Officer. These requirements are broken down into pre-establishment, establishment and post establishment of landscaping and general water use. Failure of the Contractor to follow the restrictions of this specification and the City of Colorado Springs Utilities CAN result in fines and penalties as listed on the website AND contained herein. The Contractor shall follow the requirements contained in this specification.

Establishment is defined as the period that begins when the plant materials are placed in their final setting and lasting to the time specified by this specification.

Stage II Water Restrictions: During Stage II water restrictions the Contractor shall develop irrigation schedules for submission to the Contracting Officer and the Chairman of the Water Conservation Council (WCC) for approval. The WCC is located at 21CES/CEOE, 719-556-4158. If not within the guidelines for water reduction levels below, contractor shall resubmit until approved.

Level A - Contractor shall achieve a 10% reduction on developed baseline through the Contractor, contracting officer and the chairman of the WCC. Level A allows irrigation of 3 times per week. The baseline is defined below.

Level B - Contractor shall achieve a 26% reduction on developed baseline through the Contractor, Contracting Officer and the chairman of the WCC. Level B allows irrigation of 2 times per week.

Level C - Contractor shall achieve a 43% reduction on developed baseline through the Contractor, Contracting Officer and the chairman of the WCC. Level C allows irrigation of 1 time per week.

Level D - Contractor shall achieve a 50% reduction on developed baseline through the Contractor, Contracting Officer and the chairman of the WCC. Level D allows irrigation of 2 times per month.

Level E - Contractor shall achieve a 58% reduction on developed baseline through the Contractor, Contracting Officer and the chairman of the WCC. Level E allows irrigation of 1 time per month.

Stage III Water Restrictions. Restrict outdoor watering to irrigation necessary to sustain large trees and special cases as approved by Base Commander. Contractor shall comply with this directive as coordinated through the Contracting Officer via the WCC. Anticipate turf grass loss. The Base Commander will direct further restrictions within grounds irrigation plan.

The baseline shall be calculated and submitted by the Contractor for approval to the Contracting Officer and the WCC. The baseline shall be calculated for each year of the contract and broken down into Summer and Winter usages.

1.12.2 Liability

The Contractor shall not be relieved of liability for the establishment and maintenance of landscaping within the project while water restrictions are Stage II or above (not in stage III).

The Contractor shall bid on Stage II-B.

The Contractor shall not be liable for plant materials dying during conditions of Stage II-C through Stage III except for negligence.

1.12.3 Irrigation methods

The following limitations imposed on various watering methods for pre-establishment and post-establishment.

a. Hand watering - no restrictions for bucket or truck watering. Hoses shall have positive shutoff and not be left unattended. Drip irrigation system and micro sprays will be considered on a case-by-case basis by the WCC. The contractor shall submit equipment, design and watering schedule for hand watering and approval obtained from the Contracting Officer and the WCC before watering begins.

b. Irrigation systems temporary or permanent. Pop Up sprinkler zones shall not run for more than 20 minutes. Impact sprinkler zones shall not run for more than 45 minutes.

1.12.4 Watering Times

Watering times shall be between the hours of midnight to 9:00 am and 6:00 pm and midnight on the designated day within the contractors approved schedule based on the watering restrictions declared herein. Contractor shall produce a plan with watering schedules complete with drawings showing zones and water flows for each zone, which shall be subject to inspection.

This plan includes pre-establishment, establishment, and post-establishment. The plan is submitted for approval by the WCC via the Contracting Officer.

All other base irrigation will be shifted to night schedules as soon as the freezing threat is gone at the beginning of the season. Daytime watering will be coordinated with the chairman of the WCC and the contracting officer based on freeze threat or special cases, examples: such as equipment failure and the landscape missed its designated watering.

In addition to the requirement above zones adjacent to sidewalks and areas where pedestrians can get sprayed shall not be watered after 6:00 AM. If the number of zones cannot fit into this watering time window the contractor must demonstrate this case and request permission for an alternative schedule to the WCC via the contracting officer. However, this is not permission to under design the size of the irrigation system. If design is required the system shall be designed to operate under the time windows here specified.

1.12.5 Landscape Establishment

This includes the establishment of all landscape to include sod (turf), shrubs, bushes, tree, perennials, annuals, etc.

Stage I & II has no restrictions on the amount of water used during establishment.

The contractor shall not water outside the times listed above except for special permission from the WCC and on a case by case basis.

1.12.5.1 Landscape Establishment period.

The establishment period runs for 24 days for turf grass (sod or seed) and 11 days for other landscape material.

1.12.5.2 Landscape Establishment Period Restrictions

Stage II level A & B: no landscape establishment is permitted from July 15th through August 15th.

Stage II Levels C-E: no landscape establishment is allowed from May 1st through September 30th.

Stage III: No landscape establishment is authorized in a Stage III declared drought.

If the Stage II levels C through E or Stage III higher levels of restriction are in force; a credit, a reduction of work, or some other equitable adjustment shall be negotiated through the contracting officer based on uncontrollable circumstances.

1.12.5.3 Maintenance of Irrigation Systems

The Contractor shall maintain the irrigation system such that water running onto paved areas or into storm sewers shall be minimized.

1.12.5.4 Meeting Requirements

In addition to a preparatory meeting required elsewhere in this contract the Contractor shall schedule a Landscape Meeting with the Contracting Officer, WCC, and Base Project Manager at least four weeks prior to the start of landscaping activities and prior to the purchase of landscaping material. This meeting shall fully discuss and resolve any issues related to the installation, establishment, and maintenance of the landscaping. The meeting shall discuss the execution of the landscaping and any necessary adjustments for the conditions of drought and coordination.

1.13 UTILITY SERVICE INTERRUPTIONS

An overall infrastructure and utility outage plan shall be submitted for approval with tentative scheduled dates for interruptions. The plan shall lump required work for interruptions together so as to minimize impacts to fire lanes and Peterson AFB. The Contractor will identify all interruptions in the initial plan and indicate required interruptions/outages with proposed dates. Approval of the initial plan is required. Upon each specific outage outlined in the initial plan, submit a detailed notification, for final approval and acceptance 30 days prior to performing the actual interruption/outage. Infrastructure and utilities include, but are not limited to, parking lots, roads, gates, security dirt/gravel roads, security systems, sidewalks, entrances, doors, water systems, irrigation, irrigation controls, lighting external and internal, water, fire detection, electrical power and UPS. The Contractor shall

submit written notification not less than 30 calendar days in advance of each interruption of each utility and communication service to or within existing buildings and facilities being used by others. No single outage will exceed 4 hours unless approved in writing. The time and duration of all outages will be coordinated and approved with the Using Agency by the Contracting Officer.

1.14 DIGGING PERMITS AND ROAD CLOSINGS

The Contractor shall be responsible for securing digging permits. Digging permits typically take 14 working calendar days for review, processing and approval. The Contractor will be provided a blank AF Form 103 and shall be responsible for signatures and coordination with communications, fire department, plumbing shop, electrical shop, grounds shop, environmental, safety, security police, base operations and any affected public utility. Work on or near roadways shall be flagged in accordance with the safety requirements in Safety and Health Requirements Manual EM 385-1-1, which forms a part of these specifications. Roads shall not be closed at any time for utility work. All utilities crossing beneath any paved road will be installed via boring and jacking.

Information on intended road closings shall be submitted 30 days in advance to the Contracting Officer, for approval, prior to and execution of road closing. All road closings will published in the base newspaper, once approved.

1.15 NOT USED

1.16 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER

a. This clause specifies the procedure for the determination of time extensions for unusually severe weather in accordance with the contract clause entitled "Default: (Fixed-Price Construction)." In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

(1) The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

(2) The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the contractor.

b. The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY
WORK DAYS BASED ON (5) DAY WORK WEEK

JAN	7
FEB	5
MAR	4
APR	4

MAY	6
JUN	5
JUL	7
AUG	7
SEP	4
OCT	3
NOV	4
DEC	7

c. Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the contractor's scheduled work day. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph b. above, the contracting officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the contract clause entitled "Default (Fixed Price Construction)". (ER 415-1-15)

1.17 INSURANCE REQUIRED

In accordance with CONTRACT CLAUSES clause: "Insurance Work on a Government Installation," the Contractor shall procure the following minimum insurance:

Type	Amount
Workmen's Compensation and Employer's Liability Insurance	$100,000
General Liability Insurance	$500,000 per occurrence
Automobile Liability Insurance	
Bodily injury	$200,000 per person and $500,000 per occurrence
Property damage	$ 20,000 per occurrence

(Coverages per FAR 28.307-2)

1.18 SECURITY REQUIREMENTS

1.18.1 Contractor's Employee Identification

The Contractor shall be responsible for furnishing to each employee and for requiring each employee engaged on the work to display such identification as may be approved and directed by the Contracting Officer. All prescribed identification shall immediately be delivered to the Contracting Officer, for cancellation upon release of any employees. When the contract involves work in restricted security areas, only employees who are U.S. citizens will be permitted to enter. Proof of U.S. citizenship is required prior to entry. Contractor shall be responsible for requiring each contract employee to report to the 21 SFS and ID to have their finger prints taken. (Based on FAR 52.204-2)

1.18.2 Peterson AFB Access Requirements

a. Each Contractor and Contractor employee to work on the job at PAFB must obtain a vehicle pass to enter the base. The pass will be obtained the first day of work at the Base, or not later than the next working day. To obtain a vehicle pass, the vehicle operator must have in his/her possession, a current valid driver's license, current vehicle registration, and current proof of insurance. Badging is issued at the Visitor's Center and is located outside the North Gate. Procedures for obtaining badging and base passes will be identified at the Pre-Construction Meeting. Expired/unregistered vehicles will not be allowed on the base. Employees who are terminated from employment will surrender any and all identification media and vehicle passes to their immediate supervisor, who will in turn surrender the same to the Pass and ID Office within 24 hours of employee termination. The supervisor will immediately escort the terminated employee off base and notify the Contracting Officer of the termination. The Contractor shall provide the Contracting Officer a copy of a completed "Contractor Employee Verification List" Attachment, which is to include the names of all subcontractors and suppliers, names of personnel, date-of-birth, and social security numbers of all employees requiring sponsor access to the Base. The list shall be revised in its entirety and a new copy provided to the Contracting Officer as persons/companies are added and/or deleted. Notification of access for personnel shall be provided 48 hrs in advance to the Contracting Officer.

b. Fuel Trucks: Fuel truck deliveries are covered by a separate Entry Access List. Each driver shall have a contractor badge and be escorted onto base. Another contractor already cleared and on the Base Entry Access List can escort the Fuel truck driver. The Entry Access List for Fuel Truck (EALFT) drivers is kept with the 21SFS/SFOF office, phone 556-7532. The fuel truck driver must be on the list and the Base EAL before entering the West Gate. The following information is required: Full Name, Company Name w/phone number, Drivers License number with State of Issue. The drivers' social security number must be provided if requested. Fuel truck deliveries to the Construction Contractor's Gate has additional requirements in the Contractor Construction Gate specification.

c. All driver's on PAFB will have in their possession a valid driver's license, valid vehicle registration, and proof of vehicle insurance while operating any vehicle. If vehicle is registered to someone other than the operator, the operator must provide a notarized letter from the registered owner, authorizing the operator permission to operate the vehicle. All vehicles entering or leaving PAFB are subject to search.

d. Contract Superintendent must notify the Contracting Officer prior to any work performed on non-scheduled hours/days (evenings, weekends, holidays). Any personnel working on non-scheduled hours/days must check in with Base Police prior to and at the completion of the work.

e. All equipment and materials are the responsibility of the Contractor. Make sure that all equipment and materials are properly secured at the end of the work day. Standoff distances from populated portions of Building 350 shall be as follows:

Job boxes, storage containers and staged material: 33 feet.
Trash Containers: 82 feet
Equipment and Vehicles: 82 feet

Any work area found by Base Police to be unsecured will be checked for

intruders and the responsible Contract Superintendent will be called in to secure the areas/equipment and regardless of the time of day, the Contractor shall be required to respond within 4 hours if areas are found insecure.

f. If any roadway is to be blocked for any reason, the Contractor shall notify the Contracting Officer of the blockage, prior to the blockage, and must insure that proper signs are installed to divert traffic around the affected area. The Contractor shall coordinate closures/blockages at least 14 days in advance to minimize impact on the installation.

g. Contractors, Subcontractors and all personnel who report for work, and do not know the location of the job site, will be held at the gate to await escort service from the Construction Superintendent.

h. Base speed limits are strictly enforced with the use of radar equipment. The base speed limit is 30 MPH, unless otherwise posted. The speed limit through the gates is 20 MPH. Motorcycle operator/riders must wear protective headgear (helmets) while riding on base. Mandatory seatbelt laws are in effect on base. Seatbelts must be fastened prior to entering the base. All commercial Contractor traffic shall use the west installation gate for entry. All privately owned Contractor vehicles shall use the North, West or East gates for entry.

i. No privately owned weapons or contraband (drugs, etc.) are permitted on any military installation, at any time. Violators will be prosecuted. Cameras are also considered to be contraband on this installation.

j. The base security police can at any time enter the construction site and sweep the area with bomb sniffing dogs. They can search any container, vehicle, or contractor personnel on the installation, or within the construction boundaries. The security police can also detain and question any person(s) deemed a potential threat by the Air Force. The contractor shall not place storage containers of any type, or tool storage bins/lockers within standoff distances specified in paragraph e. above from the existing populated portions of facility exterior walls, or foundation walls.

k. Peterson AFB is considered to be a closed facility. No unauthorized tours or visitors will be allowed on the installation.

l. The Base Security Police emergency number can be obtained at the Pre-Construction Meeting. This number provides emergency police, fire, and ambulance service, 24 hours a day, 7 days/week.

1.18.3 Peterson AFB Gate Operation and Entry Requirements

All traffic coming and leaving PAFB is subject to search and shall comply with requirements of the Threat Condition Codes. All persons entering PAFB must have a military ID or a Contractor Badge and vehicles must be registered.

1.18.3.1 North Gate

Commercial Contractor vehicles are not allowed use the North Gate for entrance to PAFB. Privately owned Contractor vehicles may use the North Gate. No exceptions will be made.

1.18.3.2 West Gate

The West Gate (Main Gate) to PAFB is always open except when directed by the base commander under conditions of National Security. All commercial vehicles shall use the right lane of the West Gate. A commercial vehicle is defined as any vehicle that has signage on it, is carrying materials such as in a pickup truck, a moving van, a panel truck, a supply truck, and any vehicle that the 21SFS shall designate a commercial vehicle. All commercial vehicles will be searched. The gate experiences up to 30 minute delays during morning congestion between the hours of 0700 to 0800. After 0800, delays of approximately 5 minutes are typical. The contractor is asked to keep large truck deliveries between the following hours: 0500-0600, 0800-1200 and 1300-1800. This will reduce the congestion at the gate for everyone.

1.18.3.3 East Gate

The East Gate is for morning hours use with personally owned vehicles only **(Commercial Contractor Vehicles are not allowed to use this gate)**. This gate is open 0500-0900 and 1500-1800, Monday through Friday only. The contractor's employees driving personally owned vehicles can use the East Gate. The gate is usually the least congested on PAFB. The government reserves the right to close and prohibit access at this gate when it deems necessary.

1.18.4 Contractor Employees Requiring Access to Automated Information Systems (AIS)

All Contractor (and subcontractor) employees (U.S. citizens and Non- U.S. citizens) working under this contract (to include grants, cooperative agreements and task orders) who require access to Automated Information Systems (AIS), (stand alone computers, network computers/systems, e-mail) shall, at a minimum, be designated into an ADP-III position (non-sensitive) in accordance with DoD 5220-22-R, Industrial Security Regulation (http://www.deskbook.osd.mil/htmlfiles/DBY_dod-7-Careers.asp).

The investigative requirements for an ADP-III position are a favorable National Agency Check (NAC), SF-85P, Public Trust Position. SF-85P is available at: http://www.gsa.gov/Portal/home.jsp

Under "Key Information", click on "Federal Forms",
Click on "U.S. Government Forms (GSA, Standard and Optional)"
Click on "Standard (SF) Forms"
Click on "SF 85P Questionnaire for Public Trust Positions"
SF 85P is available in either Screen-Fillable FormNet Version or Adobe Acrobat version.

Proof of a favorable NAC shall be submitted to USACE, Omaha District Security Officer, ATTN: CENWO-SL, 106 S. 15th St, Omaha, NE 68102-1618, within three (3) working days after award of any contract or task order, and shall be submitted prior to the individual being permitted access to an AIS.

a. Contractors who have a commercial or government entity (CAGE) Code and Facility Security Clearance should submit forms through their Facility Security Office, who shall forward results of the NAC to the Omaha District Security Officer (address above).

b. For those contractors who do not have a CAGE Code or Facility Security

Clearance, the SF 85-P and 2 copies of the FD-258 (Fingerprint Cards) shall be completed and submitted to the Omaha District Security Officer (address above.) These must be mailed or hand-delivered, as original signatures are required. Fingerprint cards are available upon request and may be taken to any local law enforcement center for completion. For those in the Omaha, Nebraska area, fingerprint cards may be completed by contacting the Omaha District Human Resources Office, (402) 221-4072.

In accordance with Engineering Regulation, ER 380-1-18 (http://www.usace.army.mil/inet/usace-docs/eng-regs/er.htm), Section 4, foreign nationals who work on Corps of Engineers' contracts or task orders shall be approved by the HQUSACE Foreign Disclosure Officer or higher before beginning work on the contract/task order. This regulation includes subcontractor employees. (NOTE: exceptions to the above requirement include foreign nationals who perform janitorial and/or ground maintenance services.) The Contractor shall submit to the Omaha District Contracting Office, ATTN: (CENWO-CT) the names of all foreign nationals proposed for performance under this contract/task order, along with documentation to verify that he/she was legally admitted into the United States and has authority to work and/or go to school in the US. Such documentation may include a US passport, Certificate of US citizenship (INS Form N-560 or N-561), Certificate of Naturalization (INS Form N-550 or N-570), foreign passport with I-551 stamp or attached INS Form I-94 indicating employment authorization, Alien Registration Receipt Card with photograph (INS Form I-151 or I-551), Temporary Resident Card (INS Form I-688), Employment Authorization Card (INS Form I-688A), Reentry Permit (INS Form I-327), Refugee Travel Document (INS Form I-571), Employment Authorization Document issued by the INS which contains a photograph (INS Form I-688B). INS forms are available at http://www.immigration.gov/graphics/formsfee/index.htm.

Compliance with this provision is mandatory (only if AIS access is required). Offeror should check the appropriate box below and return with offer or quote to Contracting Office.

[ ] HAVE FAVORABLE SF-85P(s)*
[ ] SF85-P(s) TO BE INITIATED UPON AWARD
[ ] SF85-P(s) PAPERWORK IN PROGRESS
[ ] DO NOT INTEND TO COMPLY

*Must be accomplished for each employee who will be accessing Government AIS under this action.

(End of Provision)(PIL 2003-06, 19 Feb 03)

1.18.5 Background Checks for Contractor Personnel Requiring Entry/Access to Installations/Locations (Date)

a. Contractor and subcontractor personnel requiring entry/access to the installation(s)/location(s) cited in the contract shall be governed by the requirements of this clause. The below requirements and procedures are prerequisites to the issuance of any government identification (i.e., pass/badge) or the registration of a privately owned or commercial vehicle and the issuance of a pass/decal. Contractor requests for exceptions to the below requirements and procedures shall be addressed to the Contracting Officer/designee who will obtain an approval/disapproval from the installation/location commander who has the final authority on access issues.

b. If contractor performance starts immediately upon contract award or within the 9 calendar days after the contract award date (i.e., award date plus 9 calendar days), the contractor shall submit the following documentation for personnel who will begin performance within the first 10 days of the contract to the Contracting Officer/designee:

(1) "Listing of personnel requiring access/entry" (See Note 1), and

(2) Completed consent forms (See Note 2).

To obtain access for contractor personnel who will begin performance on or after the 11th day of the contract (i.e., subsequent to the initial 10 days of the contract), the contractor shall follow the documentation requirements outlined in (c).

c. If the contractor's performance starts on or after the 11th day following the contract award date (e.g., performance begins on day 11 or later) or for contractor personnel who will begin performance on or after the 11th day of the contract, the contractor shall submit the following documentation to the Contracting Officer/designee:

(1) "Listing of personnel requiring access/entry" (See Note 1),

(2) Completed consent forms (See Note 2), and

(3) Favorable Criminal Background Histories (See Note 3).

This documentation shall be submitted no later than two (2) calendar days prior to performance on the installation/location.

d. Subsequent to the contractor accomplishing (b) or (c), as applicable, contractor personnel may report to the badge issuing activity and follow local installation/facility procedures to obtain identification passes/badges and vehicle passes/decals.

e. For contractor personnel to obtain entry to the installation/facility in order to request the issuance of government identification (i.e., pass/badge) or to register a privately owned/commercial vehicle and obtain a vehicle pass/decal, the contractor personnel shall report to the installation/location entry control point and badge issuing activity with a photo identification issued by a Federal/State activity.

f. To register a privately owned/commercial vehicle and obtain a vehicle pass/decal, contractor personnel shall provide a valid driver's license, current vehicle registration, and valid vehicle insurance certificate.

g Contractor personnel shall follow local procedures for wearing and displaying government-issued identification passes/badges, vehicle passes/decals, and contractor-issued identification. In general, all identification passes/badges and vehicle passes/decals shall at all times be prominently worn/displayed in a visible manner to government personnel.

h. During the performance period of the contract, the contractor shall:

(1) Provide written notification of any additions to the "Listing of personnel requiring entry/access" and submit consent forms and criminal background histories for all new contractor personnel requiring entry/access to the Contracting Officer/designee.

(2) No later than five (5) working days after a change in status for contractor personnel requiring entry/access (e.g., the personnel no longer require entry/access or the contractor becomes aware of a negative screening criteria (i.e., "disqualifying factor"), provide written notification of deletions of personnel to the contractor's "Listing of personnel requiring entry/access" to the Contracting Officer/designee, and return all government-issued identification passes/badges and vehicle passes/decals to the Contracting Officer/designee.

(3) Maintain a copy of all background checks for a 24-month period and ensure subsequently needed background checks are accomplished prior to the expiration of a 24-month period (See Note 3).

i. Given a reasonable cause, condition, or reason, this clause does not circumvent an installation/location commander's unilateral authority to deny or withdraw any individual's entry/access to an installation/location.

j. When work under this contract requires unescorted entry to controlled or restricted areas, the Contractor shall comply with AFI 31-101, The Air Force Installation Security Program, and AFI 31-501, Personnel Security Program Management, as applicable.

k. Contractor personnel are not covered by FAR 52.222-3, Convict Labor, for the purposes of entry/access to entry/access to installations/locations. Contractor personnel are covered by FAR 52.222-3 for the purposes of performance outside of installations/locations.

l. The Contractor shall insert this clause in any subcontract where the subcontractor will require entry/access to the installation(s)/location(s) cited in the contract.

NOTES:

NOTE 1: "LISTING OF PERSONNEL REQUIRING ACCESS/ENTRY." The Contractor shall provide a "Listing of personnel requiring entry/access" to the Contracting Officer or the Contracting Officer's designee(s).

This listing shall be submitted on company letterhead and, as a minimum, contain the following data elements:

- Contract number.
- Work site(s) or location(s).
- Performance start and stop date(s).
- As a minimum, the following information for contractor personnel requiring entry/access: full name, social security number (or other identification number), and installation(s)/location(s) to be accessed.

No contractor personnel shall be granted or authorized entry/access until identified on the "Listing of personnel requiring entry/access."

NOTE 2: CONSENT FORMS. Consent forms shall authorize the Air Force to fingerprint contractor personnel and to conduct additional background checks. In general, the consent form will outline the following:

(1) The contractor has briefed the contractor personnel for the purpose of the consent form.

(2) The information on the form is collected in accordance with 50

U.S.C. 797 and DoDD 5200.8 that permits installation commanders to limit access to installations for security reasons.

(3) Completion of the form is voluntary.

(4) Agreement to provide a specimen of fingerprints, if/when requested.

(5) Awareness of a list of "disqualifying factors" and/or access to the list.

(6) Consent and authorization for the Air Force to conduct additional background screening and to compare fingerprints against state and federal criminal databases.

(7) Knowing and willful false statements on the form can be punished by a fine or imprisonment, or both (10 U.S.C. 1001).

(8) That the consent form shall remain valid for not less than a 24-month period.

In summary, the consent forms authorize the Government to conduct additional background checks that may result in the identification of negative screening criteria (i.e., disqualifying factor(s)). If negative screening criteria is identified, the affected contractor personnel shall be denied entry/access and the Contracting Officer/designee will notify the contractor. Furthermore, the Contractor shall be responsible for immediately returning all issued identification passes/badges and vehicle passes/decals to the Contracting Officer/designee.

NOTE 3: CRIMINAL BACKGROUND HISTORY (CBH). Background checks may be obtained from local, county, or state law enforcement authorities; or commercial vendors whose checks include a criminal background history. To be considered complete, background checks shall, as a minimum, cover the employee's place(s) of residency for the 24-month period prior to contract award and provide the following information:

- Individual's name.
- Social Security Number.
- Date of birth.
- Address of current residence.
- Address of residence(s) over the past two (2) years.
- Criminal/Arrest record (felony/misdemeanor) since the 18th Birthday.
- Information on the locality(ies) checked (i.e., local, county, state, and/or federal).
- List of outstanding wants and warrants.

Depending upon local, county, or state regulations, the background check may be obtained by the contractor or the contractor personnel.

"Favorable" background checks will not contain any of the following negative screening criteria (i.e., "disqualifying factors"):

- U.S. citizenship, immigration status, or Social Security Account Number cannot be verified.
- Barred from entry/access to any military installation or facility.
- Wanted by federal or civil law enforcement authorities, regardless of offense/violation (i.e., an "order to arrest" has been issued by a

judge).
- Conviction of a firearms or explosive violation within the past three years.
- Incarcerated for 12 months or longer within the past three years, regardless of offense/violation.
- Conviction for espionage, sabotage, treason or terrorism, murder, sexual assault, armed assault/robbery, rape, child molestation, drugs possession with intent to sell, or drug distribution.
- Name appears on any federal agency's "watch list" or "hit list" for criminal behavior or terrorist activity.

Each background check shall be considered "current" for a 24-month period and valid for all contracts performed within the 24-month period of currency. Contractors shall ensure background checks are accomplished every 24 months to ensure no lapse in background check coverage. This requirement does not apply to contractor personnel that have a favorable government personnel security background investigation that is valid for a period longer than two years.

Contractor personnel who have a current, favorable government personnel security background investigation that is electronically accessible and immediately verifiable by the Government within the Joint Personnel Adjudication System (JPAS) are not required to obtain an additional background check for the purposes of complying with this clause (i.e., existing current, favorable security background investigations may be used in lieu of the requirements of this clause).

(End of clause)

1.19 CONTRACTOR QUALITY CONTROL (CQC)

See Section 01451A Contractor Quality Control.

1.20 NONDOMESTIC CONSTRUCTION MATERIALS

The List of nondomestic construction materials or their components included in the list set forth in paragraph 25.104 of the Federal Acquisition Regulation does not apply to the requirements of the contract clause entitled "Buy American Act Construction Materials".

1.21 NOTICE OF PRIORITY RATING FOR NATIONAL DEFENSE USE (SEP 1990)

Any contract awarded as a result of this solicitation will be a DO rated order certified for national defense use under the Defense Priorities and Allocations System (DPAS) (15 CFR 700), and the Contractor will be required to follow all of the requirements of this regulation. (FAR 52.211-14)\

1.22 DAILY WORK SCHEDULES AND WEEKLY COORDINATION MEETINGS

In order to closely coordinate work under this contract, the Contractor shall prepare a written agenda/meeting minutes and attend a weekly coordination meeting with the Contracting Officer and Using Service at which time the Contractor shall submit for coordination and approval, his proposed daily work schedule for the next two week period. The Contractor shall provide a copy of modifications (MODs), Serial Letters, Requests for Information (RFIs)and any other information that is needed in the minutes of the meeting. Required temporary utility services, time and duration of interruptions, and protection of adjoining areas shall be included with the Contractor's proposed 2-week work schedule. At this meeting, the

Contractor shall also submit his schedule of proposed dates and times of all preparatory inspections to be performed during the next 2 weeks. The items of work listed on the proposed 2-week schedule are to be keyed to the NAS by activity number and description for each activity anticipated to be performed during the next 2-week period. Coordination action by the Contracting Officer relative to these schedules will be accomplished during these weekly meetings. Daily reports shall be completed and given to the Contracting Officer or Representative within 24 hours of work

1.23 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE (MAR 1995)

a. This statement shall become operative only for negotiated contracts where cost or pricing data is requested, and for modifications to sealed bid or negotiated contracts where cost or pricing data is requested. This clause does not apply to terminations. See 52.249-5000, Basis for settlement of proposals and FAR Part 49.

b. Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a Contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the Contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series of equipment from the Contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, "Construction Equipment Ownership and Operating Expense

Schedule," Region V. Copies of each regional schedule may be obtained through the following Internet site: http://www.usace.army.mil/inet/usace-docs/eng-pamphlets/ep.htm. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the Contracting Officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be developed using the formula provided in the schedule. For forward pricing, the Schedule in effect at the time of negotiations shall apply. For retrospective pricing, the Schedule in effect at the time the work was performed shall apply.

c. Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback arrangements will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.

d. When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the contracting officer shall request the contractor to submit either certified cost or pricing data, or partial/limited data as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Proposal Cover Sheet. (EFARS 52.231-5000)

1.24 AS-BUILT DRAWINGS

See SECTION 01040 AS-BUILT DRAWINGS

1.25 SIGN

On commencement of work on this project, the Contractor shall furnish and erect the temporary sign in the location selected by the Contracting Officer near the project site. The Contractor shall maintain the sign in good condition through the project construction period. Upon completion of the project the Contractor shall remove the sign from the premises. The project sign shall conform to to the requirements shown on the drawings. A decal of the "Engineer Castle" and the U. S. Air Force emblem will be furnished the Contractor upon request.

1.26 NOT USED

1.27 EQUIPMENT ROOM DRAWINGS

Prior to construction, the Contractor shall prepare and submit room plans (see paragraph SUBMITTALS for conditions regarding this submittal under Design/Build procurement) for all mechanical, electrical, and communication rooms or similar areas. The plans shall be consolidated for all trades, shall be to scale, and shall show all pertinent structural features. All equipment shall be accessible and laid out in a good design and workmanship manner and layouts for communications rooms shall be completed as early as possible. In addition, other items such as doors, windows, and cabinets required for installation and which will affect the available space, will be shown. All mechanical and electrical equipment and accessories shall be shown to scale in plan and elevation and/or section in their installed positions. All duct work and piping shall be shown.

1.28 CONTRACTOR FURNISHED EQUIPMENT DATA

See Section 01200 Warranty of Construction for Contractor Furnished Equipment Data to be submitted as part of the Warranty Equipment Booklet.

1.29 PERFORMANCE OF WORK BY CONTRACTOR (APR 1984)

The Contractor shall perform on the site, and with its own organization, work equivalent to at least twenty (20) percent of the total amount of work to be performed under the contract. This percentage may be reduced by a supplemental agreement to this contract if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government. (FAR 52.236-1)

1.30 ASBESTOS AND LEAD

a. The Contractor is warned that inhalation of asbestos and lead has been associated with health hazards.

b. Asbestos-containing materials have been identified in area(s) where contract work is to be performed. All contract work activities where the potential exists for worker exposure to airborne asbestos fibers shall be performed in accordance with the requirements set forth in SECTION 13280A ASBESTOS ABATEMENT.

c. Lead has been determined to be present in some painted surfaces which are scheduled for removal/renovation. See SECTION 01400 SPECIAL SAFETY PROCEDURES for locations and proper procedures.

1.31 PARTNERING

a. The Government intends to encourage the formation of a cohesive partnership with the Contractor. This partnership will be structured to draw on the strengths of each organization to identify and achieve reciprocal goals. The objective is effective contract performance in achieving completion within budget, on schedule and in accordance with plans and specifications. This partnership between the Contractor and the Government will be voluntary and its implementation will not be part of the contract requirements nor will it result in a change to contract price or terms.

b. It is anticipated that immediately after the preconstruction conference, the appropriate Contractor's key personnel and Government key personnel will attend a 2-3 hours informal team building workshop at the Area or Resident Office (as directed).

1.32 PROFIT

a. Weighted guidelines method of determining profit shall be used on any equitable adjustment change order or modification issued under this contract. The profit factors shall be as follows:

Factor	Rate	Weight	Value
Degree of Risk	20	See Item	
Relative difficulty of work	15	b. below	
Size of Job	15		
Period of performance	15		
Contractor's investment	5		
Assistance by Government	5		
Subcontracting	25		
	100		

b. Based on the circumstances of each procurement action, each of the above factors shall be weighted from .03 to .12 as indicated below. The value shall be obtained by multiplying the rate by the weight. The value column when totaled indicates the fair and reasonable profit percentage under the circumstances of the particular procurement.

(1) Degree of Risk. Where the work involves no risk or the degree of risk is very small, the weighting should be .03; as the degree of risk increases, the weighting should be increased up to a maximum of .12. Lump sum items will have, generally, a higher weighted value than the unit price items for which quantities are provided. Other things to consider: the portion of the work to be done by subcontractors, nature of work, where work is to be performed, reasonableness of negotiated costs, amount of labor included in costs, and whether the negotiation is before or after performance of work.

(2) Relative Difficulty of Work. If the work is most difficult and complex, the weighting should be .12 and should be proportionately reduced to .03 on the simplest of jobs. This factor is tied in to some extent with the degree of risk. Some things to consider: the nature of the work, by whom it is to be done, where, and what is the time schedule.

(3) Size of Job. All work not in excess of $100,000 shall be weighted at .12.

Work estimated between $100,000 and $5,000,000 shall be proportionately weighted from .12 to .05.

(4) Periods of Performance. Jobs in excess of 24 months are to be weighted at .12. Jobs of lesser duration are to be proportionately weighted to a minimum of .03 for jobs not to exceed 30 days. No weight where additional time not required.

(5) Contractor's Investment. To be weighted from .03 to .12 on the basis of below average, average, and above average. Things to consider: amount of subcontracting, mobilization payment item, Government furnished property, equipment and facilities, and expediting assistance.

(6) Assistance by Government. To be weighted from .12 to .03 on the basis of average to above average. Things to consider: use of Government-owned property, equipment and facilities, and expediting assistance.

(7) Subcontracting. To be weighted inversely proportional to the amount of subcontracting. Where 80 percent or more of the work is to be subcontracted, the weighting is to be .03 and such weighting proportionately increased to .12 where all the work is performed by the Contractor's own forces.

1.33 LABOR CONDITIONS APPLICABLE TO TEMPORARY FACILITIES

It is the position of the Department of Defense that the Davis-Bacon Act, 40 U.S.C. 276a is applicable to temporary facilities such as batch plants, sandpits, rock quarries, and similar operations, located off the immediate site of the construction but set up exclusively to furnish required materials for a construction project on the site of the work. Clause "Payrolls and Basic Records" of the CONTRACT CLAUSES is applicable to such operations.

1.34 DRAWING SCALES

All scales shown on the RFP project drawings are based on a standard drawing size of 28" x 40" . If any other size drawings are furnished or plotted, the contractor shall adjust the scales accordingly. The Contractor shall also advise his sub-contractors of the above.

1.35 WAGE RATE APPLICATION

1.35.1 Building Schedule

The Building wage decision is to be used for the building addition and building alteration of the existing Building 350 and any incidental construction to the building, such as grading, utilities, and paving, but excludes work covered by Heavy and Highway Schedules.

1.35.2 Heavy Schedule

Applicable to all work required for demolition of Bldg 880 and follow on site work for this area.

1.35.3 Highway Schedule

Applicable to all work required for demolition of Bldg 365 and new parking lot required for this area.

1.36 (FAR 52.222-23) NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)

a. The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

b. The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for Minority Participation for Each Trade	Goals for Female Participation for Each Trade
10.9	6.9

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

c. The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

d. The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the -

(1) Name, address, and telephone number of the subcontractor;

(2) Employer identification number of the subcontractor;

(3) Estimated dollar amount of the subcontract;

(4) Estimated starting and completion dates of the subcontract; and

(5) Geographical area in which the subcontract is to be performed.

e. As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is Colorado Springs SMSA-1720, which El Paso County is a part of.

1.37 FEDERAL HOLIDAYS

The following Federal legal holidays are observed by this installation:

New Year's Day	1 January
Martin Luther King's Birthday	Third Monday in January
President's Day	Third Monday in February
Memorial Day	Last Monday in May
Independence Day	4 July
Labor Day	First Monday in September
Columbus Day	Second Monday in October
Veterans Day	11 November
Thanksgiving Day	Fourth Thursday in November
Christmas Day	25 December

If a wage determination applies the number of holidays specified on it, it has priority over this clause.

1.38 BASE HOURS

Base operation hours are 6:00 a.m. to 6:00 p.m. daily (Monday through Friday), excluding federal holidays. Access to the base during other times must be requested in writing from the Contracting Officer and will be granted only for extenuating circumstances.

1.39 APPLICATION OF "VALUE ENGINEERING" CLAUSE

Contract Clauses clause "Value Engineering" is only applicable to changes to prescriptive RFP criteria requirements approved by the Contracting Officer, where there are cost savings to the Government. Any other changes, resulting in cost savings, which meet or exceed the requirements of the RFP, are not applicable to the Value Engineering clause.

PART 2 NOT USED

PART 3 NOT USED

-- End of Section --

General Decision Number: CO030006 06/18/2004 CO6

Superseded General Decision Number: CO020006

State: Colorado

Construction Type: Building

County: El Paso County in Colorado.

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories).

Modification Number	Publication Date
0	06/13/2003
1	08/15/2003
2	09/19/2003
3	10/03/2003
4	12/05/2003
5	01/16/2004
6	04/16/2004
7	05/14/2004
8	06/18/2004

BRCO0007-002 10/01/2003

	Rates	Fringes
Bricklayer	$ 20.02	8.20

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* CARP0001-003 05/01/2004

	Rates	Fringes
Carpenters:		
All Other Work (Including Formbuilding/Formsetting)	$ 22.45	7.44

ELEC0113-001 06/01/2003

	Rates	Fringes
Electrician (Including Low Voltage Wiring and Installation of Fire Alarms, Computers, Telephones and Temperature Controls)	$ 24.54	3%+11.20

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* ELEV0025-002 01/01/2004

	Rates	Fringes
Elevator Constructor	$ 28.525	10.765+a

FOOTNOTE:
a. Employer contributes 8% of basic hourly rate for over 5 years' service and 6% basic hourly rate for 6 months' to 5 years' service as Vacation Pay Credit.

SEVEN PAID HOLIDAYS: New Year's Day; Memorial Day; Independence Day; Labor Day; Veterans Day; Thanksgiving Day; Friday after Thanksgiving Day; and Christmas Day.

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* ENGI0009-005 05/01/2004

	Rates	Fringes
Power equipment operators:		
Backhoe: 3/4 yd. and over	$ 20.42	6.72
Backhoe: Belt & Elevating	$ 20.72	6.72
Backhoe: under 3/4 yd	$ 20.27	6.72
Crane: 50 tons and under	$ 20.42	6.72
Crane: 51 to 90 tons	$ 20.57	6.72
Crane: 91 to 140 tons	$ 20.72	6.72
Crane: 141 tons and over	$ 21.48	6.72
Front End Loader: over 6 cubic yards	$ 20.42	6.72
Front End Loader: up to and including 6 cy	$ 20.27	6.72

Roller: self propelled, all types over 5 tons	$ 20.27	6.72
Roller: self-propelled, rubber tires under 5 tons	$ 19.92	6.72
Scraper: single bowl including pups 40 cubic yards and over and tandem bowls	$ 20.57	6.72
Scraper: single bowl under 40 cubic yards	$ 20.42	6.72
Trackhoe	$ 20.42	6.72
Water Wagon	$ 20.42	6.72

IRON0024-002 08/01/2002

	Rates	Fringes
Ironworker, reinforcing and structural	$ 22.00	5.85

LABO0720-001 05/01/2002

	Rates	Fringes
Laborers:		
Common and Concrete/Mason Tenders	$ 14.20	4.55
Common and Concrete/Mason Tenders	$ 13.50	4.23

PAIN0930-001 07/01/2003

	Rates	Fringes
Glazier	$ 25.35	6.20

PLAS0577-001 05/01/2004

	Rates	Fringes
Cement Mason/Concrete Finisher	$ 22.31	6.90

PLUM0058-001 07/01/2003

	Rates	Fringes
Plumber/Pipefitter (Including HVAC pipe) & (Excluding HVAC work)	$ 24.95	7.90

ROOF0058-001 05/01/2003

	Rates	Fringes
Roofer	$ 17.50	3.43

SHEE0009-001 07/01/2003

	Rates	Fringes
Sheet metal worker (Includes HVAC duct and installation of HVAC systems)	$ 26.59	9.70

SUCO2001-007 12/20/2001

	Rates	Fringes
Carpenters:		
Acoustical	$ 15.02	.76
Drywall Framing/Hanging and Metal Stud Work	$ 15.16	2.33
Drywall Finisher/Taper	$ 14.42	.62
Mechanical Insulator/Asbestos Worker (Including application of all insulating materials, protective coverings, coatings and finishings to all types of mechanical systems)	$ 13.88	
Painters:		
Brush, Roller & Spray	$ 11.29	3.11

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter

* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations

Wage and Hour Division

U.S. Department of Labor

200 Constitution Avenue, N.W.

Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator

U.S. Department of Labor

200 Constitution Avenue, N.W.

Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board

U.S. Department of Labor

200 Constitution Avenue, N.W.

Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

General Decision Number: CO030012 06/18/2004 CO12

Superseded General Decision Number: CO020012

State: Colorado

Construction Types: Heavy

Counties: Adams, Arapahoe, Boulder, Denver, Douglas, El Paso, Jefferson, Larimer, Mesa, Pueblo and Weld Counties in Colorado.

HEAVY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	06/13/2003
1	08/15/2003
2	09/19/2003
3	10/03/2003
4	12/05/2003
5	01/16/2004
6	02/20/2004
7	03/05/2004
8	04/16/2004
9	05/14/2004
10	06/18/2004

ASBE0028-001 01/01/2004

	Rates	Fringes
Asbestos Workers/Insulator (Includes application of all insulating materials, protective coverings, coatings and finishings to all types of mechanical systems)	$ 19.47	6.25

BRCO0007-006 01/01/2004

ADAMS, ARAPAHOE, BOULDER, DENVER, DOUGLAS, EL PASO, JEFFERSON, AND PUEBLO COUNTIES

	Rates	Fringes
Bricklayer	$ 20.02	8.20

CARP2834-001 05/01/2003

	Rates	Fringes
Millwright	$ 24.49	6.66

ELEC0012-004 09/01/2003

PUEBLO COUNTY

	Rates	Fringes
Electrician	$ 18.98	8.44
Electrical work where the total cost is $200,000 or less		
Electricians:	$ 24.74	8.44
Electrical work where the total cost is over $200,000		

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* ELEC0068-001 06/01/2004

ADAMS, ARAPAHOE, BOULDER, DENVER, DOUGLAS, JEFFERSON, LARIMER, AND WELD COUNTIES

	Rates	Fringes
Electrician	$ 28.91	9.51

ELEC0111-001 01/01/2004

	Rates	Fringes
Line Construction:		
Groundman	$ 14.05	20.75%+3.75
Lineman	$ 27.88	20.75%+3.75

ELEC0113-002 06/01/2003

EL PASO COUNTY

	Rates	Fringes
Electrician	$ 24.54	3%+11.20

ELEC0969-002 12/01/2003

MESA COUNTY

	Rates	Fringes
Electrician	$ 18.40	7.20

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* ENGI0009-001 05/01/2004

	Rates	Fringes
Power equipment operators:		
Blade: Finish	$ 20.57	6.72
Blade: Rough	$ 20.27	6.72
Bulldozer	$ 20.27	6.72
Cranes: 50 tons and under	$ 20.42	6.72
Cranes: 51 to 90 tons	$ 20.57	6.72
Cranes: 91 to 140 tons	$ 20.72	6.72
Cranes: 141 tons and over	$ 21.48	6.72
Forklift	$ 19.92	6.72
Mechanic	$ 20.42	6.72
Oiler	$ 19.57	6.72
Roller: Self-propelled, all types over 5 tons	$ 20.27	6.72
Roller: Self-propelled, rubber tires under 5 tons	$ 19.92	6.72
Scraper: Single bowl under 40 cubic yards	$ 20.42	6.72
Scraper: Single bowl, including pups 40 cubic yards and over and tandem bowls	$ 20.57	6.72
Trackhoe	$ 20.42	6.72

IRON0024-003 08/01/2002

	Rates	Fringes
Ironworkers: Structural	$ 22.00	7.61

LABO0086-001 05/01/2003

	Rates	Fringes
Laborers:		
Pipelayer	$ 16.29	4.25

PLUM0003-005 01/01/2004

ADAMS, ARAPAHOE, BOULDER, DENVER, DOUGLAS (Northern half),
JEFFERSON, LARIMER AND WELD COUNTIES

	Rates	Fringes
Plumber	$ 27.52	7.11

PLUM0020-002 07/01/2003

PUEBLO COUNTY

	Rates	Fringes
Plumbers and Pipefitters		
Free Zone - 0 to 40 miles	$ 20.10	7.57

Zone 1 - 40 miles and over: $19.85 per hour + $32.00 per day per diem will be paid on projects over 40 miles (Zone 1) measured in practical driving miles by the shortest route, beginning at 5th and Main Streets in Pueblo, Colorado, when the employee stays overnight or drives their own vehicle.

Hazardous pay: Add $2.20 per hour to base rate. Hazardous pay applies to projects at chemical plants, steel mills, cement plants, power generator plants, process piping at manufacturing plants, food processing plants, and all projects which may present a health hazard or serious personal injury.

PLUM0058-002 07/01/2003

EL PASO AND DOUGLAS (Southern half) COUNTIES

	Rates	Fringes
Plumbers and Pipefitters	$ 24.95	7.90

PLUM0145-002 05/01/2004

MESA COUNTY

	Rates	Fringes
Plumbers and Pipefitters	$ 22.28	6.95

PLUM0208-004 01/01/2004

ADAMS, ARAPAHOE, BOULDER, DENVER, DOUGLAS (Northern half),
LARIMER AND WELD COUNTIES

	Rates	Fringes
Pipefitter	$ 27.47	7.21

SHEE0009-002 07/01/2003

	Rates	Fringes
Sheet metal worker	$ 26.59	9.70

SUCO2001-006 12/20/2001

	Rates	Fringes
Boilermaker	$ 17.60	
Carpenters:		
Form Building and Setting	$ 16.97	2.74
All Other Work	$ 15.14	3.37
Cement Mason/Concrete Finisher	$ 17.31	2.85
Ironworker, Reinforcing	$ 18.83	3.90
Laborers:		
Common	$ 11.22	2.92
Flagger	$ 8.91	3.80
Landscape	$ 12.56	3.21
Painters:		
Brush, Roller & Spray	$ 15.81	3.26
Power equipment operators:		
Backhoe	$ 16.36	2.48
Front End Loader	$ 17.24	3.23
Skid Loader	$ 15.37	4.41

TEAM0435-001 05/01/2000

	Rates	Fringes
Truck drivers:		
Pickup	$ 14.21	5.27
Tandem/Semi and Water	$ 14.93	5.27

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

General Decision Number: CO030014 06/18/2004 CO14

Superseded General Decision Number: CO020014

State: Colorado

Construction Types: Highway

Counties: Adams, Arapahoe, Boulder, Denver, Douglas, El Paso, Jefferson, Larimer, Mesa, Pueblo and Weld Counties in Colorado.

HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	06/13/2003
1	08/15/2003
2	09/19/2003
3	01/16/2004
4	03/05/2004
5	06/18/2004

ELEC0012-005 09/01/2003

PUEBLO COUNTY

	Rates	Fringes
Electrician		
(Excluding traffic signal installation):		
Electrical work where the total cost is $200,000 or less	$ 18.98	8.44
Electrical work where the total cost is over $200,000	$ 24.74	8.44

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* ELEC0068-012 06/01/2004

ADAMS, ARAPAHOE, BOULDER, DENVER, DOUGLAS, JEFFERSON, LARIMER AND WELD COUNTIES

	Rates	Fringes
Electrician		
(Excluding traffic signal installation)	$ 28.91	9.51

ELEC0113-005 06/01/2003

EL PASO COUNTY

	Rates	Fringes
Electrician		
(Excluding traffic signal installation)	$ 24.54	3%+11.20

ELEC0969-005 12/01/2003

MESA COUNTY

	Rates	Fringes
Electrician		
(Excluding traffic signal installation)	$ 18.40	7.20

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* ENGI0009-002 05/01/2004

	Rates	Fringes
Power equipment operators:		
Asphalt Screed	$ 20.27	6.72
Bituminous or Asphalt Spreader/Laydown Machine	$ 20.27	6.72
Bulldozer	$ 20.27	6.72
Crane: 50 tons and under	$ 20.42	6.72
Crane: 51 to 90 tons	$ 20.57	6.72

Crane: 91 to 140 tons.....	$ 20.72	6.72
Crane: 141 tons and over....	$ 21.48	6.72
Drill Operator: William MF/Watson 2500 only.....	$ 20.57	6.72
Grader/Blade: Finish.....	$ 20.57	6.72
Grader/Blade: Rough.....	$ 20.27	6.72
Loader: Barber Green, etc. & Up to and including 6 cubic yards.....	$ 20.27	6.72
Loader: Mechanic/Welder (heavy duty).....	$ 20.57	6.72
Loader: Over 6 cubic yards..	$ 20.42	6.72
Mechanic and/or Welder (Includes heavy duty & combination mechanic and welder):.....	$ 20.42	6.72
Oiler.....	$ 19.57	6.72
Power Broom: 70 HP and over.	$ 20.27	6.72
Power Broom: Under 70 HP....	$ 19.57	6.72
Roller: Self-propelled, all types over 5 tons.....	$ 20.27	6.72
Roller: Self-propelled, rubber tires under 5 tons...	$ 19.92	6.72
Scraper: Single bowl including pups 40 cubic yards and tandem bowls and over.....	$ 20.57	6.72
Scraper: Single bowl under 40 cubic yards.....	$ 20.42	6.72
Trackhoe.....	$ 20.42	6.72
Water Truck.....	$ 20.42	6.72

LABO0086-002 05/01/2002

	Rates	Fringes
Laborers:		
Asphalt Laborer/Raker, Common Laborer & Concrete Laborer/Mason Tender.....	$ 16.29	4.25
Asphalt Laborer/Raker, Common Laborer & Concrete Laborer/Mason Tender.....	$ 15.69	3.95

SUCO2001-003 12/20/2001

	Rates	Fringes
Bricklayer.....	$ 15.55	2.85
Carpenters:		
Form Work (Excluding Curbs & Gutters).....	$ 16.54	3.90
All Other Work.....	$ 16.61	3.88
Concrete Finisher/Cement Mason.	$ 16.05	3.00
Ironworkers:		
Bridge Rail (Excludes Guardrail).....	$ 18.22	6.01

Reinforcing	$ 16.69	5.45
Laborers:		
Fence Erector (Includes fencing on bridges)	$ 13.02	3.20
Form Work (Curbs & Gutters only)	$ 11.85	3.45
Guardrail Erector (Excludes bridgerail)	$ 12.89	3.20
Landscape and Irrigation Laborer	$ 12.26	3.16
Pipelayer	$ 13.55	2.41
Striping Laborer (Pre-form layout and removal of pavement markings)	$ 12.62	3.21
Traffic and Sign Laborer (Sets up barricades and cones, and installs permanent signs)	$ 12.43	3.22
Traffic Director/Flagger	$ 9.55	3.05
Painters:		
Brush	$ 16.94	2.10
Spray	$ 16.99	2.87
Power equipment operators:		
Backhoes	$ 16.54	4.24
Bobcat/Skid Loader	$ 15.37	4.28
Compactor	$ 16.70	3.30
Concrete Pump Operator	$ 16.52	4.30
Drill Operator: All except William MF/ Watson 2500	$ 16.74	2.66
Forklift	$ 15.91	4.09
Post Driver/Punch Machine	$ 16.07	4.41
Rotomill Operator	$ 16.22	4.41
Tractor	$ 13.13	2.95
Traffic Signal Installer		
Groundsman	$ 11.44	3.25
Traffic Signal Installer	$ 18.66	4.12
Truck drivers:		
Floats-Semi Truck	$ 14.86	3.08
Multipurpose Truck-Specialty & Hoisting	$ 14.35	3.49
Pickup Truck (Includes Pilot and Sign/Barricade Truck)	$ 13.93	3.68
Single Axle Truck	$ 14.24	3.77
Truck Mechanic	$ 16.91	3.01

TEAM0435-002 05/01/2000

	Rates	Fringes
Truck drivers:		
Distributor Truck	$ 15.80	5.27
Dump Truck: To and including 6 cubic yards & over 6 cubic yards to and including 14 cubic yards	$ 14.93	5.27
Low Boy Truck	$ 17.25	5.27

Over 14 cubic yards to and including 29 cubic yards....	$ 15.27	5.27
Over 29 cubic yards to and including 79 cubic yards....	$ 15.80	5.27
Over 79 cubic yards.....	$ 16.45	5.27

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

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Washington, DC 20210

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==========

END OF GENERAL DECISION

BASE CIVIL ENGINEERING WORK CLEARANCE REQUEST

(See Instructions on Reverse)

DATE PREPARED

1. Clearance is requested to proceed with work at _____

on Work Order No. _____ , Contract No._____ , involving excavation or utility disturbance per

attached sketch. This area ☐ has ☐ has not been staked or clearly marked.

2. TYPE OF FACILITY/WORK INVOLVED

	A. PAVEMENTS		D. FIRE DETECTION & PROTECTION SYSTEMS					G. AIRCRAFT OR VEHICULAR TRAFFIC FLOW
	B. DRAINAGE SYSTEMS		E. UTILITY		OVERHEAD		UNDERGROUND	H. SECURITY
	C. RAILROAD TRACKS		F. COMM		OVERHEAD		UNDERGROUND	I. OTHER

3. DATE CLEARANCE REQUIRED	4. DATE OF CLEARANCE	
5. SIGNATURE OF REQUESTING OFFICIAL	6. TELEPHONE NO.	7. ORGANIZATION

	ORGANIZATION	REMARKS *(Use Reverse for additional comments)*	REVIEWER'S NAME AND INITIALS
8. BASE CIVIL ENGINEERING	A. ELECTRICAL DISTRIBUTION		
	B. STEAM DISTRIBUTION		
	C. WATER DISTRIBUTION		
	D. POL DISTRIBUTION		
	E. SEWER DISTRIBUTION		
	F. ENVIRONMENTAL		
	G. PAVEMENTS/ GROUNDS		
	H. FIRE PROTECTION		
	I. ZONE _____		
	J. OTHER *(Specify)*		
9. SECURITY POLICE			
10. SAFETY			
11. COMMUNICATIONS			
12. BASE OPERATIONS			
13. CABLE TV			
14. COMMERCIAL UTILITY COMPANY ☐ TELEPHONE ☐ GAS ☐ ELECTRIC			

15. OTHER *(Specify)* _____

16. REQUESTED CLEARANCE ☐ APPROVED ☐ DISAPPROVED

17. TYPED NAME AND SIGNATURE OF APPROVING OFFICER *(Chief of Operations Flight or Chief of Engineering Flight)*	17a. DATE SIGNED

INSTRUCTIONS

The BCE work clearance request is used for any work (contract or in-house) that may disrupt aircraft or vehicular traffic flow, base utility services, protection provided by fire and intrusion alarm system, or routine activities of the installation. This form is used to coordinate the required work with key base activities and keep customer inconvenience to a minimum. It is also used to identify potentially hazardous work conditions in an attempt to prevent accidents. The work clearance request is processed just prior to the start of work. If delays are encountered and the conditions at the job site change (or may have changed) this work clearance request must be reprocessed.

18. REMARKS. *(This section must describe specific precautionary measure to be taken before and during work accomplishment. Specific comments concerning the approved method of excavation, hand or powered equipment, should be included.)*

USAF CONTRACTOR/SUBCONTRACTOR ACCESS AFFIDAVIT

This data will be used to screen individuals who have or are seeking access to US Air Force installations or facilities controlled by the US Air Force. Please answer each question.
Access will be denied if this questionnaire is incomplete or missing from the Contractor Access packet. This information will be used to generate state and federal criminal history records checks.

1. NAME *(Last, First, Middle)*	2. CADENCY	3. SEX	4. SSAN	5. DATE OF BIRTH *(YYYYMMMDD)*	6. RACE

7. SCARS/MARKS/TATOOS	8. HAIR COLOR	9. EYE COLOR	10. HEIGHT	11. WEIGHT

12. ALIAS *(If Applicable)*	13. DRIVER'S LICENSE #	14. STATE

15. CURRENT RESIDENCE ADDRESS	16. CITY	17. STATE	18. ZIP CODE	19. COUNTRY

PLACE OF BIRTH

20. CITY	21. STATE *(If Applicable)*	22. COUNTRY

23. CITIZENSHIP	24. RESIDENT ALIEN # or IMMIGRATION DOCUMENT # and DESCRIPTION

PLEASE ANSWER THE FOLLOWING QUESTIONS:

	YES	NO
Have you ever been barred from entry/access to any military installation or facility?		
Are you wanted by federal or civilian law enforcement authorities, regardless of offense or violation? (i.e., has a judge issued an order for your arrest)?		
Have you ever been convicted of a firearms or explosives violation within the past three years?		
Have you ever been incarcerated for 12 months or longer within the past three years, regardless of offense or violation?		
Have you ever been convicted of espionage, sabotage, treason or terrorism, murder, sexual assault, armed assault or robbery, rape, child molestation, drug possession with intent to sell, or drug distribution?		

NOTE TO APPLICANT: ATTESTATION

I attest to the fact that I have been briefed by my employer and understand the purpose for the contractor background check. I understand the information on this form is being collected in accordance with 50 U.S.C., Section 797, and DoDD 5200.8 federal laws permitting the installation commander to limit access to the installation for security reasons and that this data will be used to screen DoD contractor employees who have or are seeking access to US Air Force installations. I have voluntarily completed this "Form" and shall provide the Air Force a specimen of my fingerprints, if/when requested. I understand that by signing this application, I acknowledge that I have been made aware of and have reviewed that Air Force's list of "disqualifying factors" above. I hereby give my consent and authorization for the Air Force to conduct any additional background screenings deemed necessary over the next 24 months, to include comparing/checking my fingerprints against local, state, an federal criminal databases. The information I have provided on this application is true, complete, and correct to the best of my knowledge and belief, and is provided in good faith. I understand that a knowing and willfull false statement on this application can be punished by a fine or imprisonment or both. (18 U.S.C Section 1001)

Applicant Signature: _____ Date: _____

Company Name: _____

Processing Officer: _____

Contract Number: _____

Fingerprints Taken? YES NO

NCIC Check Done? YES NO

APPROVE/DISAPPROVE Reason: _____

_____

_____

_____

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01001

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1.1.2 Building Arrangement
1.2 GOALS AND OBJECTIVES
1.2.1 Codes
1.2.2 Building Durability
1.2.3 Changes to RFP Criteria Requirements
1.2.4 Sustainable Design and Development Technology
1.3 FACILITY TYPE, AND SIZE
1.3.1 Facility Type - Permanent Construction
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1.4 PERSONNEL AND EQUIPMENT
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1.6 OPERATION AND MAINTENANCE REQUIREMENTS
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-- End of Section Table of Contents --

SECTION 01001

SUMMARY OF WORK

PART 1 SUMMARY OF WORK

1.1 FUNCTION

1.1.1 ADAL Mission Support Facility

The ADAL Mission Support Facility will be located at Peterson AFB, Colorado, and will provide a quality facility for the 21st Mission Support Squadron. The facility will enhance the ability of the squadrons to perform operation management, briefings/debriefings, planning, training, testing, safety, evaluations and scheduling within the Mission Support Facility.

The facility will be sited at the South Eastern corner Peterson Blvd. and Dover Street. The project will consists of the construction of a 2-story facility addition to the existing Building #350. The new facility addition shall be compatible with the existing facility design and the Peterson AFB architectural and design standards that includes; parking, exterior lighting, sidewalks and landscaping.

The anticipated staffing for this facility is approximately 300 people.

There will be new landscaping, sodding and irrigation, and seeding. All areas disturbed by construction activities not being otherwise surfaced will be zeroscaping.

1.1.2 Building Arrangement

Overall configuration of the facility is an extension of the existing facility on the North and East side and continues the same overall architectural design aesthetics and building imagery. This new facility addition consists mainly of general office space and it's related support areas. The support spaces consist of conference rooms, break rooms, restrooms, storage, mechanical, electrical and communications areas. Also, included in this scope of work is renovation of spaces within the existing facility.

1.2 GOALS AND OBJECTIVES

Based on user interviews, Peterson AFB personnel requirements, completed user questionnaires, and a programming/design charrette, the goals are as follows:

1.2.1 Codes

All applicable building codes, DOD minimum AT Standards, and life safety codes shall be met or exceeded. Applicable codes are listed in each section.

1.2.2 Building Durability

Materials and equipment will be chosen for their durability and minimum or nonexistent maintenance. Matching existing facility materials shall be

required for this project. The building design will conserve man made resources and energy usage.

1.2.3 Changes to RFP Criteria Requirements

This Request for Proposal provides requirements expected of the design-build Contractor during the design and construction of this project.

The RFP drawings presents an overall design concept of the project, provides useful project information, establishes some definition of the systems to be used and incorporates requirements expected by the Using Service.

It shall be the responsibility of the design-build Contractor to assemble the best value-priced construction systems for this project that meet or exceed the design criteria set forth herein.

Offerors should not consider changes to RFP criteria requirements during proposal preparation. After contract award, any changes to the RFP criteria requirements require approval by the Contracting Officer.

See Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES for additional requirements, paragraph 3.2 SPECIFICATIONS.

1.2.4 Sustainable Design and Development Technology

To the extent referenced in the solicitation, the Contractor shall provide a facility which utilizes sustainable design and development principles. Green building technology shall be incorporated into the design of this facility that will consider the use of passive solar, and solar hot water heating. The basic objectives are to:

1) Reduce consumption of energy, land and other non-renewable resources.

2) Minimize waste of materials, water, and other limited resources.

3) Consider the cost of energy dollars while creating livable, healthy and productive environments that maintain comfort, health, and safety for the people using the facility.

4) The Contractor shall provide throughout the course of the design, a summary documentation of all items and categories in LEED whether incorporated or not. This documentation will serve as a self-assessment and record for Peterson AFB. This facility shall meet the requirements of achieving at least a "Bronze" rating. The Contractor shall coordinate with Base personnel and applicable Air Force personnel for any specific requirements relating to sustainable design. The Leeds Green Building Rating System Version 2.1, Project Checklist, available from the U.S. Green Building Council, shall be completed by the contractor and submitted to the government for information only. The goal for this project is for the facility to be LEEDS certifiable. Cost effective measures for diverting waste from landfills utilizing recycling shall be made.

5) Green Building Technology and Whole Building Design are referenced names involving sustainable design and development

principles.

Related References:

ETL 1110-3-491 (31 January 2000) Sustainable Design for Military Facilities

Web Sites to Consider for Sustainable Design and Development:

EPA Designated product (available at http://www.epa.gov/cpg)

Green Building Council: http://www.usgbc.org

Whole Building Design Guide: http://www.wbdg.org/

Energy Star Building Program - Environmental Protection Agency: http:www.epa.gov/energystar/

Leadership in Energy and Environmental Design Green Building Rating System Criteria (LEED) U.S. Green Building Council: http://www.usgbc.org/programs.leed.htm

U. S. Department of Energy:

www.eren.doe.gov/buildings/build_design.html

1.3 FACILITY TYPE, AND SIZE

1.3.1 Facility Type - Permanent Construction

The ADAL Mission Support Facility is adequately sized, configured, and will be located at Peterson AFB, Colorado.

1.3.2 Facility Size

The ADAL Mission Support Facility project is programmed at approximately 60,000 gross square feet (5,576 square meters) for the new facility addition. In addition to the new construction, spaces in the existing Building #350 shall be reconfigured and remodeled. See the drawings for the facility scope of work areas.

1.4 PERSONNEL AND EQUIPMENT

The complete facility design shall provide a completed facility for an approximate 300 full time employees and will be operational up to 14 hours per day, 7 days per week.

1.5 DRAWINGS

Functional concept drawings of the site area, floor plans, building sections, and elevations are included for use in developing this design.

1.6 OPERATION AND MAINTENANCE REQUIREMENTS

1.6.1 Operation and Maintenance Manuals

The intent of the O&M Manuals are to promote and maximize the efficiency, economy, safety, and effectiveness of the life cycle operation, maintenance, and repair of the facility. Operation and maintenance manuals

as required by the UFGS Technical Specifications (Divisions 2 thru 16) to be edited by the contractor shall be provided.

1.6.2 Training

The Contractor shall provide operational and maintenance training for all systems furnished under this contract. The training will be for the operating and maintenance personnel. The training shall be put on by the system manufacturer. The training shall not take place until the operation and maintenance manuals are submitted and approved. The Contractor shall video tape the training session on VHS tapes or DVD's and provide tapes or DVD's to the Government. The Contractor shall schedule operational and maintenance training with the Contracting Officer 30 days prior to such training.

1.7 OVERVIEW OF DESIGN-BUILD PROCESS

1.7.1 Overview

Since the early 1980s Congress has urged the military services to explore alternative construction methods, such as "Design-Build," which includes both design and construction under a single contract. This process is similar to "one-step turnkey selection procedures" and is defined in Title 10 of the United States Codes, Section 2862.

1.7.2 Process

The design-build process uses a Request for Proposal (RFP) to solicit for design and construction of a facility by a single contractual entity, such as a design-build firm, or joint venture between architect-engineer (A-E) and construction firm, or a construction management (CM) firm joint venture with an A-E and a construction firm. A design-build RFP states the project functional requirements, design and engineering criteria, technical performance specifications, and proposal evaluation factors. Potential contractors develop their proposals for the government to evaluate competitively, with the contract award based on a combination of technical merit and price.

In general, the RFP is a conceptual design document and the design-build contractor is responsible for completing the design and constructing the project.

The plans provided in this Request For Proposal (RFP) shows the User's intent and expectations. The RFP has developed the site plan and building design and given the facility an architectural character.

The design-build Contractor will be required to coordinate final dimensioning, detailing, furniture arrangements and other items necessary to make this a usable facility in accordance with the furnished RFP drawings. The design-build Contractor will have some design flexibility to "slightly" move walls, columns, doors, furniture and other shown items necessary to accommodate the required design deliverables, including the systems furniture. The facility exterior perimeter shall not be less than shown in the RFP drawings. These designs, with permitted flexibility for detailing and constructibility, must be carried through to construction. The design-build contractor is responsible for all other designs on the project, such as the HVAC system, as long as they fit within the established criteria, and can be built on time and within budget.

The RFP furnished design drawings may be used by the design-build Contractor. However, the Contractor agrees to hold the Government harmless in acceptance of these drawings. It shall be the design-build Contractor's responsibility to verify all dimensions, AutoCAD drafting and accuracy for the design drawings prepared by the design-build Contractor.

After award of the contract, the design-build contractor will prepare a series of design submittals for review by the Government, so that design and criteria compliance can be effectively monitored for compliance. After approval of the final design, construction can begin. On-site construction activities shall not begin until all final corrected plans, specifications and design analysis for the entire project have been approved by the Government.

1.8 DESIGN-BUILD CONTRACTOR REQUIRED A/E SERVICES

The following is a condensed summary of Section 01332, "DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES" contained elsewhere in this document. Refer to this Section for the full requirements.

1.8.1 Dimensions

Design, products and construction for the ADAL Mission Support Facility project shall be designed and constructed using English expressions of measurement. All measurements in the technical performance specifications sections are shown in English. The existing Building #350 was designed in metric measurements, however constructed using English measurements.

1.8.2 Professional Registrations, Licenses and/or Certifcations

The award of contract will be made to one qualified contractual entity who will be responsible for design completion and the entire construction process for the facility. This contractual entity shall employ qualified building design professionals with appropriate professional registration, state licenses and/or certifications. The designer qualifications and experience shall be as submitted per the requirements of Section 00110 PROPOSAL INSTRUCTIONS, SUBMISSION REQUIREMENTS AND EVALUATION.

1.8.3 Request For Proposal - Binding Information

The information contained in this Request for Proposal (RFP) shall be considered binding unless specifically waived by the Contracting Officer. The successful offeror's proposal, along with any clarifications and/or best and final offers are a binding part of this contract. Site design, building design, architectural character and engineering/performance criteria shall be implemented through construction by the design-build contractor.

1.8.4 Evaluation of Systems

As part of the basic services, the design-build contractor shall evaluate building systems and components for their possible inclusion into the design. If these systems and components meet the specified design and performance criteria in the RFP, they may then be incorporated into the work.

1.8.5 Document Requirements

For a more detailed list of design and construction submittals, see Section

01332, DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES.

1.8.5.1 Design documents at all stages of design include:

Construction drawings.

Specifications.

Design analysis narrative with calculations for all disciplines.

Magnetic media on CD-ROM at the 100 percent corrected final design only.

Summary analysis of Sustainable Design and Development features and principles based on the Leeds Green Building Rating System Version 2.1 rating system to achieve the rating category as previously defined. Explanation and costs of all categories and features included in this design will be documented. This will be an integral part of the Design Analysis.

1.8.5.2 Drawing Requirements

All design drawings shall be accomplished using English unit measurement. Prepare 28-inch x 40-inch full-size drawings and half-size drawings in accordance with the Omaha District CADD Standards Manual.

The design-build contractor shall submit the design at various stages of completion, plus the final documents, for review and comment. These stages are:

60 percent design submittal.

100 percent design submittal.

100 percent corrected final design.

1.8.5.3 60 Percent Design Requirements

Drawings, including electrical panel schedules and mechanical equipment schedules, draft specifications, design analysis and calculations for all disciplines at an approximate 60 percent level of completion. See SECTION 01336 60 PERCENT DESIGN REQUIREMENTS for additional information.

Color boards for SID. NOTE: SID package shall be final at the 60% submittal. The 100% submittal shall be updated as required.

1.8.5.4 100 Percent Design Requirements

Incorporate all comments from the 60 percent review.

Drawings, specifications, design analysis and calculations for all disciplines at 100 percent level of completion. All aspects of the project are complete. See SECTION 01338 100 PERCENT DESIGN REQUIREMENTS for additional information.

Updated Color boards; SID.

1.8.5.5 100 Percent Corrected Final Design

Incorporate comments from the 100 percent design submittal.

Magnetic media.

1.9 COMMON DEFICIENCIES

Following are some common costly deficiencies to be avoided in the preparation of contract documents. Carefully compare the architectural design and contract documents with these requirements at several points in the design process to avoid unnecessary changes later.

Not using correct abbreviations or terminology on the drawings. Abbreviations must match what is used on the standard abbreviation sheet and terminology must match what is used in the standard guide specifications.

Not using the correct scales, north arrow designation, section cut system, or incomplete dimensioning on the drawings.

Not providing sufficient space for door operation hardware at doors which swing into a wall running perpendicular to the opening.

Not providing correct and complete Design Analysis information written in the present tense. The Design Analysis will be written following the format indicated in Section 01332 of the Request For Proposal. A separate Fire Protection section in the Design Analysis with input from all disciplines is one area which is often overlooked and shall be included.

Not providing a structural stoop at exterior doors where the slab is at the same approximate elevation as the interior floor. The use of simple slabs on exterior grade leads to lifting of the slab in below-freezing temperatures which interferes with the safe operation of the door.

Not correctly presenting or coordinating (to avoid interference) features of Fire Protection, Noise Control, and Physical Security.

Not correctly referencing and cross referencing building sections, wall sections, details, etc.

Failure to read/use Technical Notes in Guide Specifications.

Failure to coordinate all disciplines prior to submittal of projects for review.

Sealant details not identified by appropriate sealant type that relates to the specifications.

Improper use of fire-retardant wood. Fire-retardant wood is combustible; its use in buildings that are of noncombustible construction is extremely limited (see IBC for the minor allowable uses). Because of the potential for severe degradation, fire retardant plywood shall not be used in a roof or roofing system, or in structural applications.

Incorrectly listing trade names in door hardware specifications in lieu of ANSI numbers and failure to correctly specify hardware finishes.

Control joint in CMU walls are not shown on both architectural and

structural plans, or are inconsistent and not coordinated. Brick expansion joints not being properly shown on the floor plans and/or coordinated with the elevations.

Downspouts not being sized and indicated on the drawings. Snow guard protection not being shown, properly located, or detailed.

Failure to delete all publications from Guide Specifications which do not apply to the particular project.

North is not oriented the same direction on all sheets (civil, site, architectural).

Failure to properly edit and tailor Guide Specifications.

PART 2 NOT USED

PART 3 NOT USED

-- End of Section --

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SITE WORK
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PART 1 SITE WORK

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AMERICAN WATER WORKS ASSOCIATION(AWWA)

AWWA M17	(1989)Installation, Field Testing, and Maintenance of Fire Hydrants
AWWA C651	(1999) Disinfecting Water Mains

DEPARTMENT OF THE ARMY TECHNICAL MANUALS (TM)

TM 5-813-5	(3 Nov 1986) Water Supply, Water Distribution
TM 5-820-1	(20 Aug 1987) Surface Drainage Facilities for Airfields and Heliports
TM 5-820-4	(Oct 1983) Drainage for Areas Other Than Airfields
TM 5-822-5	(June 1992) Pavement Design for Roads, Streets Walks, and Open Storage Areas
TM 5-822-12	(Sept 1990) Design of Aggregate Surfaced Roads and Airfields

http://www.usace.army.mil/inet/usace-docs/armytm/

TECHNICAL INSTRUCTION (TI)

TI 814-1	(1998) Water Supply
TI 814-3	(1998) Water Distribution
TI 814-10	(1998) Sanitary and Industrial Wastewater Collection - Pumping Stations and Force Mains.

ENGINEERING MANUALS (EM)

EM 385-1-1	(2003) Safety and Health Requirements Manual
EM 1110-1-1002	(1990) Survey Markers and Documentation

ASTM INTERNATIONAL (ASTM)

ASTM D 977	(2003) Emulsified Asphalt

ASTM D 2027	(1997) Cutback Asphalt (Medium-Curing Type)
ASTM D 2028	(1997) Cutback Asphalt (Rapid-Curing Type)
ASTM D 2397	(2002) Cationic Emulsified Asphalt

HANDICAPPED STANDARDS (HS)

ADAAG	(September 2002) Accessibility Guidelines for Buildings and Facilities

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)

NOAA ATLAS 2	(1973) Precipitation-Frequency Atlas of the Western United States

AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS (AASHTO)

AASHTO	A Policy on Geometric Design of Highways and Streets

U.S. DEPARTMENT OF TRANSPORTATION (DOT)

DOT D-6.1	(2000) Manual of Uniform Traffic Control Devices

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 24	(2002) Installation of Private Fire Service Mains and Their Appurtenances

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 3-120-01	(Feb 2003) Air Foce Sign Standard

AIR FORCE INSTRUCTION (AFI)

AFI 40-201	(01 Sep 2000) Managing Radioactive Materials In The US Air Force

UNIFIED FACILITIES CRITERIA (UFC)

UFC 3-600-01	(17 Apr 2003; Change 16 Jan 2004) Design: Fire Protection Engineering for Facilities
UFC 4-010-01	(08 Oct 2003) DOD Minimum Antiterrorism Standards for Buildings

CITY OF COLORADO SPRINGS/EL PASO COUNTY

Manual, Volume I	City of Colorado Springs/El Paso County Drainage Criteria Manual

http://www.springsgov.com/units/cityeng/DrainageCriteriaPDFsandJPGs/DrainageCriteriaManua

1.2 OMAHA DISTRICT CORPS OF ENGINEERS STANDARD DETAILS AND CADD CELLS.

The Omaha Districts Civil and Environmental standard details and CADD cells are available on the Omaha District FTP site. See web site identified in Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES. These standards and cells are available for the Contractor's use. References to using exact details and drawings are found in this section. In those cases, the Contractor shall use the referenced standard drawings and/or details.

1.3 SURVEY

1.3.1 Field Survey

The engineering survey to be used in the development of the design submittal is available to the Contractor on CD-ROM furnished with this solicitation. The information is in English units. The AutoCAD drawing file is PE42C100.dwg. The survey data information was gathered by a topographical survey performed in April of 2004. Contours were gathered at 1-foot intervals. The survey was developed using Colorado State Plane Coordinate System Central Zone, English units in U.S. Survey Feet. The horizontal and vertical control reference datums are NAD 83 and NAVD88 respectively. All final supplied data is True State Plane at zero elevation. **Government provided survey drawings are provided to assist the Contractor in preparing his proposal. Any errors identified shall be brought to the attention of the Contracting Officer immediately for resolution and direction. The Contractor shall take all professionally prudent and reasonable actions to verify the accuracy of the data provided. During design and construction, the Contractor shall be responsible for obtaining any additional data necessary for the execution of this project.**

1.3.2 Setting of Surveying Monuments

The Contractor shall set two permanent surveying monuments on the ADAL Mission Support Facility site in accordance with this paragraph. The monuments will be established to second order horizontal and vertical control. The Contracting Officer's Representative (COR) shall approve the actual monument locations prior to establishment. Monuments will be Type G monument per EM 1110-1-1002. Field notes, as well as final monument horizontal and vertical coordinates shall be provided to the COR.

1.3.3 As-Built Conditions

The Contractor shall be responsible for surveying all new and relocated utilities for location and elevation prior to backfilling. GPS coordinates and elevations of all branch lines, changes in direction, valves, curb stops, fire hydrants, storm drainage and sanitary sewer structures, transformers, switch gear, and any other utility structures shall be documented and provided to the Contracting Officer for inclusion into the Peterson AFB database.

1.4 STAGING/STORAGE AREA AND CONTRACTORS ACCESS

1.4.1 Staging/Storage Area

The location of the Contractor staging/storage area shall be as shown on the drawings. Storage area shall be returned to its original condition upon completion of construction.

1.4.2 Contractors Access Route

The Contractor's access route to the project location shall be as shown on the drawings. The Contractor is to coordinate with Base Security if access to the site is modified based on FPCON level at the base.

1.4.3 Contractors Stockpile Area/Borrow Site

Stockpile and borrow sites are not available on the installation.

1.4.4 Project Sign

Contractor shall provide project sign in accordance to Omaha District Standard Drawing C-8.10, PROJECT SIGN DETAILS.

1.4.5 Construction Site Fence and Gates

Construction site fencing is temporary fencing and signage that will be installed as required to secure the project site. See RFP drawings for preliminary alignment of the construction site zone fence. At a minimum, signage shall include the name of the Contractor and phone number which will provide 24 hour, 7 day a week contact in case of emergencies. The signage shall conform to the base signage standards. The final location of the fence and gates will need to be coordinated with Peterson AFB (21 CES) during the preparation of the design documents. In addition to a Contractor's entrance, a second entrance will be required in the event of an emergency (i.e. Fire Dept. or Medical/Ambulance) that would be chained and locked. The Fire Dept. will require a copy (or the original and only) key to the lock and gate. Construction site zone fencing will consists of FE5 chain-link fence and double swing gates. The posts will be no more than 10 feet apart and will be driven into the ground at least 24 inches but need not be encased with concrete. The fence fabric will be extend to within two inches of hard-packed earth or fill where the terrain requires. The fence fabric shall be 6 feet high with top rail and bottom wire. Chainlink fabric shall be either zinc or aluminum coated 11-gage wire woven in a 2 inch mesh. Tie wires shall be galvanized steel wire. Chainlink fencing and gate(s) shall be specified in UFGS specification SECTION 02821A FENCING. The Contractor shall remove the temporary site fence at the completion of the construction. For antiterrorism/force protection stand off distances see SECTION 00800 SPECIAL CONTRACT REQUIREMENTS, paragraph 1.18.2e and 1.18.2j.

1.5 DEMOLITION AND REMOVAL

As options,the Contractor shall remove Building 880, Building 365, and all associated pavement, utilities, site features, trees, and structures as required to construct the ADAL Mission Support Facility. There are 8 full grown trees around Building 365 that may need to be removed. Three of the 8 trees are 50-60 feet tall. There are 32 trees along Dover Street where the new sidewalk entrance to the new parking lot goes. Some of those trees may need to be removed for the new sidewalk. There are 18 full grown trees around Building 880 that are to remain. Building 880 site will be graded to drain and seeded with seed mixture #2.

The Removal Plans provided in the RFP are to be considered as preliminary and are provided as information to assist the Contractor in preparing their proposal. Any errors identified shall be brought to the attention of the Contracting Officer immediately for resolution and direction. The Design Build Contractor shall provide the Final Removal Plans as part of the

design package.

All materials shall be disposed of outside the limits of Government controlled lands. Disposals shall be in accordance with federal, state, and local regulations. The Contractor shall notify the Contracting Officer if any material to be disposed of is found to contain hazardous, toxic, biological or radiological substances. Rubbish and debris shall be removed from Government property daily to avoid accumulation at the project site. Demolition shall be specified in UFGS Section 02220 DEMOLITION.

1.6 NEW CONSTRUCTION

The Site Plans provided in the RFP are to be considered as preliminary and are provided as information to assist the Contractor in preparing their proposal. Any errors identified shall be brought to the attention of the Contracting Officer immediately for resolution and direction. The Design Build Contractor shall provide the Final Site Plans as part of the design package.

1.6.1 Construction Sequence

Construction sequence shall be as follows:

1. Construct ADAL Mission Support addition per the RFP drawings.

2. Demolish existing Building 365 with associated utilities, pavement, and other site features per the RFP drawings if option is awarded.

3. Construct parking and site improvements per the RFP drawings on the previous Building 365 site if option is awarded.

4. Demolish existing Building 880 with associated utilities, pavement, and other site features per the RFP drawings if option is awarded.

1.6.2 Building

The location and construction of the ADAL Mission Support building shall be as indicated on the RFP drawings and in these specifications. However, the exact location may be revised slightly by the Contractor as needed to accommodate the final project layout. All site layout shall be subject to approval by the Government. ADAL Mission Support Facility is required to be handicapped accessible.

1.6.3 Parking

The general location of the parking for the ADAL Mission Support Facility shall be as shown on the RFP drawings. However, the exact location may be revised slightly by the Contractor as needed to accommodate the final project layout. All site layout shall be subject to approval by the Government. The ADAL Mission Support Facility is required to be handicapped accessible.

1.6.4 Grass Paver Service Drive

The Contractor shall provide a 20 foot wide service drive as shown on the RFP drawings. The drive shall be made with grass pavers. Grass paver system shall be made from 100% post-consumer plastic, be ring shaped, black in color, provide compressive strength of over 5720 psi when installed and provide 92% area for root growth. Grass paver system shall be installed

per manufactures specification and include suitable base to support fire trucks and service vehicles. A concrete apron shall be provided where the service drive ties into the street. The concrete apron shall extend past the sidewalk as a minimum. Removable bollards shall limit the access to this drive to maintenance and emergency vehicles. The distance between bollards shall not be greater than 4 feet.

1.6.5 Walks

Concrete walks shall be constructed as indicated on the RFP drawings. Walks shall have a medium broom finished and a square and rectangular pattern formed by expansion and contraction joints. The main building entry walk shall be 12 feet wide with a light broom finish and control joint treatment to match the new main entry plaza at Building 350. Curb cuts shall be provided for handicapped accessibility at intersections of drives and walks. Walks shall be a minimum of 4 inches thick, unless noted otherwise on the drawings. Transverse contraction joint spacing shall be as follows; 4 feet for walks 4 feet and 8 feet wide, 5 feet for walks 10 feet wide, 6 feet for walks 6 feet and 12 feet wide. Longitudinal contraction joints shall be constructed in sidewalk widths 8 feet and greater. Expansion joint spacing shall not exceed 40 feet.

1.6.6 Dumpster Screenwall Enclosure

A concrete pad and a three sided dumpster screenwall enclosure shall be provided for the ADAL Mission Support Facility. See RFP drawing for location. A minimum distance of 82 feet between the building and dumpster location is required. The screenwall enclosure shall be a minimum of 12 feet long x 12 feet wide x 8 feet high. The vehicle-access side of the enclosure shall have a 9 foot wide opening. Screen wall must be comprised of a brick veneer on cmu block with a prefinished metal cap. Prefinished metal cap color shall be 'Peterson Brown' in color. A manually operated (vertical) Roan fence gate with stay shall be placed at the opening. Roan fence color shall also be 'Petrson Brown. Concrete pad for the dumpster area shall be a minimum of 6 inches of Portland Cement (P.C.) concrete over 6 inches of rigid base course over 6 inches of compacted subgrade.

1.6.7 Berms, Bollards, Boulders, and Bushes

Landscape improvements within the Antiterrorism/Force Protection Landscape Zone option shall be a accordance with the Peterson AFB Facilities Excellence Plan (FEP)and conform to new Antiterrorism/Force Protection Landscape improvements. The new landscaping is to be a continuation of the existing building 350 landscape improvements in landscape design, plant density, plant species, plant quantities, and sizes. Use Building 350 landscape improvements as a design guide. See RFP "For Information Only" drawings L1 and L2 "Force Protection-Bldg 350 Landscape Plan and drawing PD-DET-NOTES, Detail Sheet Landscape Planting Plan. Boulders/bollards will be placed no farther than 4 feet apart and will protrude a minimum of 36 inches above ground surface. Bollards will be capable of stopping a 5,000 pound vehicle travel 35 miles per hour and will be light enough for a single emergency responder to remove. Bollards will have a locking mechanism to secure them in place and Peterson AFB First Responders will be provided a copy of the key. During construction the Contractor will not create any holes in the existing AT berms bollard, boulder and bush plan existing around the build and its populated areas.

1.6.8 Landscaping

The landscaping requirements are defined on the RFP drawings. **The Landscape Plan provided in the RFP is to be considered as preliminary and is provided as information to assist the Contractor in preparing their proposal. Any errors identified shall be brought to the attention of the Contracting Officer immediately for resolution and direction. The Design Build Contractor shall provide the final Landscape Plan as part of the design package.** Landscape plan shall be designed in accordance with the Peterson AFB Facilities Excellence Plan (FEP), Landscape Design. See Attachment No. 2. The proposed landscape shall visually-enhance the new facility with color, form and screening, while providing shade and windbreak. Landscape improvements closer than 33 feet to the building shall be shredded cedar mulch, metal landscape edging, and sod that conforms to UFC 4-010-01. An area approximately 4 feet in width against the exterior walls of the building 350 addition will have shredded cedar mulch and metal landscape edge. Do not install any decorative rock of any size within the AT landscaping area.

Landscaping shall consist of low maintenance balled and burlapped trees and container-grown shrubs. Plant materials shall be climatized to the local area for a period of one growing season prior to planting and consist of the following. Plants shall be chosen from Plant Palette, Landscape Design, Peterson AFB FEP. See Attachment No. 2. All shrub planting beds shall be surfaced with a 4 inch thick surface of wood mulch. The Contractor shall coordinate with the base on the type wood mulch desired. All plant beds not edged by walks and drives shall be edged with metal landscape edging that matches existing edging used at building 350. The edging shall protrude 2 inches above finished grade. Mulch trees to a minimum diameter of 60 inches or 24 inches beyond the tips of tree branches and shrub planting beds with a 4 inch thick surface of shredded cedar mulch. Landscape plantings shall be specified in UFGS specification sections 02930A EXTERIOR PLANTING and 02935A EXTERIOR PLANTING MAINTENANCE.

1.6.9 Turf

1.6.9.1 Soil Preparation

Prior to seeding or sodding, all surface soils shall be loosened to a minimum depth of 12 inches and broken up to a fine, workable texture suitable for seeding and sodding. Areas within the limits of sod and irrigation shall have 3 cubic yards per 1000 square feet of well-aged manure worked into the top 6 inches of soil.

1.6.9.2 Seeding and Sodding

All areas near the ADAL Mission Support Facility shall be sodded and irrigated as indicated on the plans. Other areas not sodded shall be seeded with field grasses and have only temporary irrigation to establish the turf. See the Landscape plans for exact locations. All newly turfed areas shall be fertilized with 18-46-0 fertilizer at the rate of 4.6 lbs per 1,000 square feet. All seeded areas shall be seeded by hydromulching techniques using 75 lbs. of green-tinted wood-fiber hydromulch per 1,000 square feet drilling with a Brillon-type seeder or broadcast seeded. Seeding and sodding shall be specified in UFGS Sections 02921A SEEDING and 02922A SODDING.

1.6.9.3 Sod

Sod shall be state-certified as classified by applicable state laws. Sod shall be locally grown and be comprised of a mixture of improved varieties of Kentucky Bluegrass. It shall be free of thatch, diseases, nematodes, soil-borne insects, weeds or undesirable plants, stones larger than 2 inches in any dimension, woody plant roots and other material detrimental to a healthy stand of turf. Dry moldy, yellow, irregularly shaped, torn or uneven end sod pieces shall be rejected. Sod shall be machine cut to a uniform thickness of 1-1/2 inches within a tolerance of 1/4 inch, excluding top growth and thatch. Measurement for thickness shall exclude top growth and thatch.

1.6.9.4 Seeding

Seed Mixture #1

Mixture	% by weight
Midnight Kentucky Bluegrass	25%
Merit Kentucky Bluegrass	25%
Touchdown Kentucky Bluegrass	25%
NuGlade Kentucky Bluegrass	25%

purity/germination=98/85, pure live seed=83.3%
seeded at a rate of 350 lbs. per acre

Seed Mixture #2

Mixture	% by weight	purity/germ.	pure live seed
Sideoats Grama	10%	98/57	87.17%
Western Wheatgrass	10%	98/73	75.19%
Tatanka or Sharps Buffalograss	25%	98/93	94.30%
Blue Gramma	25%	98/82	62.93%
Annual Ryegrass	30%	98/90	98.06%

seeded at a rate of 200 lbs. per acre

a. Weed seed shall not exceed 1 percent by weight of the total mixture. Wet, moldy, or otherwise damaged seed shall be rejected. Seed mixing shall be performed by the seed supplier prior to delivery to the site. Bulk quantities of seed shall be labeled.

b. Provide selected seed mixture to the COR for approval. The seed mixture will be designed to be tolerant to the moisture levels of the area. All areas that are disturbed, excluding the landscape mulched areas, sod and seeded areas of mixture #1 will receive mixture #2.

c. All seeded areas shall be watered with temporary lawn sprinklers for a period of sixty (60) days. Areas shall be watered as required for the ground to remain moist during the first three weeks of sprinkling. Beginning with the fourth week of sprinkling, the areas shall be watered every other day, delivering 1/2 inch of water to the ground for each watering day, for the remainder of the sixty (60) day period.

1.6.10 Irrigation Sprinkler System

The irrigation systems shall be specified in UFGS Section 02811A UNDERGROUND SPRINKLER SYSTEMS and must comply with the Peterson AFB

Irrigation Systems Standard Specification, see 21st Civil Engineer Squadron, Peterson AFB, FEP Irrigation requirements (See Attachment No. 2).

a. All sodded areas shall be lawn irrigated. Existing irrigation lines or components disturbed by construction activities shall be replaced or restored to their original working condition within two (2) days after being damaged or shut down.

b. The irrigation system shall consist of standard, commercially-available components. The components shall be products of manufacturers regularly engaged in the manufacture of such items and shall essentially duplicate those that have been in satisfactory operation at Peterson AFB for at least two years.

c. The sprinkler system shall be completely underground, automatically operated by a central sprinkler controller, and capable of providing the required amount of water to the lawns and newly planted trees and shrubs as required in this contract. The lawn sprinkler pop-up heads shall be designed to be adjustable for coverage and flow. Water to irrigate the trees and shrubs shall be supplied by a drip or trickle irrigation system. Irrigation system shall operate through a backflow prevention device with inline pressure regulating devices, filters, control valves, vacuum relief valves, flush valves, and pressure compensating drip heads. Supply all necessary tools and equipment for complete installation.

d. Head spacing shall not be less than the manufacturer's recommendations for the type and sizes of trees and shrubs installed and the area of turf to be sprinkled. The Contractor shall submit design calculations for review on this matter. The Contractor shall also provide design drawings that include typical head spacing, system layout, pipe size, layout, and pressures. All components shall be shown on the irrigation plans for review.

e. A reduced pressure principle backflow preventer shall be installed between the irrigation system and the potable water system. The backflow preventer shall be installed in the mechanical room. A strainer shall be installed upstream of the backflow preventer with a screening element compatible with the emitters or sprinkler heads used and as recommended by the manufacturer. Provide a self-draining, freeze-proof, shut-off valve upstream of the backflow preventer and strainer. Vacuum breakers shall not be used in lieu of the reduced pressure principle backflow preventer. The system shall also be equipped with a quick coupler valve immediately outside the building for blowing water out of the system at the end of the season. The air connection shall be located downstream of the backflow preventer and strainer.

f. High points in the irrigation system shall be equipped with a combination air/vacuum relief valves.

1.6.11 Pavement

1.6.11.1 Pavement Sections

The Contractor shall be responsible for design of all pavements using the traffic information provided below. Design of flexible and rigid pavements shall be determined by the Contractor using the methods described within TM 5-822-5. Design of aggregate surface pavements shall be determined by the Contractor using the methods described within TM 5-822-12.

Pavements for permanent installations shall be designed for a life of 25 years. Pavements at Peterson AFB shall be designed for seasonal frost conditions. See Attachment No. 1 for Final Foundation Analysis. This data will be used for pavement designs.

1.6.11.2 Design Traffic

Pavement for the dumpster area and the approach apron to the grass paver service drive off of Dover Street shall be a minimum of 6 inches of Portland Cement (P.C.) concrete over 6 inches of rigid base course over 6 inches of compacted subgrade.

ADAL Mission Support Facility Parking Lot. Parking lot pavement shall be flexible hot-mix asphalt type with concrete curb and gutter. Pavement shall be hot-mix asphalt over aggregate base course over subbase course over compacted subgrade. Design shall be for a class "F" facility with a traffic category of II. Traffic will be composed of 90 percent passenger cars, panel trucks and pickup trucks, and up to 10 percent two-axle trucks. The total thickness of bituminous concrete shall not be less than 3 inches. Curbing in the area next to the building addition shall be a minimum of 6 inches tall and shall be placed at a 90 degree angle to the pavement surface. All other curbing shall match existing conditions.

1.6.11.3 Rigid Pavement Joint Layout

A typical joint layout for plain concrete road intersections is shown in Figure 13-1 of TM 5-822-5. A typical joint layout for plain concrete roads and parking areas is shown in Chapter 15 of TM 5-822-5. Spacing and layout of joints in plain concrete pavement shall be such that the number of slabs requiring reinforcement will be kept to a minimum. Odd-shaped slabs should be reinforced in two directions normal to each other using a minimum of 0.05 percent of steel in both directions. The entire area of the slab should be reinforced. An odd-shaped slab is considered to be one in which the longer dimension exceeds the shorter dimension by more than 25 percent or a slab which essentially is neither square nor rectangular. Odd-shaped slabs will generally be reinforced with steel welded wire fabric. Slabs in which a structure is placed shall also be reinforced with welded wire fabric. Each slab to be reinforced with welded wire fabric will be marked with an "R" on the joint layout plan. Details showing typical layout of joints at intersection as indicated in Figure 13-1 of TM 5-822-5 will be provided when applicable.

1.7 PAVEMENT SPECIFICATIONS

Pavements shall be constructed in accordance with the following specifications. Unless otherwise specified, unit price clauses in specifications shall be deleted.

1.7.1 Bituminous Wearing and Intermediate Courses

Bituminous wearing and intermediate courses shall conform to the requirements in UFGS Section 02741 HOT-MIX ASPHALT (HMA) FOR ROADS. The maximum size aggregate used in bituminous concrete shall be approximately equal to, but always less than 1/2 the wearing course thickness and 2/3 the intermediate course thickness. Where the total thickness of bituminous concrete requires more than one lift, an intermediate course may be specified beneath the wearing course. The wearing course shall be limited to Gradation 3, Table 2 of Section 02741.

Disintegrated granite shall not be used for production of any aggregate and the recessed aggregate shall contain not more than 2.0 percent by weight of disintegrated granite particles in that portion of the total sample larger than the No. 4 sieve and not more than 4.0 percent in any individual sieve size listed in the required aggregate gradation for that portion larger than the No. 4 sieve. A disintegrated granite particle is defined as a soft, crumbly particle of igneous rock having a visible crystalline grain size and consisting essentially of feldspar and quartz with lesser amounts of micas and/or amphiboles and pyroxenes. Generally, the rock particle will be stained by iron oxide and the feldspar grains will have a dull, highly fractured appearance. The individual mineral grains are so weakly bonded that the particle will crumble under moderate pressure. When tested by Test Method COE CRD-C 130 the particle would be classified as soft.

1.7.2 Bituminous Prime Coat

Bituminous prime coat will be used when it is anticipated that the constructed base course may be damaged by rain, wind, or traffic prior to placement of the bituminous concrete pavement. Bituminous prime coat, if used, shall conform to UFGS Section 02748 BITUMINOUS TACK AND PRIME COATS. Bituminous prime coat shall be: liquid asphalt conforming to the requirements of ASTM D 2027, designation MC-30 or MC-70, at the Contractor's option, except that only MC-30 shall be used on dense graded base courses if MC-70 does not adequately penetrate the base course material; cationic emulsified asphalt conforming to the requirements of ASTM D 2397, designation CSS-1 or CSS-1h, or emulsified asphalt conforming to the requirements of ASTM D 977, designation SS-1 or SS-1h.

1.7.3 Bituminous Tack Coat

Contact surfaces of previously constructed pavement, curbs, manholes, and other structures shall be sprayed with a thin coat of bituminous material conforming to UFGS Section 02748 BITUMINOUS TACK AND PRIME COATS. Unless otherwise directed or required, bituminous material shall be cutback asphalt conforming to the requirements of ASTM D 2028, designation RC-70 or RC-250; emulsified asphalt conforming to the requirements of ASTM D 977, designation SS-1 or SS-1h; or cationic emulsified asphalt conforming to the requirements of ASTM D 2397, designation CSS-1 or CSS-1h.

1.7.4 Aggregate Base Course

Crushed aggregate base course shall be specified in UFGS Section 02722 GRADED, CRUSHED AGGREGATE BASE COURSE. Aggregate base course should have a California Bearing Ratio (CBR) of at least 80.

1.7.5 Subbase Course

Subbase course shall be specified in UFGS Section 02721 SUBBASE COURSES. A subbase course shall be placed beneath the aggregate base course and shall serve as a separation and/or filter layer. The material for the granular separation layer should meet the requirements for a 50 CBR subbase and shall have a minimum thickness of 4 inches. Aggregates for 50 CBR subbase course shall consist of crushed quarry stone, crushed gravel (2 or more fractured faces) or a combination of crushed gravel with fines. Gradation No. 1 in UFGS Section 02721 SUBBASE COURSES should be used. However, the percent passing the No. 200 sieve shall be 9 to 15 percent. Particles having diameters less than 0.02 millimeter shall not be in excess of 6 percent by weight of subbase course in frost areas.

1.7.6 Rigid Pavement Base Course

Rigid pavement base course shall conform the requirements in UFGS Section 02721 SUBBASE COURSES, except as specified hereafter. When UFGS Section 02721 SUBBASE COURSES is used for base course, section title of the project specification will be: RIGID BASE COURSE and the word "subbase" will be changed to "rigid base" throughout. When the guide specification is used in combination for a subbase course in some areas and a base course in other areas, the section title will be: SUBBASE AND RIGID BASE COURSE and the words "or rigid base" will be inserted after "subbase" throughout. When the specification is used for base course under rigid pavements, gradation band No. 4 will be used. The gradation will also meet the requirements in TM 5-822-5 for pavement design for frost conditions.

1.7.7 P.C. Concrete Pavement

P.C. concrete pavement shall be designed using a flexural strength of 650 psi at 28 days age. Concrete pavement shall conform to UFGS Section 02611 CONCRETE PAVEMENT FOR ROADS.

1.7.8 Joint Sealing

Joints in P.C. concrete pavements may be sealed with either field molded sealants or compression joint seals. Sealant design shall conform to TM 5-822-5 and TM 5-822-11. Field molded joint sealants shall be specified in UFGS Section 02760 FIELD MOLDED SEALANTS FOR SEALING JOINTS IN RIGID PAVEMENTS. Compression joint seals shall be specified in UFGS Section 02762 COMPRESSION JOINT SEALS FOR CONCRETE PAVEMENT.

1.7.9 Concrete Sidewalks and Curbs and Gutters

Concrete sidewalks and curbs and gutters shall be specified in UFGS Section 02770 CONCRETE SIDEWALKS AND CURBS AND GUTTERS. Expansion joints in P.C. concrete sidewalks shall be sealed with cold-applied sealant which is stone or grey in color. Curbing in the area next to the building addition shall be a minimum of 6 inches tall and shall be placed at a 90 degree angle to the pavement surface. All other curbing shall match existing conditions.

1.8 GRADING

1.8.1 General

Positive drainage shall be provided for all areas and existing drainage ways shall be utilized to the extent possible. Drainage will be directed away from buildings to curb and gutter, drainage structures, and drainage ditches as applicable. Swales between buildings and parking areas shall be avoided if possible. Finished floor elevation of addition shall match existing. Earthwork shall be balanced to the extent possible without compromising the design. Grading shall be specified in UFGS specification Section 02300 EARTHWORK. The Contractor shall be responsible for editing the specification for the project.

1.8.2 Adjustment of Existing Structures

All manholes, valve boxes, or inlets of any nature within the project that do not conform to the new finish grade in either surfaced or unsurfaced areas shall be adjusted to the new finish grade. Where inlets, manholes, or valve boxes fall within a surfaced or unpaved roadway or parking, the

existing frames and cover shall be removed and replaced with a heavy-duty frame and cover. The structure shall be adjusted as needed to fit the new conditions. All structures shall be of a type suitable for the intended use and shall conform to the requirements of the applicable section of these specifications.

1.8.3 Borrow and Waste

Borrow materials shall be obtained from sources outside the limits of Government-controlled land. The source of borrow material shall be the Contractor's responsibility. The Contractor shall obtain from the owners the right to procure material, shall pay all royalties and other charges involved, and shall bear all the expense of developing the sources, including rights-of-way for hauling. Surplus excavated material not required for fill shall be disposed of by the Contractor at his own expense and responsibility outside the limits of Government-controlled land.

1.8.4 Sidewalks and Curb and Gutter

Concrete walks shall have a transverse grade of 2 percent. Maximum desirable longitudinal walk grade shall be 4 percent and an absolute maximum grade of 8.33 percent. Special attention shall be given to sidewalks that are on the north (shaded) side of buildings. These walks should be designed to ensure a freeze/thaw cycle does not result in the formation of ice on the walk. Ice on walks should be a safety consideration for all areas. The use of steps in walks will be avoided whenever possible. The use of single riser steps is especially discouraged. When steps are unavoidable, they should have at least three risers and will be provided with handrails.

1.8.5 Transverse Parking Area Grades

a. Desirable minimum of 2 percent.

b. Absolute minimum of 1 percent for rigid pavement.

c. Maximum of 2 percent at handicap parking.

1.8.6 Longitudinal Parking Area Grades

Maximum of 4 percent.

1.8.7 Ramp Grades

a. Desirable maximum of 7 percent.

b. Absolute maximum of 10 percent for short distances only.

1.8.8 Gutter Grades

a. Desirable minimum of 0.8 percent.

b. Absolute minimum of 0.5 percent.

1.8.9 Grades Away From Building

a. Minimum of 5 percent for 10 feet.

b. Maximum of 10 percent for 10 feet.

1.8.10 Overlot Grades

Provide positive drainage for all areas.

a. Minimum 1 percent for cohesionless sandy soils.

b. Minimum 2 percent for cohesive soils or turfed areas.

1.8.11 Ditch Slopes

Minimum grade of 1.0 percent for channelized flow.

1.8.12 Ditches

Ditches shall be graded at non-erodible slopes or the ditch shall be lined with an appropriate material to prevent erosion. A design storm with a return period of at least 2 years shall be used to determine erodibility of ditches and swales. The depth of ditches along pavement shoulders shall be such that the water surface from the 10 year design storm is below pavement subbase and base courses which daylight through the adjacent shoulder. Side slopes for unlined earth channels will not be steeper than 1 on 3. Erosion protection is required at and opposite the point of entry of side inflows into earth channels.

1.9 ROAD GEOMETRIC DESIGN

Horizontal and vertical alignment shall be designed in accordance with AASHTO "A Policy on Geometric Design of Highways and Streets".

1.10 STORM DRAINAGE

1.10.1 Determination of Storm Runoff

Peterson AFB Drainage systems shall be designed in accordance with requirements outlined in the City of Colorado Springs/El Paso County Drainage Criteria Manual, Volume 1. In general, the design storm will normally be based on rainfall of 10-year frequency with a 100-year major storm event. Protection of Peterson AFB against floodflows originating from areas exterior to the base will be based on 25 year or greater rainfall.

1.10.1.1 Rainfall Depth-Duration-Frequency Data

Rainfall data for states in the western United States shall be obtained from NOAA ATLAS 2. Rainfall intensity-duration data found in the City of Colorado Springs/El Paso County Drainage Criteria Manual may be used if available.

1.10.2 Storm Drainage System Design

The Contractor shall be responsible for the complete design of the storm drainage system. The new storm drainage system shall be coordinated with surrounding properties to ensure runoff does not cause damage to the other properties. Storm water shall be collected by an underground storm drainage system.

Submittal of pipe samples is not required. The Contractor shall refer to the Corps of Engineers standard details for any storm drain details required by the design. The Contractor shall provide details for any other

drainage structures not found in the Corps standard details.

The storm drainage system shall be designed so as to minimize the number of drainage structures required. Structures shall be located at all changes in direction of storm drain line, at the intersection of two or more storm drain lines, where required to intercept rainfall runoff and where entry for maintenance is required. The maximum distance between drainage structures shall be 300 feet. Storm runoff in streets and parking areas with curbing shall be collected using curb inlets or area inlets. The use of curb openings with flumes to drain water from streets and parking areas with curbing shall not be permitted. Drainage of runoff from turfed areas onto pavements shall be minimized. Peterson AFB requires that in profile, proceeding downstream, conduit crowns whose sizes progressively increase shall be matched, the invert grade dropping across the junction structure; also the crowns of incoming laterals will be matched to that of the main line. If the downstream conduit is smaller as on a steep slope, its invert will be matched to that of the upstream conduit. Storm drain pipes shall have a minimum diameter of 1 foot. Storm drain lines shall be located outside of paved areas to the extent possible. Under no circumstance shall storm drain lines be located beneath buildings.

1.10.2.1 Hydraulic Design

New storm drain pipes shall be designed for gravity flow during the 10-year design storm unless otherwise approved by the Government. The hydraulic grade line shall be calculated for the storm drain system and all energy losses accounted for. Storm drain systems shall be designed to provide a minimum flow velocity of 2.5 feet per second when the drains are one-third or more full.

1.10.2.2 Manholes

Diameter of manholes shall be large enough to accommodate pipes entering/exiting the manhole. Manhole cast iron frames shall have a minimum opening diameter of 2 feet. Galvanized steel ladders shall be provided in all manholes with a depth exceeding 12 feet.

1.10.2.3 Area Inlets

Area inlets shall be properly sized and designed to accommodate the design flows.

1.10.2.4 Curb Inlets

Locating parking area curb inlets at building entrances shall be avoided if possible. Curb inlets along two-lane streets shall be spaced and sized so that the flow in the gutter and ponded areas at low points do not cover the crown of the street. Curb inlets shall be limited to curb opening inlets with depressed gutter. Grate inlets and combination inlets are not allowed.

1.10.2.5 Head walls and Flared End Sections

Unless otherwise approved, head walls or flared end sections shall be provided at both ends of culverts and at storm drain outfalls. Outlets and endwalls must be protected against undermining, scour, lateral erosion, and degradation of downstream channel by use of appropriately designed/sized rip-rap.

1.10.2.6 Culverts

Culvert pipes shall have a minimum diameter of 18 inches wherever possible.

1.10.3 Interior Roof Drains

Interior roof drains shall be connected to an underground drainage system. Roof drain outfall lines beyond 5 feet from the building shall be of the same materials as the exterior storm drainage system. Minimum diameters shall be 1 foot for lengths over 50 feet and 8 inches for lengths under 50 feet. In addition, the diameter shall be at least 2 inches larger than the diameter of the line as it leaves the building. All changes in direction of outfall lines shall occur at storm drain structures except that cleanouts may be used in lines smaller than 1 foot.

1.10.4 Storm Drain and Culvert Pipe

The Contractor shall select the appropriate storm drain and culvert pipe materials from the options specified in the Omaha District design specifications. Pipe, bedding, and backfill shall be of adequate strength (or stiffness) to support the earth, live, and construction loads imposed on the pipe. Only pipe materials which have a minimum design service life of 50 years shall be allowed for permanent installations. As a minimum, all pipe joints shall be soil tight. The Contractor shall specify watertight pipe joints and flexible resilient pipe connectors at drainage structures when the water table is at or above the pipeline. All storm drain pipe at Peterson AFB shall be corrugated polyethylene (CPE) unless structural requirements dictate otherwise. Pipes smaller than 15-inch diameter may be of high density polyethylene (HDPE) or polyvinyl chloride (PVC).

1.10.4.1 Concrete Pipe

Do not use concrete pipe at Peterson AFB where soil is more acidic than pH 5.5 or when the fluid carried has a pH less than 5.5 or higher than 9.0. Reinforced concrete pipe shall be a minimum of Class III. Type I cement may be used only when sulfates in the soil are 0.1 percent or less and dissolved sulfates in the effluent are 150 ppm or less. Type II cement may be used only when sulfates in the soil are 0.2 percent or less and dissolved sulfates in the effluent are 1,500 ppm or less. Only Type V cement may be used if sulfates in the soil exceed 0.2 percent or dissolved sulfates in the effluent exceed 1,500 ppm. Concrete pipe shall be assumed to have a minimum design service life of 50 years unless the Contractor determines that conditions at the site will reduce the service life. Concrete culverts and storm drains shall be protected by a minimum of 3 feet of cover during construction to prevent damage before permitting heavy construction equipment to pass over them during construction.

1.10.4.2 Plastic Pipe

Stiffness of the plastic pipe and soil envelope shall be such that the predicted long-term deflection shall not exceed 7.5 percent. Plastic culverts and storm drains shall be protected by a minimum of 3 feet of cover during construction to prevent damage before permitting heavy construction equipment to pass over them during construction. Split couplers shall not be allowed for corrugated high-density polyethylene pipe. Plastic pipe shall be assumed to have a minimum design service life of 50 years unless the Contractor determines that conditions at the site will reduce the service life.

1.11 TRAFFIC SIGNAGE AND STRIPING

Traffic signage and striping shall be provided for all new roads and parking areas. Signage and striping shall be designed in accordance with DOT D-6.1 Uniform Traffic Control Devices for Streets and Highways. Parking areas shall be striped with non-reflectorized paint. Roads and streets shall be striped with reflectorized paint. Pavement markings shall be specified in UFGS Section 02763 PAVEMENT MARKINGS. Traffic signs shall be specified in Omaha District Section 02440 TRAFFIC SIGNS. The Contractor shall be responsible for editing the specifications for the project.

1.12 EROSION AND SEDIMENT CONTROL

The Contractor shall be responsible for selecting and implementing Best Management Practices (BMPs) to minimize pollutants in storm water discharges associated with construction activity at the construction site. All erosion and sediment measures and other protective measures shall be maintained by the Contractor in effective operating condition. All temporary structural practices shall be removed once the corresponding disturbed drainage area has been permanently stabilized. In the State of Colorado, EPA has authority for the National Pollutant Discharge Elimination System (NPDES) on Federal Facilities. If construction activities results in the disturbance of 1 acre of land or more, coverage under the EPA Storm Water General Permit For Construction Activities (Colorado Permit No. COR10*##F) is required. The Contractor and the Omaha District Corps of Engineers shall be co-permittees. The Contractor shall be responsible for complying with the requirements in Section 01355 ENVIRONMENTAL PROTECTION and with the requirements of Section 01565 (FEDERAL FACILITIES COLORADO) NPDES PERMIT REQUIREMENTS FOR STORM WATER DISCHARGES FROM CONSTRUCTION SITES. The Contractor shall be responsible for editing and applying the requirements of Section 01356 STORM WATER POLLUTION PREVENTION MEASURES. If coverage under the NPDES Permit is not required, Specification Section 01565 shall not be applicable.

1.12.1 Temporary Construction Entrance

Tracking of mud from the construction site onto adjacent roads and streets shall be kept to a minimum. A temporary stabilized stone pad shall be constructed at points where vehicular traffic will be leaving the construction site and moving directly onto a paved road or street. It shall extend the full width of the vehicular ingress and egress area and have a minimum length of 80 feet. The entrance shall be maintained in a condition which will prevent tracking or flow of mud onto adjacent roads or streets. If conditions on the site are such that the majority of the mud is not removed by the vehicles traveling over the stone, the the tires of the vehicles shall be washed before entering the road or street. Any mud which is tracked onto roads or streets shall be removed at least once daily.

1.12.2 Erosion Control Blanket

Bottoms and side slopes of ditches and any other disturbed slopes 1V on 3H or steeper shall be covered with an erosion control blanket immediately after seeding.

1.12.3 Silt Fence

Silt fencing shall be installed below disturbed areas where erosion would occur in the form of sheet and rill erosion. The size of the drainage area

above the silt fence shall not exceed one fourth of an acre per 100 feet of silt fence length. Silt fencing may be installed across ditches only when the maximum contributing drainage area is not greater than 1 acre. Silt fence constructed across a ditch shall have wire support and shall be of sufficient length to eliminate end flow.

1.12.4 Straw Bale Barrier

Straw bale barriers may not be installed across ditches.

1.12.5 Outlet Protection

Preformed rip rap lined scour holes or other suitable measures shall be installed at outlets of culverts and storm drains as needed to prevent erosion.

1.12.6 Storm Drain Inlet Protection

Storm drain inlet protection shall be installed around any new or existing storm drain inlets that will become operational before permanent stabilization of the corresponding disturbed drainage area has occurred. Storm drain inlet protection shall include either a sediment filter or an excavated area around the storm drain inlet.

1.12.7 Rock Check Dam

Rock check dams may be installed in ditches which drain 2 to 10 acres. The allowable drainage area will be dependent on the gradation of the rock used to construct the check dam. The maximum height of the dam shall be 3 feet. The center of the dam shall be at least 6 inches lower than the outer edges. For added stability, the base of the check dam may be keyed into the soil approximately 6 inches. The maximum spacing between the dams should be such that the toe of the upstream dam is at the same elevation as the top of the downstream dam.

1.12.8 Temporary Sediment Trap

Temporary sediment traps may be constructed below disturbed areas where the total drainage area is less than 3 acres.

1.12.9 Temporary Sediment Basin

Temporary sediment basins may be constructed below disturbed areas where the total drainage area is equal to or greater than 3 acres.

1.12.10 Other Controls

Other controls such as diversion dikes, level spreaders, temporary seeding, etc. may be used if deemed necessary by the Contractor.

1.13 UTILITIES

The Contractor shall avoid running utilities underneath buildings, streets, and parking lots. In cases where it is necessary for the utilities to cross existing streets, the Contractor shall install the lines by boring and jacking methods. No open trenching will be allowed through existing streets unless written permission is obtained and approved by the Contracting Officer.

1.13.1 CATHODIC PROTECTION

Corrosion protection shall be provided for all buried gray or ductile-iron piping, coated piping, fittings, valves, and other water line appurtenances, regardless of pipe material. Corrosion protection shall consist of an anode type cathodic protection system. See Section 01007 Electrical Requirements.

1.13.2 WATERLINES

a. All waterlines shall comply with applicable Local, State and Federal standards. Local and State standards shall dictate unless the Federal standards are more stringent. Water distribution systems and service lines shall be designed and constructed in accordance with TM 5-813-5, TI 814-1, TI 814-3, and applicable U.S. Army Corps of Engineers Guide Specifications requirements. The Contractor shall be responsible for protection of existing waterlines. If any potable waterlines are damaged during construction, the Contractor must immediately notify the Contracting Officer, Base Bioenvironmental Engineering (BE)(556-7721) and the Base Civil Engineering (CE) Office. The Contractor shall disinfect all new water lines and any remaining lines which do not remain fully pressurized during construction or connection. The Contractor shall notify the Contracting Officer, Base Bioenvironmental Engineering and the Base CE Office prior to disinfection of the water lines. The disinfection shall be in accordance with the American Water Works Association Standard AWWA C651, and shall not be considered complete until two consecutive days of bacteriological samples show no contamination. All bacteriological, lead and copper tests shall be performed by Environmental Protections Agency (EPA) certified laboratories. Copies of results of the analyses shall be forwarded to the Contractor and BE upon receipt.

b. The Contractor shall design and provide all facilities required to deliver water to the project. Service connections,rerouting of the existing water lines, or extensions to the existing water distribution system shall be made without interruption to service. The domestic demand for the new facility served shall be designed in accordance with the Uniform Plumbing Code Fixture Count Method. For design of the waterlines, use maximum Hazen-Williams "C" value of 130 for plastic pipe and 120 for other pipe materials. The Contractor shall provide all calculations at 60% Design for approval.

c. The Contractor shall notify the BE (via Contracting Officier) in writing of intention to bring radioactive material's, equipment containing radiation sources and/or able to produce radiation. Application shas to fulfill requirements IAW AFI 40-201, para 3.3.3 and 3.4.4.10. Approval will be granted as soon as the Radiation Safety Officer (RSO) reviews the document. RSO will conduct review IAW AFI 40-201, para 3.3.3 and 3.4.4.10.

1.13.2.1 Water Distribution and Service Lines

a. Flow Requirements

Water shall be supplied by service lines of appropriate capacity to provide the flows determined to be necessary to meet all requirements of the new facility. The requirements include all domestic use, interior and exterior fire protection water, and lawn sprinkler/irrigation systems, as required.

b. Service Connections

A maximum velocity of 10 feet per second shall be used for metallic piping and 5 feet per second shall be used for nonmetallic piping. Service connections shall be made via corporation stops, appropriate gooseneck connections, or tapping sleeves and valves. The number and maximum size of corporations stops shall be as specified.

c. Dewatering, Hydrostatic Testing, and Flushing of Lines

The Contractor shall be responsible for implementing the terms and requirements of Section 01355 ENVIRONMENTAL PROTECTION for dewatering, hydrostatic testing, and flushing of lines after disinfection.

d. Domestic Service Stop Valve

Building shall be provided with separate service and stop valves in areas readily accessible to maintenance and emergency personnel. Stop valves located in walks are prohibited.

1.13.2.2 Dedicated Fire Water Service Lines

a. Fire Flow Data

For determination and documentation of fire protection, the Contractor shall conduct and provide all fire hydrant flow tests. Data to be included with the flow tests are static pressures, residual pressures, flowrates, date, domestic and fire pumps in operation at the pumphouse, time tests were conducted, and name of personnel conducting the fire hydrant flow tests. The static pressures, residual pressures, flowrates, test hydrant and flow hydrants shall be shown on the appropriate contract drawings. Fire hydrant flow tests required for fire protection design shall be made in accordance with the procedures specified in AWWA M17, 1989 (Installation, Field Testing, and Maintenance of Fire Hydrants). The Contractor shall coordinate with the Contracting Officer, Peterson AFB Fire Department, and the Base CE prior to conducting such tests. The Contractor shall submit fire hydrant flow test data with the design calculations. The Contractor shall become familiar with the water system at Peterson AFB prior to conducting the hydrant flow tests. The following hydrant flow test data is provided for pricing purposes only.

Static pressure 90 psi
Residual pressure 44 psi
Residual flow 1316 psi

The flow hydrant is located on the intersection of Dover St and Peterson Blvd. The test hydrant is located on Dover St in front of Bldg 361. This test was performed on March 17, 2004

b. Fire Hydrants

The Contractor shall be required to install fire hydrants for the new facility. One fire hydrant shall be located within a minimum of 150 feet of the building fire department connection. All other hydrants shall be located in accordance with UFC 3-600-01. Fire hydrant styles shall meet the requirements of Peterson AFB.

c. Dedicated Fire Line

The Contractor shall be required to provide a separate fire water service line to the building for interior fire sprinkler protection in accordance

with NFPA 24 and UFC 3-600-01. The fire water service line to the building shall be equipped with a Post Indicator Valve (PIV) that can be readily located by the fire department. The PIV shall not be placed closer than 40 feet to the building it is serving and shall be provided with a tamper switch connected to the building fire control panel. The PIV shall be protected by 6 inch steel pipe bollards, filled with concrete, painted and spaced in accordance with Peterson AFB requirements. The PIV will be linked to the Base DDC system.

1.13.3 WASTEWATER

All wastewater lines shall comply with applicable Local, State, and Federal standards.

1.13.3.1 Design Criteria

Sewage system shall be designed and constructed in accordance with State and local criteria unless the Federal standards are more stringent. If the Federal standards are more stringent, the sewage system shall be designed and constructed in accordance with TI 814-10 and applicable UFGS Guide Specifications. The Contractor shall field verify the sanitary sewer system capacity and invert elevations to ensure that it is adequate for the flows generated by the new facilities. No interruption of service shall be allowed on the existing sanitary sewer line. The Contractor shall coordinate the sequencing of construction as it affects the existing sanitary sewer line with the Contracting Officer and the Base CE Office. Exterior building sanitary sewer service lines shall be 6 inch minimum diameter. The minimum pipe size between manholes shall be 8 inch. All design slopes will be calculated using the Manning formula. The Contractor shall provide all calculations.

1.13.3.2 Manholes

Manholes are required at all changes of direction, slope, and size. Manholes shall be spaced not more than 300 feet apart. Manholes shall be located at intersections of streets when possible. Avoid placing manholes where the tops will be submerged or subject to surface water inflow. Where the invert of the inlet pipe would be more than 1.5 feet above the manhole floor, a drop connection will be provided. The Contractor shall provide all calculations. Manholes 12 feet deep or greater shall be provided with a ladder.

1.13.4 Gas Distribution System

See Section 01006 MECHANICAL REQUIREMENTS for instructions and engineering information relating to the design of the exterior gas distribution system.

1.14 EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS.

1.14.1 Trenches

Jacking and boring shall be required when an underground utility line crosses any roadway. Sewer and water lines, mains or laterals, shall be placed in separate trenches. The separate trenches shall maintain a minimum horizontal separation of 10 feet and the bottom of the water line shall be at least 1.5 feet above the top of the sewer. Sewers crossing above potable water lines shall maintain a vertical separation of 1.5 feet and must be constructed of suitable pressure pipe or fully encased in concrete for a distance of 10 feet on each side of the crossing.

The trench shall be excavated as recommended by the manufacturer of the pipe to be installed. Bedding and initial backfill material shall be in accordance with the manufacturers recommendations. Where no manufacturer's installation manual is available, trench walls shall be excavated to a stable angle of repose as required to properly complete the work. Trench excavations shall adhere to requirements prescribed in EM 385-1-1, Safety and Health Requirements Manual. Special attention shall be given to slopes which may be adversely affected by weather or moisture content.

PART 2 NOT USED

PART 3 NOT USED

-- End of Section --

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SECTION 01003

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SECTION 01003

ARCHITECTURAL BUILDING REQUIREMENTS

PART 1 ARCHITECTURAL BUILDING REQUIREMENTS

1.1 FUNCTIONAL PLAN REQUIREMENTS

The architectural component of this project consist of a two-story facility addition and renovation of spaces within the existing facility. The proposed building addition shall be an extension of the existing building #350, as shown on the drawings. Overall, design, construction and functional layout is similar to existing Building #350. As-built drawings of the existing building are provided "For Information Only" referencing.

This facility is being designed to meet the functional requirements of the building occupants and will be used by both military and civilian personnel. The maximum occupancy of the working personnel in this facility will be approximately 300 people, normally operating 14 hours a day, 7 days per week. The facility shall provide a quality office environment for the 21st Mission Support Squadron. This facility will enhance the ability of their operations to perform mission support functions, briefings/debriefings, planning, training, testing, safety, evaluations and scheduling within the new facility.

The facility will consist of but is not limited to the following space types: administration, mission support, briefings/debriefings, planning, training, testing, safety, evaluations and scheduling, mechanical, electrical and communications rooms.

1.2 DESIGN CRITERIA

The technical specifications provided shall serve as the minimum design standards established for this project. Design publications listed in each specification section shall be used as sources of criteria for design. The criteria from these sources may be supplemented, but not supplanted, by applicable criteria contained in nationally recognized codes, standards, and specifications.

As-built drawings have been provided in this drawing set "For Information Only" referencing. The as-built drawings were designed using a Metric dimensioning units. However, the existing facility was constructed utilizing standard English dimensioning units and materials. This project shall be designed and constructed utilizing standard English dimensioning units. The Contractor will be required to match existing facility features and may require field dimensioning of in-place construction to prepare design drawings.

1.2.1 TECHNICAL SPECIFICATIONS

The UFGS technical guide specifications (available to Contractor as identified in Section 01332 and Attachment No. 3) shall be completely edited and fully coordinated with the drawings to accurately and clearly identify the product and installation requirements for this facility.

The provided specifications define the minimum requirements and level of quality for items of equipment, materials, installation, and testing that shall be provided for the facility. Where items of equipment, materials, installation, or testing requirements are not covered in the provided specifications; special sections or within each guide specification or new specifications sections shall be prepared to cover those subjects.

1.2.2 PUBLICATIONS

The design publications listed below shall be used as sources of criteria for the architectural design. The most current edition of the code or standard shall be used as criteria for the design. The most current edition of the code and/or standard shall be used at the time of contract award, regardless of the edition dates provided for the following publications. The criteria from these sources may be supplemented but not supplanted, by applicable criteria contained in nationally recognized codes, and standards.

1.2.2.1 National Fire Protection Association

(2003) Life Safety Code #101

(1999) NFPA 80 Fire Doors and Windows

1.2.2.2 International Code Council

(2000) International Building Code

1.2.2.3 American with Disabilities Act (ADA)

Accessibility Guidelines for Buildings and Facilities

1.2.2.4 Occupational Safety and Health (O.S.H.A.) standards

1.2.2.5 Aluminum Association (AA)

AA DAF-45 (1997) Designation System for Aluminum Finishes

1.2.2.6 American Architectural Manufacturers Association (AAMA)

AAMA 101 (1997) Voluntary Specification for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors

1.2.2.7 Tile Council of America (TCA)

1.2.2.8 Unified Facilities Criteria (UFC)

UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings
Dated 8 October 2003

1.2.2.9 ASTM International (ASTM)

ASTM C 1036(2001) Flat Glass

ASTM C 1172(2003) Laminated Architectural Flat Glass

ASTM E 84(2003) Surface Burning Characteristics of Building Materials

ASTM E 90 (2002) Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements

ASTM E 162(2002a) Surface Flammability of Materials Using a Radiant Heat Energy Source

ASTM E 413 (1987; R 1999) Rating Sound Insulation

1.2.2.10 BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)

BHMA A156.10 (1999) POWER OPERATED PEDESTRIAN DOORS

1.2.2.11 U.S. GENERAL SERVICES ADMINISTRATION (GSA)

FED-STD 795(Basic; Am 1) Uniform Federal Accessibility Standards

1.2.2.12 STEEL DOOR INSTITUTE (SDI)

SDI A250.8(2003) Standard Steel Doors and Frames

1.2.2.13 U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

16 CFR 1201 Safety Standard for Architectural Glazing Materials

1.2.2.14 UNDERWRITERS LABORATORIES (UL)

UL 752(2000) Bullet-Resisting Equipment

1.2.2.15 Unified Facilities Criteria (UFC)

UFC 1-200-01 (31 July 2002) Design: General Building Requirements

1.2.2.16 Facility Excellence Plan (FEP)

FEP (2004) Peterson Design Guide

1.3 DESIRED IMAGE AND ARCHITECTURAL COMPATIBILITY

The Proposer shall verify all drawings and provided information of conditions and dimensions during design and prior to construction.

The building shall fit the site limitations and shall comply with Peterson AFB Design Guidelines. Building facades and elevations shall be similar in appearance to the existing facility and enclosed as-built elevation drawings.

1.4 TYPE AND METHOD OF CONSTRUCTION

1.4.1 Facility Construction

Facility shall be designed as permanent construction. The definition of permanent construction per UFC 1-200-01: Buildings and facilities designed and constructed to serve a life expectancy of more than 25 years, should be energy efficient, and must have finishes, materials, and systems selected for low maintenance, recycled materials, and low life-cycle cost.

Types and methods of construction shall be limited to the criteria established herein and shall meet all governing codes.

Wood construction shall not be permitted.

Any concrete masonry units walls used in this buildings shall be developed on a standard masonry module. Standardization of masonry wall design shall be developed which result in as few cut blocks as possible. Masonry structural properties shall comply with requirements outlined in Section 01005 STRUCTURAL REQUIREMENTS.

Walls, windows, floors,and roofing systems shall be permanently constructed and attached to each other. All construction shall be done in a workman like manner, properly installed and finished.

Methods, materials, systems, etc. shall be of a quality that requires little or no maintenance.

1.4.2 Exterior Walls and Finish Materials

Exterior walls and finish materials shall be selected on the basis of architectural compatibility and appearance in accordance with the design provided. The outside face of the exterior walls shall be composed of face brick and precast concrete units (as indicated on the drawings). Exterior walls shall have a minimum "U" Value of 0.05 based on aged insulation values for the entire exterior wall construction.

1.4.3 Interior Wall Construction

All interior walls as noted on the drawing shall be permanent construction.

Gypsum wallboard shall not be less than 5/8-inches thick.

Steel studs shall be sized according to the wall heights required, but in no case shall they be less than 3-5/8" in depth and 20 gage galvanized steel. All interior gypsum board walls and ceiling framing shall meet or exceed a minimum of 10 psf loading with a maximum mid span deflection of L/360.

Interior walls requiring fire and STC ratings shall extend to the underside of the roof or floor structure shall be designed and constructed in accordance with UL and approved tested systems. Also, it is also noted in the Room Finish Schedule some areas shall receive full height walls, which extend to the structure. All full height walls shall be sealed at the wall/ceiling connections, yet have provisions for structural deflection of the structure.

1.4.4 Interior Wall Finishes

Interior wall finishes shall be low maintenance finishes suitable for the environment of this building.

All areas generally shall receive a painted finish except as described herein. The public corridors shall receive a Multi-Colored speckeled paint finish- matching the existing corridor finish. See Room Finish Schedule for additional information.

Some toilet room walls (three walls) shall receive a 6 inch by 6 inch by 4'-0" wainscot height porcelain tile. The top course shall be bullnosed unit. The wall directly behind the toilets and urnials and the walls perpinduclar to this wall shall receive a tile wainscot. The tiled walls shall be set using a Dry-Set mortar method in accordance with the Tile

Council of America. Tile backer board shall be provided at toilet room and janitors closet.

A 6 inch by 6 inch tiled backsplash shall be provided at each janitor sink location. The tiled backsplash shall extend a minimum 3 feet above-finish-floor and 2 feet beyond the edges of the sink.

A 8 inch by 8 inch tiled finish shall be installed on all sides of the lobby Built-In Display Unit. A colored tile banding shall installed on the top and bottom of the unit as shown on the drawings. Also, a 8 inch by 8 inch tiled finish shall be installed on the toilet room entrance as shown on the drawings.

All kitchenettes shall receive a 6 inch by 6 inch tiled area between the top of the backsplash and the bottom of the overhead cabinets. The tiled area shall extend for the full length of the countertop.

All exposed gypsum board wall surfaces shall be painted.

See paint paragraph for painting systems requirements. Painting shall be in complianbce with the Peterson AFB- Facility Excellence Plan (FEP).

Areas where noted to receive chair rails shall be provided with a 2-1/2 inch high by 3/4-inch deep continuous chair rails on all 4 walls from edge of door frame to edge of door frame and they shall be mounted with a top elevation of 34" above-finish-floor. Chair rails shall be a birch wood of clear premium grade hardwood and stained to match cherry wood. Chair rail shall be of a simple and yet decorative molding design to match other woodwork and cabinetry items provided under this contract. Finish shall be stain and varnish, color as indicated in the Interior Design Section.

1.4.5 Floors

The first floor shall be concrete slab on grade. All floors above the slab on grade floor shall be concrete slabs on steel structure.

A thin-set mortar bed method shall be used for all floors that will receive tile in accordance with the Tile Council of America (TCA) methods.

1.4.6 Floor Finishes

A 12 inch by 12 inch porcelain tile shall be set in a thin-set mortar bed method as noted in the specifications. Tile floors in all rooms shall be level except in the immediate areas around floor drains, which shall be sloped.

All exposed concrete slabs shall be cleaned and sealed with a concrete hardener for durability and minimization of dust. See SECTION 1004 Interior Design Section for additional information.

1.4.7 Ceiling Finishes

A spray applied light to medium-textured gypsum board ceiling shall be the typical ceiling finish, unless noted otherwise and shall be painted. Smooth ceilings shall be provided in the restrooms.

Acoustical tile ceiling panels shall be 2-foot by 2-foot on a suspended

prefinished metal grid and the panels shall be at least 3/4-inch thick mineral fiber material installed at locations as indicated. See Room Finish Schedule for acoustical tile locations.

It will be acceptable for mechanical, electrical, communication and janitor closet have exposed structures that do not require any finished ceilings. However, exposed structural elements in these areas will require painting or a spray-applied fireproofing depending on structural design and compliance with applicable building and fire safety code requirements.

1.4.8 Ceiling Height

The minimum allowable clearance for ceilings shall be 9'-0", unless noted otherwise in the room finish schedule. The contractor can exceed these minimum as needed to allow for a more functional area.

1.5 FUNCTIONAL REQUIREMENTS

1.5.1 Equipment and Furnishings

1.5.1.1 Contractor Furnished and Contractor Installed Equipment (CFCI)

Equipment and furnishings as specified herein and as indicated on the drawings which are not indicated to be Government Furnished Contractor Installed (GFCI) or Government Furnished Government Installed (GFGI) shall be Contractor Furnished and Contractor Installed equipment and furnishings and shall include all of the below listed items but shall not be limited to the following:

Walk-Off Rubber Tiles
Motorized Projection Screens
Transaction Window Unit
Postal Units
Recessed Mounted Projector Holder
Fire Extinguisher Cabinets With 10 lbs. Fire Extinguishers (Semi-Recessed)
Casework, With Drawers and Cabinets
Customer Service Counters
Personnel Doors And Associated Hardware (Standard, Fire Rated, And Insulated)
Mop Sink, Mop Rack And Utility Storage Shelving
Key Storage Cabinet
Mirrors
Toilet Accessories
Electric Water Coolers
Built-in Display Case
Marker Boards
Bulletin Boards
Woven Wire Mesh Storage & Partitions
Kitchenette Equipment
Operable Wall / Accordion Partitions

1.5.2 Occupational Safety and Health

Building design shall comply with OSHA Occupational Safety and Health Standards criteria for all items which must be included in the design to ensure safety compliance.

1.5.3 Handicapped Accessibility

The building shall comply with handicapped accessibility requirements as out lined in the American With Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities.

1.5.4 Sound and Vibration Control

Standard materials and installation procedures shall be incorporated into the facility that reduce sound and vibration. When constructing walls, floors, ceilings, and roofs, materials shall be selected that will impede transmission of equipment vibrations and noise between rooms and within rooms. All interior walls shall extend up to the underside of structure and form an air-tight seal.

Interior gypsum board walls shall be filled with a 3 1/4 inch sound batt insulation and sealed at the floor and upper structure attachment at the following locations:
a. perimeter walls of an organization,
b. perimeter walls of the toilets,
c. perimeter walls of the stairs,
d. perimeter walls of a conference, conference source selection and classrooms,
e. perimeter walls of the public corridors,
f. perimeter walls of the Wartime room,
g. perimeter walls of the mechanical chases,
h. perimeter walls of the communications and electrical rooms.
i. perimeter walls of the following offices: MXG/CC- CC, CD, CEM & CCE, SW/MO- Chief, SVS/CC- Chief, 1st Sgt., SVS/SVF- Chief, LGC- Chief, LGC Deputy, BZ- Office, ME & EEO- all offices, LGCC- Chief, LGCB- Chief, LGCZ- Chief & LGCP- Chief,
j. perimeter walls of the computer server.

Interior gypsum board walls located on the perimeter of the mechanical and electrical rooms shall be filled with a 6 inch sound batt insulation and sealed at the floor and upper structure attachment. A minimum of two 5/8 inch gypsum board layers shall be provided on the mechanical and electrical room wall side of the perimeter walls.

Interior gypsum board walls located on the primeter of the Test Center room and adjacent storage room walls construction shall achieve a minimum STC 48. The perimeter shall be filled with a sound batt insulation and sealed at the floor and upper structure attachment.

Particular design/construction care shall be provided to avoid sound transmission sound transmission from one space to another. All mechanical and electrical walls penetrations shall be constructed to avoid direct sound transmission conduction. Sound absorption links shall be used to prevent direct transfer of vibrations to the walls.

1.5.5 Physical Security

Conventional security measures, such as: standard manual door locking hardware, cipher locks, and other means shall be incorporated into the facility design and development. See specific paragraphs in this section for additional security criteria.

1.5.6 Composition of Masses, Spaces and Architectural Details to Reflect the Desired Image, Scale and Nature of the Activities Involved

Features of scale such as horizontal banding, and changes in texture shall be used to tie the building together with the ground line. Materials selected shall be compatible with "commercial" construction. Building elevations shall be as indicated on the drawing and shall be similar to the existing building #350. Final color and material selections shall be approved by the Base.

1.5.7 Economy of Building Construction, Operation, and Maintenance: Life-Cycle Cost Effectiveness

1.5.7.1 Economy

All materials shall be readily available within the local area, as shall sufficient trades to construct the building.

No special or unique forms of construction shall be used and skilled workers within the area shall be familiar with the proper methods required to build this facility.

1.5.7.2 Operations and Maintenance

Material selections shall be based upon reducing operation and maintenance costs. All materials shall be easy to clean and resist soiling.

1.6 TECHNICAL REQUIREMENTS

1.6.1 CONCRETE

1.6.1.1 Precast Architectural Concrete

Precast concrete panels shall be designed and fabricated by an experienced and acceptable precast concrete manufacturer certified under the PCI Plant Certification Program. The manufacturer shall have been regularly and continuously engaged in the manufacture of precast concrete work similar to that indicated on the drawings for at least 3 years. Precast work shall be coordinated with the work of other trades.

Finishes for the precast concrete panels shall match the existing building #350. Surfaces of precast units exposed to view or surfaces indicated to be finished shall be finished to match existing panels with an acid etched finish. Finishes are to be submitted and approved through shop drawings. See Architectural drawings for locations of finishes.

1.6.2 Miscellaneous Metals

1.6.2.1 Access Doors and Panels

Access doors and panels shall be flush type. Frames for access doors shall be fabricated of not lighter than 16 gauge steel with welded joints and finished with anchorage for securing into construction. Access doors shall be a minimum of 14-inches by 20-inches and of not lighter than 14 gauge steel, with stiffened edges, complete with attachments. Access doors shall be hinged to frame and provided with a flush face and a keyed operated latch. Exposed metal surfaces shall have a shop applied prime coat. Finished paint coat shall match surrounding surfaces. Panel shall be installed in unhabitable rooms (i.e., closets) and/or non-conspicuous

locations. Panels shall be installed at all locations requiring access to plumbing, mechanical and electrical controls.

1.6.2.2 Louvers, Dampers, and Ductwork

Detailing and construction of louvers, motorized dampers, and ductwork shall be coordinated. Louvers shall be installed high on the exterior walls to meet the criteria established by DoD Minimum Antiterrorism Standards for Buildings. Louver design shall prevent penetration of wind driven rain and be drainable. Louvers shall have a Class A rating in accordance with AMCA effectiveness ratings when subjected to a minimum intake free area velocity of 850 FPM. All exterior louvers shall arrive to the project site with a factory baked enamel finish. Paint finish shall be applied on all surfaces of the louver.

1.6.2.3 Miscellaneous

Detailing and construction of louvers, motorized dampers, and ductwork shall be coordinated.

1.6.2.4 Steel Handrails

Steel handrails and balusters for fire escape stairs shall be a nominal 1-1/2 inch in size. All steel handrails, supports, balusters and other components shall be painted. Stair balusters shall be approximately 4 to 5 feet apart and match existing. Overall, the fire escape stair's steel handrail system shall match the existing Building #350 handrail system with woven wire mesh panel inserts between the balusters.

The lobby stairs and mezzanine lobby guard railing shall have a clear tempered or laminated safety glass panels between the balusters and handrail. The glazing panels shall be used as in fill between the stair handrail supports. A continuous top and bottom brushed aluminum support shall be provided for the lobby stair and mezzanine guard rail. Overall stairs and mezzanine guard railing shall match existing Building #350 system.

The second floor mezzanine lobby guard railing and planter shall match the existing Building #350 planter design. A low walled gypsum board edge shall provide a return for the planter. Contractor will be required to furnish and install living plants and soil as currently installed in the existing facility. The planter shall be completely fitted to accommodate soil, water irrigation and not leak. See as-built drawings for additional information regarding the stairs and planter detailing.

1.6.3 Finish Carpentry

1.6.3.1 Utility Shelving

All utility shelving shall be Grade A-B, 1 inch thick plywood, interior type. Shelving shall be approximately 12 inches wide. A melamine laminate finish shall cover all shelving surfaces. Shelving shall be supported by adjustable metal supports. Provide a minimum of four (4) shelves at locations indicated on the drawings. The lower level shelving shall start a minimum 1 foot above finish floor and shall be spaced a minimum 15 inches vertically between each shelf. Shelving shall be capable to provide a minimum 15 lbs./ linear foot. See Interior Design Section for color schedule and selection.

1.6.3.2 Moldings (chair rails)

Moldings shall be Premium Grade or Grade A birch wood and stained to match cherry wood. See Interior Design Section for stain color schedule.

1.6.4 Solid Polymer (solid Surfacing Fabrications

A typical full size cabinet with countertops shall be submitted for approval prior to final approval of the shop drawings. Countertops and backsplashes shall be a solid polymer material shall be a cast, 100 percent acrylic polymer solid surfacing material. Backsplashes shall be loose and field applied. Surface finish shall be a matte, gloss rating of 5-20. All countertops in the toilets, kitchenettes, window stools, and other cabinets shown on the plans shall have a solid surfacing finish.

1.6.5 Vapor Barrier

A Vapor Barrier shall be provided to control the passage of moisture vapor from the interior of the facility to the exterior. The Vapor Barrier shall be installed as a continuous envelope at the interior (warm side) of exterior walls. As a minimum the Vapor Barrier membrane shall be 6 mil or heavier polyethylene sheet providing a "perm" rating of .02 or less. The installation, including treatment of seams and sealing of penetrations and tears of any kind, shall be according to the manufacturer's recommendations.

1.6.6 Roof Insulation

Roofing insulation shall be a polyisocyanurate type. A minimum aged "R" value of the roofing insulation shall be R-33, based upon a R-5.56 per 1-inch of thickness.

1.6.7 Roof Design

The roofing system for all roof areas of this facility shall be of the following type.

1.6.8 Elastomeric Roofing (EPDM)

Roofing for the facility shall consist of a Elastomeric Roofing (EPDM)system. The critical aspects of the roofing system shall be moisture penetration resistance, thermal resistance and minimal maintenance. EPDM roofing shall be a fully adhered, mechanically fastened, (non-ballasted) system. Roofing installation shall be installed as recommended by the roofing manufacturer.

Roof slopes shall be a minimum of 1/2-inch per foot.

Primary roof slope shall be accomplished by sloping of the structural roof framing members to an interior roof type drainage system. Design should avoid use of "crickets" between drains.

Roof system shall provide a 20 year minimum warranty.

Roof system shall include a vapor retarder membrane.

Lightning protection shall be fully integrated and coordinated with the roofing detailing, and installation to not jeopardize in any way the roof warranty.

Roof drains shall be interior type drainage system that will be connected into the storm sewer system (and insulated to prevent condensation). Overflow drainage shall be by overflow roof drains located near each primary roof drain so that excessive ponding does not occur. Primary and overflow roof drains shall be located so that they receive sun exposure. Roof drains shall not be located near parapet walls or other roof obstructions that might inhibit their functionality due to snow or ice build-up.

1.6.9 Metal Roof and Wall Panels

Metal roof and wall panels shall match existing Building #350 metal panel finishing and reveals. Existing Building #350 metal panel types are aluminum with an exterior 1.0 mil thickness factory applied baked coating finish, 0.8 mil interior panel paint thickness, a 1/2" width dry joint type at 4'-0" o.c., a smooth panel finish, and fastened with concealed clips. New exterior metal panels shall have a minimum 1-inch insulated core material of either polystyrene or isocyanurate insulation. Roof screen panels are not required to be insulated panel types. Double doors, matching the existing roof screen panels profile shall be provided where shown on the drawings.

1.6.10 Sheet Metalwork, General

Contractor shall include a quality assurance plan which includes a checklist of points to be observed, prior to start of roofing work.

All interior cavity thru-wall flashing shall be a metal type. An elastomeric ply sheeting is not considered to be acceptable.

Fascia shall have "V" crimps and a stable substrate as required to prevent "oil-canning" effect.

1.6.11 Doors

a. All doors shall be 3 feet (width) by 7 feet (height) by 1 3/4 inch (thickness) in size, unless noted otherwise.

b. Exterior mechanical, electrical and stair exit doors shall be SDI A250.8, Level 3 extra heavy duty flush steel type with 16 gauge pressed steel frames. Doors shall be weather tight, and insulated to meet a minimum R-value of 10. All exterior steel door shall have a designation G60 and all interior doors shall have a designation G40 galvanization. Steel door frames shall have a thermal break to prevent temperature transfer. Doors shall be complete door and frame assemblies with weatherstripping, door bottoms, and threshold. All exit door locations shall have exit hardware devices. Window walls, door frames and glazing units for exterior door units shall be anchored to meet DoD Minimum Antiterrorism For Buildings requirements.

c. All exterior steel doors which require air louvers shall have the "Y" sight proof type louver blades and an interior mounted bird screen wire mesh protection.

d. Doors air louvers will not be permitted on any interior door. Air ventilation requirements shall be achieved through wall and ceiling grilles.

e. All exterior aluminum doors shall meet or exceed heavy duty (Grade II) requirements. Doors shall be full glazed with narrow stiles and rails.

Air leakage of a single leaf weatherstripped door shall not exceed 0.5 cubic feet per minute of air per square foot of door. An integral color-anodized AA-M10-C22-A42, Architectural Class I 0.7 mil or thicker finish shall be provided on all aluminum doors, windows and door frames. The aluminum color shall match the existing dark bronze aluminum on Building #350.

f. All exterior doors shall open on to a structural concrete landing or stoop.

g. All fire rated doors shall conform to NFPA 101 and NFPA 80.

h. Main building entrance aluminum doors shall be incorporated into the window wall system as indicated on the elevations.

i. Exterior steel double doors shall have a removable mullion frame assembly. Exterior aluminum double doors shall not be divided with a mullion frame assembly.

j. All exterior doors and frame assemblies shall arrive to the job site with a factory applied A25 galvannealed finish and a primer finish. It shall be the Contractor's option to have the final door and frame paint finish a factory or field applied finish. Number of paint coats shall be in accordances with SECTION 09900 PAINTS AND COATINGS.

k. Exterior and interior doors in fire rated walls shall be fire rated according to the fire rating requirements of the walls in which they occur. All fire doors shall be in accordance with the requirements of NFPA #101 and NFPA 80.

l. All interior wood doors shall be a solid core, 1 3/4" type with a white birch veneer face. Doors shall be a 5 ply or 7 ply construction. Wood grade shall be a premium grade with a rotary cut finish. Doors shall arrive to the job site with a factory finish. Wood finishing and color shall be in accordance with SECTION 09900 PAINTS AND COATINGS and 09915 COLOR SCHEDULE.

m. All interior door frames shall be 2 inch width frames (head and jamb), 16 gauge minimum pressed steel and shall be provided with either 16 gauge heavy duty flush steel painted type doors or solid core wood doors as indicated.

n. All interior steel doors and frames shall arrive to the job site with a factory applied primer finish. It shall be the Contractor's option to have the final door and frame paint finish a factory or field applied finish. Number of paint coats shall be in accordances with SECTION 09900 PAINTS AND COATINGS. All interior fire rated doors shall comply with the requirements set forth in NFPA 101 and NFPA 80.

o. A minimum STC 48 sound rated doors, door frames, and thresholds shall be provided at all of the Testing Center room doors. Doors, frames and hardware shall be an assembly, which is a manufacturer's standard product and shall have been tested in accordance with the specifications testing requirements. Door appearance shall have a wood finish to match other facility interior wood doors.

p. All organization interior entrance doors shall be solid core wood birch doors with full height glazing, where noted. See detail 7/A4.10 for additional graphical information.

1.6.12 Hardware; Builder's (General Purpose)

1.6.12.1 Hinges

All hinges shall be grade I anti-friction bearing with a minimum of 3 hinges per door leaf. Hinges shall be fully recessed and fit flush within designated frame slots.

1.6.12.2 Locks and Latchsets

All exterior mortised door locks and latchsets shall be series 1000 mortised type.

All interior mortised door locks and latchsets shall be series 1000 mortised type.

All interior bored door locks and latchsets shall be series 4000 bored type.

1.6.12.3 Lock Cylinders

Lock cylinders shall have key removable type core. The lock cylinders shall compatible with the existing Base lock cylinders. The existing Base lock cylinders installed are manufactured by Best. Locks and locksets shall use the Best patented interchangeable figure "8" core lock system with the seven pin "B1" keyway. Disassembly of knobs, lever and locksets shall not be required to remove core from lockset. All locksets, and lockable exit devices shall accept the same interchangeable cores.

Provide a minimum of 5 spare cores, 2 blank master key sets and 12 blank keys.

1.6.12.4 Lock Trim

All of the doors of this facility shall comply with the handicapped accessibility requirements as out lined in the Americans With Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities. All doors shall be provided with lever handles (unless noted otherwise) and all exterior doors shall have modern panic type hardware.

1.6.13 Keying

Contractor shall provide and install removable construction cores (which will be returned to the Contractor at time of final acceptance). Contractor shall coordinate with Peterson AFB and Best for the final keyed cores for all locks and locksets which shall be keyed by Best Locks using the Peterson AFB master keying system. Final keyed cores shall be sent by Best via certified mail to the Peterson AFB locksmith for government installation.

1.6.14 Door Closing Devices

Surface type overhead door closures shall be Grade 1, Series CO2000 Standard Cover. Closures shall be size VI. Closure shall be mounted out-of-view (if possible).

1.6.15 Auxiliary Hardware

Door floor stop and holder shall be Type L01371.

Door wall stop shall be Type L02251 (concave).

Lever extension flush bolts shall be type L04081 or L04251 (for fire rated doors) and they shall be installed with type L04021 dust proof strikes.

Metal thresholds shall be Type J12120 ADA approved.

Stainless steel kick plates shall be a minimum 6-inches high and with a width that shall be 1-inch less then the doors width, less astragal if provided. Except at full glass doors in which case the kick plate height shall be 1-inch less then the bottom rail height. Kick plates shall be installed on all doors on the "impact" side (opposite hinge side), except aluminum doors.

All exterior doors shall have aluminum housed type weather seals. Door sweeps shall be concealed from view and installed within the door. Head and jamb weatherstripping shall be recessed within the door and frame members as required. Surface applied weatherstripping and sweeps shall be considered unacceptable.

All exterior pairs of doors and interior vestibule pairs of doors shall be provide with full height overlapping astragals and modern type top jamb mounted door coordinators.

All sound rated doors shall have compression type seal gasketing.

Door holder shall be a lever type, L01381,

1.6.16 Finishes

Door hardware finish shall match satin stainless steel Type 630.

1.6.17 Power Operated Pedestrian Doors

Door and hardware shall be in compliance BHMA A156.10. Door opening width shall be a minimum 45 inches or greater.

Sliding door shall have a sign reading "AUTOMATIC DOOR"

Door activation shall be controlled from both sides with an overhead detector. Emergency door break away features shall be incorporated into the door construction. Door shall have standard keying locking capability.

1.6.18 Door Hardware

1.6.18.1 Hardware Requirements

Door hardware in fire rated walls shall comply with NFPA and other applicable criteria.

1.6.18.2 Cipher Locks

Cipher locks shall be a push button mechanical lock. Cipher locks shall be a series 8100, manufactured by Unican, 2941 Indiana Avenue, Winston Salem, NC 27105, (800) 849-8324 or equal type of lockset. Lockset shall be a Grade 1, heavy duty lock and housing. Lockset shall have a mortise lock and dead bolt with a key override lockout passage feature. Lockset must be able to accept an interchangeable cores from "Best" lock manufacturer.

1.6.18.3 Hardware Sets

The following hardware sets listed are the minimum functional hardware requirements for each door type. Additional hardware may be required for each door type other than what is listed below. Hardware for double doors locations shall be applied to both doors, unless noted otherwise.

a. Exterior Doors

Hardware Set #1-E (4 locations)
(Single Exterior Steel Doors)
Locations: exterior corridor and stair exit doors.

Grade 1 Hinges
Exit Devices- Type 6 (narrow stile surface vertical rod exit device),
Function 8 (entrance by lever, key locks or unlocks lever)
Overhead Closers
Exterior floor door stop
Kick Plate
Weatherstripping
Threshold

Hardware Set #2-E (2 locations)
(Double Exterior Steel Doors)
Locations: doors at exterior mechanical and electrical rooms.

Grade 1 Hinges (each door)
Exit Devices- Type 5 (narrow stile surface vertical rod exit device),
Function 9 (entrance by lever, key removable only when locked)
(active leaf only)
Overhead Closer- on active leaf only
Exterior floor door stop (each door)
Weatherstripping
Lever Extension Flush Bolts- inactive leaf
Kick Plate (each door)
Full Height Overlapping Astragal
Dust Proof Strikes
Interior Mounted Kick Plates (each door)
Threshold

Hardware Set #3-E (2 locations)
(Double Exterior Aluminum Doors)
Locations: doors at exterior building entrances.

Grade 1 Hinges (each door)
Exit Devices- Type 4 (narrow stile rim exit device),
Function 4 (entrance by trim, or set in retracted position by key),
(each door)
Overhead Closers (each door)
Exterior floor door stops (each door)
Weatherstripping (each door)
Removable Mullion
Threshold

b. Interior Doors

Hardware Set #1-I (2 locations)
(Double Interior Aluminum Doors)

Locations: doors at interior vestibule building entrance.

Grade 1 Hinges (each door)
Push Bar J501 (each door)
Pull J401 (each door)
Overhead Closers- extended swing range (each door)
Floor door stops (each door)
Threshold

Hardware Set #2-I (2 locations)
(STC 45 Double Interior Wood Doors)
Locations: double doors at Test Center conference room entrance.

Grade 1 Hinges (each door)
Exit Devices- Type 4 (narrow stile rim exit device), (each leaf)
Function 4 (entrance by trim, door is always operable- no keying required), (each door)
Overhead Closers- extended swing range (each door)
Removable mullion
Kick Plates (each door)
Floor door stops (each door)
Threshold
Sound rated gaskets

Hardware Set #3-I (2 locations)
(STC 45 Single Interior Wood Doors)
Locations: single doors at Test Center conference room entrance.

Grade 1 Hinges
Exit Devices- Type 4 (narrow stile rim exit device), (each leaf)
Function 4 (entrance by trim, door is always operable- no keying required)
Overhead Closer
Kick Plate
Wall door stops

Hardware Set #4-I (3 locations)
(Single Interior Wood Doors)
Locations: single doors at Library (first floor), Office 1055, and main entrance to ME office (second floor).

Grade 1 Hinges
Bored Lockset- F84 Classroom Lock (lock from outside only)
Overhead Closure
Kick Plates
Floor and/or wall door stops

Hardware Set #5-I
(Single Interior Wood Doors)
Locations: single doors at conference and class/conference rooms (doors swings out from these rooms).

Grade 1 Hinges
Exit Devices- Type 4 (narrow stile rim exit device),
Function 4 (entrance by trim, door is always operable- no keying required, except at the following rooms: 2nd floor class conference and conference room source selection rooms shall be keyed F08 function)
Overhead Closer
Kick Plates

Wall Stop

Hardware Set #6-I
(Single Interior Wood Doors)
Locations: single doors at conference and classroom rooms (doors swings into these rooms), doors swinging into classrooms.

Grade 1 Hinges
Bored Lockset- F75 Passage with Lever Handle
Overhead Closer
Kick Plates
Wall Stop

Hardware Set #7-I (1 location)
(Power Operated Sliding Single Aluminum Door)
Locations: doors at DPF entrance.

Hardware Set #8-I (6 locations)
(Single Interior Wood Doors)
Locations: doors at stairs.

Grade 1 Hinges
Exit Devices- Type 4 (narrow stile rim exit device),
Function 4 (entrance by trim, door is always operable- no keying required)
Overhead Closer
Kick Plate
Wall Stop

Hardware Set #9-I
(Single Interior Wood Doors)
Locations: doors in individual offices (not doors into organizational units off public corridors), and BZ to waiting area. This hardware set is typical for all door locations not listed herein.

Grade 1 Hinges
Bored Lockset- F84 Classroom Lock (lock from outside only)
Kick Plate
Door Holder
Wall Stop

Hardware Set #10-I (6 locations)
(Single Interior Wood Doors)
Locations: doors at electrical, communication, and janitor rooms.

Grade 1 Hinges
Bored Lockset- F40 Store Room Lock
Overhead Closer
Kick Plate
Wall Stop

Hardware Set #11-I

(Single Interior Wood Doors)
Locations: doors in organizational offices (doors into organizational units off public corridors).

Grade 1 Hinges
Exit Devices- Type 4 (narrow stile rim exit device),

Function 11 (entrance by control turn piece, key locks or unlocks control
Overhead Closer
Kick Plate
Wall Stop

Hardware Set #12-I (4 locations)
(Single Interior Wood Doors)
Locations: doors into toilet rooms.

Grade 1 Hinges
Push Plate
Pull Plate
Overhead Closer
Kick Plate
Wall Stop

Hardware Set #13-I (2 locations) (Contract Option Only)
(Single Interior Wood Doors)
Locations: doors into SVS/SVF-IT (doors off public corridor)and SVS/SVF Funds Storage door.

Grade 1 Hinges
Mechanical Cipher Lock
Overhead Closer
Kick Plate
Wall Stop

Hardware Set #14-I (2 locations)
(Accordion Partition Doors)
Locations: doors in class/conf. & conference rm. source selection.

See Specifications for hardware requirements.

Hardware Set #15-I (1 location)
(Operable Partition Doors)
Locations: doors in Test Center room.

Hardware Set #16-I
(Single Interior Wood Doors)
Locations: single doors at all storage room entrances.

Grade 1 Hinges
Bored Lockset- F84 Classroom Lock (lock from outside only)
Overhead Closure (only where required by Code)
Kick Plates
Floor and/or wall door stops

Hardware Set #17-I (2 locations)
(Single Interior Wood Doors)
Locations: doors into SW/MO- Wartime room and LGCZ computer server room.

Grade 1 Hinges
Mechanical Cipher Lock
Overhead Closer
Kick Plate
Wall Stop

See Specifications for hardware requirements.

1.6.19 Key Storage System

A recessed wall mounted key cabinet shall be provided in the MSG/CCB office and shall contain all additional keys for all areas of the building. The cabinet shall have the capacity to store a minimum of two keys for each room on an individual key hook. Key hooks shall be mounted on panels with sufficient distance between hooks that will allow easy identification and removal. Cabinet key panels shall be readily removable and capable to insert additional panels for possible expansion needs of doubling of what is currently needed. Key cabinet shall have key locking capabilities. Cabinet door shall be a full height piano hinge.

1.6.20 Door Glazing

For door glazing requirements see paragraph Glass and Glazing below.

1.6.21 Aluminum Windows and Glazed Curtain Walls

Window manufacturer shall specialize in designing and manufacturing the type of aluminum windows specified in this section, and shall have a minimum of 10 years of documented successful experience. Exposed surfaces of aluminum window frames shall be finished with anodic coating conforming to AA DAF-45: Architectural Class I, AA M10-C22-A42, color anodic coating, 0.7 mil or thicker with a black finish to match existing building #350. Window frames and glazing units for exterior window units shall meet DoD Minimum Antiterrorism Standards for Buildings requirements in accordance with UFC 4-010-01, paragraph B3.1.1.

Due to Force Protection requirements for this facility, all exterior glazing units will require the inner glass unit to be laminate type glass. All exterior glazing units shall be installed with a "wet" glazing setting method, which provides a completely filled and continuous sealant bond between the glazing unit and frame.

Aluminum windows construction shall consist of an aluminum frame with a continuous thermal break. Thermal transmittance performance ratings shall not exceed a U-factor or 0.35 Btu/hr-ft2-F. Performance rating of these windows shall be a HC 65 or greater in accordance with performance rating testing with AAMA 101. These windows shall include insulated glazing unit with solar film as specified in specification Section 08810a GLASS AND GLAZING. Window frames shall have a dark bronze anodized finish.

All window and curtain wall frames shall have removable frame stops which are mechanically fastened on the interior side in order to comply with facility bomb protection.

1.6.22 Glass and Glazing

1.6.22.1 Insulated Laminated Glass

Insulated laminated type glass units for window applications shall be a minimum of 1-inch thick and shall meet DoD Minimum Antiterrorism Standards for Buildings requirements. Glass panels shall as a minimum consist of two 1/4-inch thick glass panes separated by a 1/2-inch hermetically sealed air space. The outboard glass panel shall be Low-E glazing, Type I annealed glass, Class 1 - tinted, Quality q3 - glazing select conforming to ASTM C 1036. Glazing unit shall have a black tint color, which matches existing Building #350. The inboard laminated glass panel shall consist of two layers of Type I transparent float glass, Class 1 - clear, Quality q3 -

glazing select conforming to ASTM C 1036. The glass shall be bonded together with a 0.38 mm thick PVB inner layer under pressure, or alternatives such as resin laminates, conforming to the requirements of 16 CFR 1201 and ASTM C 1172. For the laminated glass panel the glass and PVB color shall be clear. All insulated glazing units shall be tinted (to match existing building #350). Minimum glazing unit performance shall provide a U-value/Winter Nighttime of 0.32, 30 percent visible light transmittance and 0.32 percent shading coefficient.

Insulated laminated type glass units for door applications shall be a minimum of 1-inch thick and shall meet DoD Minimum Antiterrorism Standoff Distances For Buildings requirements. Glass panels shall as a minimum consist of two 1/4-inch thick tempered glass panes separated by a 1/2-inch hermetically sealed air space. The outboard glass panel shall be Low-E tempered glazing, Type I float glass, Class 1 - tinted, Quality q3 - glazing select conforming to ASTM C 1036. Glazing unit shall have a black tint color, which matches existing Building #350. The inboard laminated glass panel shall consist of two layers of tempered glazing, Type I transparent float glass, Class 1 - clear, Quality q3 - glazing select conforming to ASTM C 1036. The glass shall be bonded together with a 0.38 mm thick PVB inner layer under pressure, or alternatives such as resin laminates, conforming to the requirements of 16 CFR 1201 and ASTM C 1172. For the laminated glass panel the glass and PVB color shall be clear. All insulated glazing units shall be tinted (to match existing building #350). Minimum glazing unit performance shall provide a U-value/Winter Nighttime of 0.32, 30 percent visible light transmittance and 0.32 percent shading coefficient.

1.6.22.2 Glass Mirrors

All glass mirrors shall be Type I transparent flat type, Class 1-clear, 1/4-inch thickness.

1.6.22.3 Interior Glass Window Units

A minimum of 1/4 inch thick glass units shall be used for interior glass units. Glass shall be Type I, Class 1 (clear), Quality 3. Contractor has the option to use a laminate or tempered glass units in locations were required by code.

1.6.22.4 Wire Glass

Glass for fire rated windows shall be rated in accordance to governing code requirements. Glass shall be Type II, Class 1, Quality q7, Form 1 with a polished stainless steel Mesh 1- diamond.

1.6.22.5 Transaction Window Unit (Contract Option Only)

A minimum of 3/8 inch thick tempered glass units shall be used for interior transaction window units. Glass shall be Type I, Class 1 (clear), Quality 3. A built-in passive voice speaker shall be incorporated into the glazing. See paragraph 1.8 for additional information.

1.6.23 Gypsum Wallboard

Manufacturer shall have specialized in the manufacturing of these material products for a minimum of 10 years of documented experience.

Installer shall have a minimum of 5 years of documented experience.

All gypsum wallboard (ceilings & walls) shall be a minimum of 5/8-inch thick.

All metal studs shall be placed at a maximum distance 16-inches on-center.

Predecorated gypsum board is not considered acceptable.

Exterior gypsum soffit board is not considered acceptable.

Water-resistant gypsum backing board used as a substrate to receive wall tile is not considered an acceptable wall tile substrate. Cementitious backer board is the only acceptable type of tile backing board.

All interior gypsum board walls in toilet rooms shall be a water-resistant type.

Finishing of Gypsum Board

a. Toilet room ceilings shall receive a smooth gypsum board finish- finished to a Level 5.

b. Typical walls in habitable areas shall receive a smooth gypsum board

finish- finished to a Level 5.

1.6.24 Tile

Floor tile in toilets shall be installed in accordance with Tile Council of America (TCA) method F122.

Aluminum transition strips provided at all carpet to tile and carpet to no finish flooring transition locations.

Wall tile in toilets shall be installed in accordance with Tile Council of America (TCA) method W244.

1.6.25 Ceilings

1.6.25.1 Gypsum Board Ceiling

All gypsum wallboard shall be a minimum of 5/8-inch thick.

1.6.25.2 Acoustical Tile Ceiling

Acoustical ceiling system shall be a 2' X 2' exposed grid type. Ceiling grids shall be a standard "Tee" width of 15/16 inch and a standard factory painted white color finish. Acoustical panels shall have a square edge. Characteristics of the acoustical panels shall consist of: textured surface, high density material to resist impact damage, non perforated tile with a textured finish.

Exposed Framing Grid	
NRC:	(0.75 or greater)
Pattern:	(Armstrong- Cirrus or USG- Eclipse
Panel Edge Detail:	(Square)
Framing Grid Finish:	(Factory- applied finish)
Minimum LR Coefficient:	(LR= 0.83 or greater)
Minimum CAC:	(35 or greater)

Articulation Class (AC= 170 or greater)

1.6.25.3 Sound Control Baffles

Wall Mounted Sound Control Baffle Panels

Wall mounted sound absorption control panels shall consist of a 1 inch to 1 1/2 inch thick fibrous glass, inorganic, non combustible composition panel mounted on a metal or wood backer board. A minimum sound reduction coefficient of 0.70 shall be achieved by the panel. Panels shall be anchored to the wall surfaces by a concealed clip. A fabric covering shall be provided over the entire panel face and all edges of the sound control panels. Panels shall be fabricated by a manufacturer with a minimum of 10 years experience fabricating panels. Sound control panels shall be approximately 12 inches by 24 inches in size.

Ceiling Suspended Sound Control Baffle Panels

Ceiling sound absorption control panels shall be suspended from the acoustical ceiling and match existing building #350 panels. Overall, panel composition consist of a 1 inch to 1 1/2 inch thick fibrous glass, inorganic, non combustible composition panel mounted on a metal or wood backer board. A minimum sound reduction coefficient of 0.70 shall be achieved by the panel. Panels shall be anchored to the wall surfaces by a concealed clip. A fabric covering shall be provided over the entire panel face and all edges of the sound control panels. Panels shall be fabricated by a manufacturer with a minimum of 10 years experience fabricating panels. Sound control panels shall be approximately 48 inches by 96 inches in size. Panels shall be arranged in an "arrow" configuration, which matches the existing building design- see drawings for additional information.

1.6.26 Painting, General

1.6.26.1 Interior Surfaces to Receive Paint

A G4 enamel painted finish system shall be provided on all exposed gypsum board wall and ceiling surfaces. A G5 enamel paint shall be used on all paintable metal surfaces, such as; door frames and metal cabinets. Exposed concrete, masonry, and gypsum board surfaces in janitor closets, stairs and toilets shall receive a G6 enamel painted finish system. All "G" gloss ratings are defined in the Master Painters Institute (MPI) gloss levels and tested in accordance with ASTM D 523.

Exposed masonry walls to be painted shall receive a latex filler coat prior to paint application.

Exposed steel roof deck, structural elements, shall receive a G5 paint finish.

Exposed interior wood surfaces shall be stained and finished with a 3 coat moisture cured polyurethane finish.

See Peterson Base Facilities Excellence Plan (FEP) for additional requirements regarding paining.

1.6.26.2 Surfaces Not to be Painted

Surfaces in the following areas are not to be painted:

Surfaces in unexposed areas.

Concrete floors - except where noted.

Metal surfaces of aluminum, stainless steel, chromium plate, bronze, copper and similar finish materials.

Jacketing over pipe insulation in unexposed locations that do not require color coding.

Surfaces of hardware, fittings, sprinkler heads, fire protection equipment and other factory finished items not requiring a painted finish.

Glass, wall covering and other finish surfaces.

Contractor's shall not leave at the completion of project more than one (1) gallon of touch-up paint for each color and paint type.

1.6.27 Not Used

1.6.28 Operable Partitions

Electrically operated operable wall partitions shall be provided at locations were designated. Panels shall be finished on both sides of the panel with a synthetic fabric material. Field STC testing of the installed partitions will not be required. Partition panels shall be full height from floor to the finished ceiling. Panels shall be a minimum 3 inches thickness. Partitions shall be connected with fully concealed hinges to form a continuously hinged wall. The top and bottom of partition panels shall have fixed door sweeps seals. Operable partition in the extended position shall form a minimum STC of 48 separation between rooms. A separate pocket door to house the operable partition in the closed position shall not be required.

1.6.29 Accordion Folding Partitions

Manually operated full accordion type partitions shall be provided where shown on the drawings. Partition panels shall be full height from floor to the finished ceiling. Partitions shall have a vinyl-coated factory fabric covering. Partitions shall attain a minimum STC of 40 when fully extended. Manufacturer's standard key locking latches shall secure the partition in the fully extended position. Field testing of the installed accordion folding partitions will not be required.

1.6.30 Toilet Partitions

Toilet enclosures shall be Type I, Style A, floor supported partitions. Urinal screens shall be Type III, Style A, floor supported. Panels shall be fabricated of polymer resins (polyethylene)(solid surface) type materials.

1.6.31 Toilet Accessories

1.6.31.1 Accessory Types

Janitor rooms shall have a 18 gauge stainless steel, satin finish shelf integral 4 mop holder and 5 hook brackets shall be supplied.

Toilet partitions and urinal screens shall consist of polymer resins (solid

surface) type materials. Toilet partitions shall be floor mounted with overhead bracing. Urinal screens shall be wall mounted.

Paper Towel Dispenser (PTD)shall be a surface or semi recessed mounted unit suppling rolled paper for hand drying. The cabinet shall have a key lock. Unit shall accept 8 or 9 inch wide rolls and approximately 800 feet long. Lever handle shall deliver approximately 4 to 5 inches in towel length.

Waste Receptacle (WR)shall be a recessed unit. Unit shall have a 2 cubic foot minimum removable molded plastic insert. Unit shall be fabricated of not less than 0.30 stainless steel welded construction with all surfaces having a satin stainless steel finish.

Soap Dispenser (SD) shall be the liquid pump type with a minimum 34 fluid ounce capacity. Dispenser shall be mounted on the lavatory fixture. Dispenser refill shall be from the top of the unit.

Mirror Glass(MG) mirrors shall be installed over the lavatory countertop. Mirror shall be continuous glass for the entire length of the countertop and extend a minimum 4 feet 6 inches above the countertop.

Toilet Tissue Dispenser (TTD) shall be a double roll dispenser with a recessed holder.

Sanitary Napkin Disposal (SND) shall be wall mounted and mounted where indicated on the drawings.

Grab Bars (GB) Shall be 1-1/4-inch in diameter, 304 stainless steel, concealed mounting, and non slip finish. A separate grab bars shall be provide at the side and back wall location in accordance with ADA requirements.

Toilet Seat Cover Dispenser (TSCD) shall be Type 304 stainless steel and shall be recessed mounted with a minimum capacity of 500 seat covers.

Baby Changing Station (BSC) shall be a standard manufactured item constructed of high density polyethylene. Unit shall be a wall mounted fixture with a hinged table. Station shall be capable of supporting a minimum 225 lb. loading capacity. Overall unit size shall approximately 22 inches (height) x 36 inches (width) x 4 inches (depth). Unit shall have a built-in dispenser for towels or sanitary liners, hooks for baby diaper bag and purse.

Toilet Accessory Schedule

The following are minimum toilet accessory items to be provided in the public toilets:

Toilet partitions-	locations where shown on the drawings.
Urinal screens-	locations where shown on the drawings.
(PTD)-	4 per each toilet room.
(WR)-	4 per each toilet room.
(SD)-	4 per each toilet room (one at each sink).
(MG)-	1 at each countertop location
(TTD)-	1 per each toilet room stall.
(SND)-	1 per each women toilet room stall.
(GB)-	1 set for each handicap stall.
(TSCD)-	1 per each toilet room stall.
(BCS)-	1 per each toilet room.

1.6.31.2 Toilet Accessory Finishes

Finishes shall match stainless steel, Type 304.

1.6.32 Fire Extinguisher and Cabinets

Fire extinguisher cabinets shall be semi-recessed type with a (flat) clear glazing type door front. Cabinet shall be suitable to hold a minimum 10 pound extinguisher container. Fire extinguisher cabinets shall be located in accordance with NFPA Life Safety Code #101. Also, a 10 pound ABC fire extinguisher shall be provided and installed within the cabinet. Fire extinguisher cabinets shall match existing building #350 fire extinguisher cabinet types and color (white).

1.6.33 Janitor's Closet Accessories

Each janitor's closet shall have a broom/mop rack, storage shelving, and mop sink. Broom/mop rack and shelving shall be a minimum 54 inches in length and contain 5 holders and 6 hooks and be a Bobrick B-239 or equal.

1.6.34 Cabinets and Counter Tops

All cabinet and counter tops shall meet the requirements of the National Cabinet Association. Base cabinets, wall cabinets and counter tops shall be provided as indicated on the drawing floor plans. In each kitchenette the wall cabinets shall be constructed so that they have a shelf which will accommodate a microwave- see kitchenette equipment for sizes and type. A GFI outlet shall be provided at each microwave for convenient connection. Cabinets shall be factory-manufactured products of a modular cabinet supplier or custom-built. Wall and base cabinets shall be of the same construction and appearance. Wall and base cabinets shall be constructed with frame fronts and solid ends, or frame construction throughout. Cabinets shall be constructed per AWI Standards for custom grade joinery utilizing European assembly screws, dowels or stop dados, which are glued together. Brace the top and bottom corners with hardwood blocks that are glued with water-resistant glue and nailed in place. Cabinet materials, dimensions and thickness for cabinet construction shall comply with the below requirements.

Wall and base cabinets, shall have adjustable shelves. Base cabinets shall have 1 adjustable shelf. Wall cabinets shall have 2 adjustable shelves. All adjustable shelving shall be full width shelving and extend to the cabinet doors. Half width adjustable shelving is not considered acceptable. Cabinets shall have spring-loaded self-closing, Invisible mounted, European style hinges with 110-degree minimum opening. Pulls shall be as specified herein. Cabinets and countertops shall have a flame-spread rating that does not exceed 200 when tested in accordance with ASTM E 84 and ASTM E 162, Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source.

All cabinets and counter tops shall be designed and constructed in accordance with FED-STD 795 for handicapped accessibility.

1.6.34.1 Counter Tops and Backsplashes

Counter tops and backsplashes, shall be a minimum 3/4-inch solid surface material (Corian or approved equal). Minimum backsplash height is 4-inches. Backsplashes shall be provided at both back of counters and at

side of counters where abutting a wall. Solid surface counter tops and backsplashes shall be scribed to fit with joints glued and sealed. The substrate for countertops shall be as recommended by the manufacturer. Counter tops in break rooms shall accommodate stainless steel sinks with exposed lip mounting. Counter tops in toilet rooms shall be provided with integral solid surface sinks.

1.6.34.2 Window Sills

All exterior window sills shall be a 3/4-inch solid surface material. Window sill shall extend 1 1/2-inch beyond the wall finish surface. Sill design shall consist of a continuous top sill plate and two continuous recesses tiering back toward the wall. The recessed tiering trim shall match the solid surface window sill. Sill design shall match installed existing building #350 window sills. Note: the "as-built" drawings show only one continuous window sill plates projecting from the wall and not the two continuous recessed tiering.

1.6.34.3 Cabinet Specifications

Frame Members - Per AWI and a minimum 3/4-inch thick by 1-1/2-inch wide kiln-dried solid hardwood.

Base Cabinet Toe Space - 2-1/2-inches deep x 4-inches high with 3/4-inch hardwood.

Cabinet Bottoms, Backs Ends, & Tops - Cabinet ends shall be 5/8-inch medium density overlaid plywood with plastic laminate where exposed. Backs of wall cabinets shall be 1/4-inch plywood. Backs of base cabinets shall be 3/8-inch minimum plywood. Provide 3/8-inch thick plywood bottoms in cabinets. Brace bottoms with wood members glued in place.

Doors - Door design shall be flush 3/4-inch thick minimum faced and self-edged with plastic laminate.

Drawer Slides/Guides - Drawer slides/guides shall be slide guides with an automatic stop feature, 100-pound/pair load capacity, side and bottom mounting, white color epoxy-coated cold rolled steel. Lift-out disconnect "stay closed design". Top mounted center drawer guides will not be acceptable.

Drawers - Drawer face design shall be 3/4-inch thick minimum faced and self-edged with plastic laminate. Using dowel or French dovetail joints to fasten side to back and front. All joints glued. All drawers and pull out shelves shall be mounted with side and bottom mounted slides. Drawer sides shall be 1/2-inch minimum solid hardwood. Bottoms to be 1/2-inch minimum solid hardwood or plywood attached to the bottom of sides, fronts and backs using glue and mechanical fasteners.

All cabinets and work reception counters drawers and doors shall have pull handles.

Task lighting shall be provided under all reception desk counters and kitchenette counters.

Screws - Per AWI custom techniques.

Bumper Pads - Rubber.

Shelves - All shelves shall be fully adjustable, 3/4-inch minimum thick medium density custom grade particle board or custom grade plywood coated with 3-mil industrial paper with double smoothing melamine topcoat on both sides. Which shall be supported on steel support flush mounted angles with 1/4-inch diameter by 3/8-inch long dowel pins, adjustable at 1-1/4-inches on center. Shelf edges exposed to view shall be hardwood, rounded, filled, sanded, and finished.

Finishes - All built-in reception counters shall have a birch wood finish on all exterior exposed areas. This wood finish includes; trim, drawers, drawer edges, cabinet ends, etc. Staining and final finishing shall be in accordance with Section 1004 Interior Design requirements. All type writer, kitchen / kitchenette and copier/fax locations cabinets shall have a plastic laminate finish on all exposed areas. Laminate finish shall be in accordance with Section 1004 Interior Design requirements.

1.6.34.4 Cabinet Hardware Finishes

Door pulls and drawer handles shall be wire style high gloss black finish. Hinges shall match satin stainless steel, Type 630 finish.

1.6.35 Kitchenette Equipment

Kitchenettes shown on the drawings vary in size and configuration to fit within the available space. All of the kitchenettes shall have a similar design and features. However, one of the kitchenettes was restricted to an under counter refrigerator due to space limitations. An example of a standard kitchenette design is provided on the drawings.

The following kitchenette equipment shall be provided at each kitchenette. Kitchenettes include base cabinets and overhead cabinets for the entire length of the countertops. The following equipment is to be contractor furnished and installed:

a. Microwave: Describe: shall be a 1.5 cubic foot capacity, 100 watts, 1500 watts convention. Oven shall have both convention bake/broil functions and a combination bake/roast functions. Unit shall have a glass turntable for cooking and flush push button control pad with digital readout for operations control.

b. Refrigerator (free-standing unit): Shall be a minimum 20 cubic foot unit. Refrigerator shall have a freezer portion located on the top and not contain an ice maker. Refrigerator shall contain four adjustable shelves and a minimum of two door shelves.

c. Refrigerator (under counter unit): Shall be a minimum 4 cubic foot unit. Refrigerator shall have a full-width freezer compartment and not contain an ice maker. Refrigerator shall have a minimum of one adjustable shelf.

d. Disposal: Shall be a minimum 3/4 hp motor garbage disposal unit mounted under the sink.

e. Paper Towel Dispenser (PTD)shall be a semi or fully recessed mounted unit suppling rolled paper for hand drying. The cabinet shall have a key lock. Unit shall accept 8 or 9 inch wide rolls and approximately 800 feet long. Lever handle shall deliver approximately 4 to 5 inches in towel length.

f. Soap Dispenser (SD) shall be the liquid pump type with a minimum 34 fluid ounce capacity. Dispenser shall be mounted on the lavatory fixture. Dispenser refill shall be from the top of the unit.

1.6.36 Built-In Display Unit

A built-in display unit shall be provided at the main entrance located on the first floor lobby as indicated on the drawings. The unit shall be of the length and width as indicated on the drawings. The built-in unit design and constructed shall be in accordance with the requirements of the National Cabinet Association. The unit shall be a custom-built and finished as indicated on the drawings. A building map/signage shall be provided as indicated. Planter shall be sealed to prevent soil and water leakage.

1.6.37 Walk-Off Rubber Tile Flooring

Rectangular rubber surface laid floor mats shall be provided in all entry vestibules as shown on the drawings. Rubber tile flooring shall be centered in the vestibule width and shall start and stop at the door threshold and center-line of interior doors in the closed position. Floor tiles shall consist of heavy duty vinyl frame ribs with nylon carpet strips.

1.6.38 Woven Wire Mesh Storage Partitions (Option) and Fire Stair Balusters

a. Woven wire storage partitions (Option) and fire stair baluster partitions shall be provided at locations indicated on the drawings. The woven wire storage partitions shall extend from floor and be anchored to the existing ceiling structure. The existing metal ceiling deck is approximately 14 feet above the finished floor (deck height varies with the slope of the roof). Woven wire mesh storage partitions shall be the standard product of a manufacturer. Partitions shall be constructed of metal fabric attached to structural steel framing members. Fabric shall be woven wire metal of 1-1/2 inch, No. 8, diamond mesh clinched to framing. Storage partition framing members shall be channels 1-1/2 by 3/4 by 1/8 inch minimum size. Channel framing shall be mortised and tenoned at intersections. Steel supports, posts, and intermediate members shall be of the sizes and shapes indicated. Cast-iron floor shoes and caps shall have set screw adjustment. A maximum of an one-inch space opening shall be permitted between the partition and the floor and other support members to prevent thievery. Doors and wall panels shall be provided as indicated, complete with hardware and accessories including swivel hasp, door stop, guard plates, and fixed pin butts or fixed pin piano hinges. Lock hasp shall be minimum 12 gage formed metal for use with a padlock. Storage doors shall be provided with manufacturer's standard aluminum or stainless steel number plate, numbering each unit consecutively. Metal surfaces shall be a painted finished, color shall be as indicated in Section 01004 Interior Design Requirements. Except as otherwise specified, metal-framed partitions and mesh shall conform to the WWPA Woven Wire: Protection and Security manual.

b. Woven wire partitions shall be provided between fire stair balusters at locations indicated on the drawings. The woven wire mesh shall be the standard product of a manufacturer. Partitions shall be constructed of metal fabric attached to structural steel framing members. Fabric shall be woven wire metal of 1-1/2 inch, No. 8, diamond mesh clinched to framing. Partition framing members shall be channels 1-1/2 by 3/4 by 1/8 inch minimum size. Channel framing shall be mortised and tenoned at

intersections. Steel supports, posts, and intermediate members shall be of the sizes and shapes indicated. Metal surfaces shall be a painted finished, color shall be as indicated in Section 01004 Interior Design Requirements. Except as otherwise specified, metal-framed partitions and mesh shall conform to the WWPA Woven Wire: Protection and Security manual.

1.6.39 Motorized Projection Screen

Motorized projection screens shall be provided at the locations as indicated on the drawings. The motorized projection screen shall be an electric heavy duty fully automatic ceiling closure concealed and recessed within the finished ceiling system. The screen shall be controlled from a wall switched outlet located adjacent to the projection system wall junction box. The screen operation shall be quiet and when not in use it shall retract and be concealed behind an automatic closure panel, which is flush and finished to match the ceiling in color. The screen shall be seamless, white glass beaded type on a black fabric with a maximum 2-inch black border. In addition to the Motorized Projection Screen installation each conference room shall also be laid out and prepped for installation of a GFGI concealed recessed ceiling mounted projection system. The projection system prep shall include junction boxes and conduit runs for electrical, Audio Visual and LANS. The projector will be located so that it is centered on the screen and two thirds of the length of the room back away from the screen. Screen sizes shall be as indicated on the drawings.

1.6.40 Fixed Mounted Projector Holder

A fixed mounted projector holder for "low profile" ceiling installation shall be provided at locations where shown on the drawings. Bracket system shall place the top of the projector within 6 inches of the ceiling. Projector stand shall provide a minimum 25 pounds supporting capability. Support stand shall consist of black painted steel bracket capable of supporting and holding projectors from the top. Shelf type brackets are considered unacceptable. Bracket attachment shall have a ball joint with the capability to provide tilt angle adjustment. RGB, video and sync. factory installed cables shall be provided from the projector to the designated wall port location. Projector location shall be installed to accommodate each designated room configuration and in accordance with manufacturer's recommendations. Projector holders shall be installed at all rooms labeled; conference, class/conference, and conference room source selection. The Test Center room shall have two projector holders installed.

1.6.41 LCD Projectors

A LCD projector shall be furnished and installed by the Contractor at all Fixed Mounted Projector Holder locations. The projector shall be a Sony model VPL-X35 projector from GSA contract GS-35F-4259D (IT) price at $3427.00 each or Base approved equal projector. The projector shall have the minimum specifications:

Brightness: 2600 ANSI Lumens

Video Signals: NTSC, PAL, SECAM, NTSC4.43, PAL-M, PAL-N (automatically/manually selected); DTV:(480/60i, 575/50i, 480/60p, 540/60p, 575/50p, 720/60p, 720/50p, 1080/60i, 1080/50i)

Resolution: XGA (1024 x 768)

Screen coverage: 40"-300"

Keystone Correction: Digital keystone adjustment +/-20 degrees

Inputs: Component RGB (Shares mini D-Sub 15-pin) x 1, Composite Video (Single RCA) x 1, Screen Trigger (12V DC power outlet) x 1, RGBHV (BNC x 5) x 1, Computer, Analog RGB (Standard VGA, mini D-Sub 15-pin) x 2, Computer, Digital RGB (DVI (Digital Visual Interface) 29-pin) x 1, RS-232 (Serial) x 1, Computer Audio (Stereo mini jack) x 3

Outputs: Computer, Analog RGB (Standard VGA, mini D-Sub 15-pin) x 1, Computer Audio (Stereo mini jack) x 1

Speaker: 2 x 2 Watt Speakers

Remote Control: Sony Remote Commander

1.7 POSTAL UNITS

Postal units shall be aluminum mailboxes constructed of a minimum 20 gauge steel. A satin aluminum duranodic finish shall be throughout the postal units. Two separate postal units shall be provided in this facility. A postal unit shall be provided in Mail Room located in the MSG/CCB office. Another postal unit shall be provided in the LGC office at the mail location. Both postal units shall provide approximately 16-inch clearance depth within the postal boxes. The following is a description of each postal unit:

Mail Room- MSG/CCB:
This is a rear loading postal unit. The postal unit consist of two different box sizes. See drawings for overall configuration and box sizes. The smaller boxes shall have a customer key access. The large boxes shall have a customer combination lock access. Each mail box shall have a 5 pin cylinder cam with two keys. Mailboxes are designed to be mounted adjacent to each other and between stud framing partitions. Each mail box door size shall be approximately the size shown on the drawings. A total of 36 mail box units shall be provided. Each box shall have the capability to be identified with a minimum 5 letters and/or numbers. Mail is loaded from the rear.

Mail Area- LGC:
This is a front loading postal unit. The unit does not contain any door access. Mailbox unit shall be designed to be mount between stud framing partitions. Each mail box slot shall be approximately as shown on the drawings. A total of 24 mail box units shall be provided. Each box shall have the capability to be identified with a minimum 5 letters and/or numbers.

1.8 FUNDS STORAGE WINDOW (SVS/SVF) (CONTRACT OPTION ONLY)

A minimum 3/8-inch clear tempered glass transaction window component shall be provided at Funds Storage room located at SVS/SVF. Window unit shall be designed for an interior application where passive voice communication is required. A built-in passive speaker shall be provided in the center of the window. Window shall be a fixed type window. A stainless steel deal tray shall be provided at the base of a stainless steel frame. Overall window and tray unit shall be approximately 36 inches by 36 inches in size. Tray deal sill shall extend the full width of the window unit. See

glazing specifications for glass requirements.

1.9 VISUAL COMMUNICATION AIDS

Marker Boards- shall be a multi functional board capable to provide a writing surface and serve as a projection screen. Marker board writing surface shall be a medium gray color. Boards shall have a perimeter anodized aluminum trim and a continuous marker/pen holder tray along the bottom. See drawings for marker board locations and sizes. Marker boards shall be GBC- Education Products Division, (800) 710-7915, model "Superboard" type or approved equal. Sizes and location of marker boards are indicated on the drawings.

1.9.1 Bulletin Board

Bulletin boards shall be approximately four feet height by eight feet width. Board shall have an aluminum frame trim. Corkboard face shall be covered with a fabric covering. Sizes and location of marker boards are indicated on the drawings.

1.10 PUBLIC TELEPHONE

Telephone shall be a standard, stainless steel, satin finish surface mounted telephone with an under shelf for telephone book storage. Telephone unit shall be a flush panel phone appearance using conventional box-set phones. Telephone unit shall be installed in compliance with ADA requirements. Telephone unit shall be similar to Redyref Div-Dawnex Industries, Inc., (718) 784-3690, Model HS1331 or equal.

1.11 GUIDE SPECIFICATIONS

The following is a listing of the Architectural guide specifications that it is anticipated will be needed in the design and construction of this facility. As noted in paragraph 1.2.1, the provided guide specifications define the minimum requirements and level of quality for items of equipment, materials, installation, and testing that shall be provided for the facility. Where items of equipment, materials, installation, or testing requirements are not covered in the provided specifications; special sections or within each guide specification or new specifications sections shall be prepared to cover those subjects.

05500A MISCELLANEOUS METAL

06100A ROUGH CARPENTRY
06200A FINISH CARPENTRY
06650 SOLID POLYMER (SOLID SURFACING) FABRICATION

07220 ROOF AND DECK INSULATION
07410N METAL ROOF AND WALL PANELS
07413A METAL SIDING
07530A ELASTOMERIC ROOFING (EPDM)
07600 FLASHING AND SHEET METAL
07810 SPRAY-APPLIED FIREPROOFING
07840 FIRESTOPPING
07920 JOINT SEALING

08110 STEEL DOORS AND FRAMES
08210 WOOD DOORS
08520A ALUMINUM AND ENVIROMENTAL CONTROL ALUMINUM WINDOWS

08710 DOOR HARDWARE
08800 GLAZING
08900 GLAZED CURTAIN WALL

09100N METAL SUPPORT ASSEMBLIES
09250 GYPSUM WALLBOARD
09310 CERAMIC TILE, QUARRY TILE, AND PAVER TILE
09510 ACOUSTICAL CEILINGS
09650 RESILIENT FLOORING
09680 CARPET
09720 WALLCOVERINGS
09900 PAINTINGS AND COATINGS
09915 COLOR SCHEDULE

10100A VISUAL COMMUNICATIONS SPECIALTIES
10153 TOILET PARTITIONS
10260 WALL AND CORNER GUARDS
10430 EXTERIOR SIGNAGE
10440 INTERIOR SIGNAGE
10522 FIRE EXTINGUISHER CABINETS
10550 POSTAL SPECIALTIES
10615A DEMOUNTABLE PARTITIONS
10650A OPERABLE PARTITIONS
10800 TOILET ACCESSORIES

11035 BULLET-RESISTANT COMPONENTS

12320A CABINETS AND COUNTERTOPS
12490A WINDOW TREATMENT
12675 FLOOR MAT AND FRAME (See Section 05500A)

1.12 ROOM FINISH SCHEDULE

REMODELING EXISTING BUILDING TENANTS SPACES

General Scope of Work:

The existing MSS/DPF, MSG/CCB, Office #2040, and CPTS/FMQ spaces shall be remodeled to accommodate new space requirements. Architect/Engineer firms will be required to field verify existing spaces and make the necessary design/construction modification to execute the proposed requirements.

Existing tenant operation will need to be continuous during the entire construction period. Interruptions to the existing operations will be permitted for a maximum of 4 hour periods for every 3 working days. See contractor work scheduling requirements for additional information.

The following outlines the general scope of work requirements for each of the new and existing tenant organizations. Rooms are generally grouped in accordance with their organizational areas. This Room Finish Schedule outlines the general organizational and some individual room requirements, but may not list all of the individual rooms within the organizational areas. Individual rooms not specifically listed within the organizational areas shall comply with the general organization scheduled finish requirements:

EXISTING TENANT SPACES

1st Floor

MSS/DFF (Basic & Option)

Room #1001 Loan Closet

Floor:	Carpet- entire room (match existing).
Floor Base:	Resilient- entire room (match existing).
Walls:	Gypsum board partitions (paint to match existing) (paint entire room).
Ceiling:	Acoustical tile- match existing (replace damaged areas).
Acoustical Reqmt's:	No requirement.
Doors:	Relocate existing door, door frame and hardware. Fill existing door opening (match existing finishes).
Windows:	Remove existing exterior windows.
Notes:	Dashed lines indicate future storage racks will be provided and installed by the Government after completion of construction.
Demolition:	Remove existing walls/windows, floor base, and flooring as indicated.
Function:	Family support service storage room.

Room #1017 Classroom

Floor:	Carpet- entire room (match existing).
Floor Base:	Resilient- entire room (match existing).
Walls:	Gypsum board partitions (paint to match existing) (paint entire room), full height to structure.
Ceiling:	Acoustical tile- match existing (replace damaged areas and new ceiling area).
Acoustical Reqmt's:	No requirement.
Doors:	No requirement.
Windows:	No requirement.
Notes:	Existing corner space shall be incorporated into the classroom space.
Demolition:	Remove existing walls, floor carpet and base (entire room) as indicated.
Function:	Family support service storage room.

Room 1018 Waiting, Storage & Recpt.

Floor:	Carpet- entire room (match existing).
Floor Base:	Resilient- entire room (match existing).
Walls:	Gypsum board partitions (paint to match existing) (paint entire room).
Ceiling:	Acoustical tile- entire room (match existing type).
Acoustical Reqmt's:	No requirement.
Doors:	Power operated door per specifications. Existing door openings to be removed shall be filled with gypsum board partitions- match existing.
Windows:	Interior metal frame windows shall be as shown on drawings.
Notes:	Install 5 adjustable utility shelving, as shown. White birch counter shall have a raised customer service counter, handicap access space and working counter, customer side shall have a decorative raised white birch panels, drawers and other office storage areas shall be incorporated into the cabinet

design, solid polymer countertops.

Demolition: Remove existing walls, doors and frames, carpet flooring, resilient base, acoustical ceiling, and windows as indicated.

Function: Family support service waiting and office area.

Room 1024 Corridor

Floor: No requirement.
Floor Base: Resilient- East wall only (match existing).
Walls: Patch at door/frame relocation (paint to finish corridor 1025).
Ceiling: Remove ceiling for new ceiling- align with existing.
Acoustical Reqmt's: No requirement.
Doors: Remove existing door and in-fill with gypsum board partition (match existing).
Windows: No requirement.
Notes: None.
Demolition: See doors.
Function: Family support service corridor.

Room 1025 Corridor

Floor: Carpet- entire corridor to Corridor 1024 (match existing).
Floor Base: Resilient- entire corridor to Corridor 1024 (match existing).
Walls: Gypsum board partitions (paint to match existing) (paint entire corridor 1025 and remodeled alcove at corridor 1058)
Ceiling: No requirement in Corridor 1024. Install new acoustical ceiling in alcove at Corridor 1058
Acoustical Reqmt's: No requirement.
Doors: Remove existing door and in-fill with gypsum board partition (match existing).
Windows: No requirement.
Notes: None.
Demolition: See doors.
Function: Family support service corridor.

Room 1053 Communications

Floor: Concrete
Floor Base: None required.
Walls: Gypsum board partitions- extend to structure (paint entire room)
Ceiling: Exposed (paint).
Acoustical Reqmt's: No requirement (exposed ceiling).
Doors: Relocated existing door, frame and door hardware. partition (match existing).
Windows: No requirement.
Notes: None.
Demolition: Remove existing stairs and walls- see drawings.
Function: Building communications support service.

Room 1058 Corridor

Floor: No requirements.
Floor Base: In-fill areas effected by demolition (match existing).
Walls: In-fill gypsum board partition at areas effected by demolition (match existing, paint break-point to

break-point).
Ceiling: New ceiling shall align with existing (match existing).
Acoustical Reqmt's: None.
Doors: Remove existing doors. Install new doors where shown on drawings.
Windows: Remove existing windows and stair.
Notes: Existing room shall be expanded as shown.
Demolition: New corridor wall extension shall align with existing.
Function: Building service corridor.

MSG/CCB (Basic and Option)

Room 1055 Office, New Storage and Mail Room
Floor: Carpet entire Office and Storage rooms. Mail room

shall have floor tile to match Corridor tile.
Floor Base: Office and Storage rooms shall have resilient base. Mail room shall have tile base to match flooring
Walls: Gypsum board partitions (paint entire rooms). All gypsum board wall partitions around the Mail Room and Storage shall extend full height to structure.
Ceiling: Acoustical ceiling (entire rooms).
Acoustical Reqmt's: Acoustical ceiling (entire rooms).
Doors: Solid core wood doors, metal door frames and hardware.
Windows: Remove existing windows.
Notes: Rear loading postal mail boxes. Install recessed key storage box.
Demolition: Remove existing windows, door / frame, floor
finishes, acoustical ceiling, and walls as indicated on plans.
Function: Building manager and building mail service.

2nd Floor

CPTS/FMQ (Basic and Option)

Room 2006 Existing Open Office and New Office
Floor: Carpet in-fill at demolition area only (match existing).
Floor Base: In-fill areas effected by demolition (match existing).
Walls: Gypsum board partition as shown on drawings (match existing height and align with existing

partitions, paint break-point to break-point)
Ceiling: In-fill new ceiling. Ceiling shall align with existing (match existing).
Acoustical Reqmt's: None.
Doors: Solid core wood doors, metal door frames and hardware.
Windows: Remove existing windows.
Notes: None.
Demolition: Remove existing stairs, windows and other items necessary for new building requirements
Function: Building accounting office.

Room 2030 Communication
Floor: Concrete
Floor Base: None required.

Walls:	Gypsum board partitions (paint all surfaces)
Ceiling:	Exposed (paint).
Acoustical Reqmt's:	No requirement (exposed ceiling).
Doors:	Relocated existing door, frame and door hardware.
Windows:	No requirement.
Notes:	Expand existing Communications room.
Demolition:	Remove existing stairs and walls- see drawings. (provide new concrete floor to match existing).
Function:	Building communications support service.

Room 2040 Office

Floor:	Carpet entire office (match existing).
Floor Base:	Resilient base entire office (match existing).
Walls:	Gypsum board partition at areas as shown on drawings (match existing, paint entire office)
Ceiling:	Acoustical tile- entire office (match existing).
Acoustical Reqmt's:	None.
Doors:	No requirement.
Windows:	Remove existing windows.
Notes:	None.
Demolition:	See drawings for new building requirements.
Function:	Attorney's office.

NEW TENANT SPACES

1st Floor

Service Spaces (Basic and Option)

Toilets (both floors)

Floor:	Porcelain tile.
Floor Base:	Porcelain tile.
Walls:	6 inch stud framing partitions, ceramic tile wainscot- see plans for locations. Wall framing and gypsum board shall extend to the structure.
Ceiling:	Gypsum board- smooth finish. (height 8'-6" min.)
Doors:	Solid core wood doors, metal door frames and hardware.
Windows:	No requirements.
Notes:	See drawings for additional information. Provide two wall mounted water coolers (1 handicap, 1 standard)
Function:	Public toilets.

Mechanical, Electrical, Communication Rooms and Janitor Closets (both floors)

Floor:	Concrete.
Floor Base:	Resilient.
Walls:	Gypsum board- extend to structure- paint exposed.
Ceiling:	Exposed (paint all surfaces).
Doors:	Interior- solid core wood doors, metal door frames and hardware. Exterior- flush metal and metal frame
Windows:	No requirements.
Notes:	See drawings for additional information.
Function:	Building utility services.

Fire Stairs (both floors)

Floor:	Rubber stair treads

Floor Base: Resilient.
Walls: Gypsum board- extend to structure (paint).
Ceiling: Acoustical.
Doors: Interior- solid core wood doors, metal door frames and hardware.
Exterior- insulated metal door and frame.
Windows: No requirements.
Notes: See drawings for additional information.
Function: Building pedestrian circulation.

Lobby & Stairs (both floors)
Floor: Porcelain tile- see plans for locations.
Vestibule- rubber flooring.
Stairs- porcelain tile.
Floor Base: Porcelain tile.
Walls: Gypsum board- extend to structure (paint).
Ceiling: Acoustical.
Doors: Aluminum full height glass entrance doors, metal door frames and hardware. See doors for additional information.
Windows: Full height- where shown.
Notes: See drawings for additional information.
Entrance vestibule ceiling/deck shall be linoleum
Function: Building pedestrian circulation.

Public Corridors (both floors)
Floor: Porcelain tile- except where identified on plans as carpet.
Floor Base: Porcelain tile- except where identified on plans with carpet shall be resilient base.
Walls: Gypsum board- extend to structure (paint- Multi-Speckled paint, match existing).
Ceiling: Acoustical.
Doors: See plans and specifications

Windows: Exterior windows- see drawings and specifications.
Notes: Public telephone on first floor. Also, a display/bench unit on the first floor. See drawings for additional information.
Function: Pedestrian circulation.

Testing Center & Adjacent Storage Room (Basic and Option)
Floor: Carpet.
Floor Base: Resilient.
Walls: Gypsum board- extend to structure and seal (paint).
Ceiling: Acoustical.
Doors: Minimum STC 48 wood finished entrance doors, metal frames and hardware.
Operable partition door.
Windows: No requirements.
Notes: See drawings for additional information.
Function: Personnel testing room.
Special Finishes: Birch wood chair rail throughout the room.

MXG/CC (Basic and Option)
Floor: Carpet. Note carpet color change in Wait area.
Also, rubber flooring at Kitchenette area.

Floor Base: Resilient.
Walls: Gypsum board- all perimeter walls, conference, and CC walls shall extend to the structure (paint).
Ceiling: Acoustical.
Doors: Solid core wood finished doors, metal frames and hardware.
7 ft. 2 inch height metal framed glazing at main entrance, trim frame- see drawings.
Solid core wood door with full height glazing at both entrances.
Windows: Exterior windows- see drawings and specifications.
Notes: See drawings for additional information.
Function: Command section.
Special Finishes: Rooms: CC and Conference room shall have birch wood chair rails, vinyl wall covering below the chair rail.
CD room shall have an accent painted wall.

Library (Basic and Option)
Floor: Carpet.
Floor Base: Resilient.
Walls: Gypsum board- extended to the structure (paint).
Ceiling: Acoustical.
Doors: Solid core wood finished doors, metal frames and hardware.
7 ft. 2 inch height metal framed glazing at main entrance, trim frame- see drawings.
Solid core wood door with full height glazing at entrance.
Notes: See drawings for additional information.
Function: Contractor's reference library.

Conference Rooms- adjacent to MXG/CC Conference & MSS/DFF (Basic and Option)
Floor: Carpet.
Floor Base: Resilient.
Walls: Gypsum board- extended to the structure (paint).
Ceiling: Acoustical.
Doors: Solid core wood finished doors, metal frames and hardware.
Windows: None.
Notes: See drawings for additional information.
Function: General meeting room.
Special Finishes: Birch wood chair rails, vinyl wall covering below the chair rail.

SW/MO (Basic and Option)
Floor: Carpet. Rubber tile at Kitchenette.
Floor Base: Resilient.
Walls: Gypsum board. All of the SW/MO perimeter walls, Conference, Wartime and Classroom walls shall extend to the structure and sealed (paint).
Ceiling: Acoustical.
Doors: Solid core wood finished doors, metal frames and hardware.
Solid core wood door with full height glazing at all

three entrances.

Windows: Exterior windows- see drawings and specifications.

Notes: See drawings for additional information.

Function: Manpower management for military operations.

Special Finishes: Rooms: CC and Conference shall have birch wood chair rails, vinyl wall covering below chair rail
4 adjustable utility shelving in storage rooms- lengths as shown on plans.
Each Deputy Chief's offices shall have an accent painted wall.

SFS/SFA (Basic and Option)

Floor: Carpet. Rubber tile at Kitchenette.

Floor Base: Resilient.

Walls: Gypsum board. All of the SFS/SFA perimeter walls, and Conference room walls shall extend to the structure (paint).

Ceiling: Acoustical.

Doors: Solid core wood finished doors, metal frames and hardware.
Solid core wood door with full height glazing at both entrances.

Windows: Exterior windows- see drawings and specifications.

Notes: Solid surface countertop at Finger location. White birch wood cabinet at finger counter shall have 3 drawers and 3 cabinet doors. See drawings for additional information.
4 adjustable utility shelves in storage rooms.
Provide wall cabinets over Copier/Fax location. See drawings for cabinet lengths.

Function: Security training, information storage and administration.

Special Finishes: Rooms: The Chief's office and and Conference room shall have birch wood chair rail with vinyl wall covering below the chair rail.
The CSM office shall have an accent painted wall.

SVS/SVF (Contract Option Only)

Floor: Carpet. Rubber tile at Kitchenette.

Floor Base: Resilient.

Walls: Gypsum board. All of the SFS/SFA perimeter walls, Funds Storage, and Conference rooms shall extend to the structure (paint).

Ceiling: Acoustical.

Doors: Solid core wood finished doors, metal frames and hardware.
Solid core wood door with full height glazing at both entrances.

Windows: Exterior windows- see drawings and specifications.
Funds Storage room transaction window shall be tempered glass- see specs.

Notes: See drawings for additional information.
Government furnished Card Index machine shall be relocated and installed by Contractor where shown on the drawings.
Provide wall cabinets over Copier/Fax location. See drawings for cabinet lengths.

	4 adjustable utility shelves in the storage rooms.
Function:	Quality of life support services.
Special Finishes:	Rooms: Chief and Conference shall have birch wood chair rails, vinyl wall covering below the chair rail

SVS/SVF- IT (Contract Option Only)

Floor:	Carpet.
Floor Base:	Resilient.
Walls:	Gypsum board. All of the SFS/SVF- IT perimeter walls and Server Room walls shall extend to the structure (paint).
Ceiling:	Acoustical.
Doors:	Solid core wood finished doors, metal frames and hardware. Main room door entrances shall be controlled with cipher locks.
Windows:	No requirements.
Notes:	See drawings for additional information.
Function:	Quality of life support services- computer servicing.

SVS/CC (Contract Option Only)

Floor:	Carpet. Rubber tile at Kitchenette.
Floor Base:	Resilient.
Walls:	Gypsum board- full wall height (paint).
Ceiling:	Acoustical.
Doors:	Solid core wood finished doors, metal frames and hardware. Solid core wood door with full height glazing at all three entrances.
Windows:	Exterior windows- see drawings and specifications.
Notes:	See drawings for additional information. A custom built customer counter shall have a raised customer service counter, handicap access space counter and working counter, customer side shall have a decorative raised birch wood panels, drawers, and other office storage areas shall be incorporated into the birch wood cabinet design with solid polymer countertops. Provide wall cabinets over Copier/Fax
Function:	Quality of life support services- command section.
Special Finishes:	Rooms: Chief and CD shall have birch wood chair rails, vinyl wall covering below the chair rails.

<u>Conference Rooms- Room adjacent to Lobby & Test Center (Basic and Option)</u>

Floor:	Carpet.
Floor Base:	Resilient.
Walls:	Gypsum board. Extend to the structure (paint).
Ceiling:	Acoustical.
Doors:	Solid core wood finished doors, metal frames and hardware.
Windows:	Exterior windows- see drawings and specifications. 7 ft. 2 inches height clear glazing at main entrance to Lobby conference room, metal trim frame- see drawings for location.
Notes:	See drawings for additional information.
Function:	Facility shared conference room.
Special Finishes:	Shall have birch wood chair rails, vinyl wall

covering below the chair rail.

2nd Floor

SMF (Basic- located on 1st Floor, Option- located on 2nd floor)

Floor:	Carpet. Rubber tile at Kitchenette.
Floor Base:	Resilient.
Walls:	Gypsum board. Extend walls to the structure at the main door entrance (paint).
Ceiling:	Acoustical.
Doors:	Solid core wood finished doors, metal frames and hardware.
Windows:	Exterior windows- see drawings and specifications.
Notes:	All Areas- provide wall cabinets over Copier/Fax SMF- 4 adjustable utility shelves in the storage room. Birch wood counter shall have a raised customer service counter, handicap access space and working counter, customer side shall have a decorative raised birch wood panels, drawers and other desk storage areas shall be incorporated into the cabinet design, solid polymer countertops. 7 feet 2 inch height clear glazing at main entrance and corridor wall, metal frame- see drawings. Solid core wood door with full height glazing at all entrances.
Function:	Contracting.
Special Finishes:	Rooms: All chief offices and conference rooms shall have birch wood chair rails, vinyl wall covering below the chair rail.

LGCC, LGCP, LGCZ & LGCB (Basic and Option)

Floor:	Carpet. Rubber tile at Kitchenette.
Floor Base:	Resilient.
Walls:	Gypsum board. Extend walls to the structure at the main door entrance and glass curtain divider wall between SMF (paint).
Ceiling:	Acoustical.
Doors:	Solid core wood finished doors, metal frames and hardware. Solid core wood door with full height glazing at all entrances.
Windows:	Exterior windows- see drawings and specifications.
Notes:	All Areas- provide wall cabinets over Copier/Fax 4 adjustable utility shelves in the storage rooms. Birch wood counter shall have a raised customer service counter, handicap access space and working counter, customer side shall have a decorative raised birch wood panels, drawers and other office storage areas shall be incorporated into the cabinet design, solid polymer countertops. A 7 ft. 2-inch feet height clear glazing wall at main entrance and divider wall between SMF, metal frame- see drawings. See drawings for additional information.

Function: Contracting.
Special Finishes: Rooms: All chief offices and conference rooms shall have birch wood chair rails, vinyl wall covering below the chair rail.

ME/EEO (Basic and Option)

Floor: Carpet. Rubber tile at Kitchenette.
Floor Base: Resilient.
Walls: Gypsum board. Extend all perimeter walls to the structure (paint).
Ceiling: Acoustical.
Doors: Solid core wood finished doors, metal frames and hardware.
Solid core wood door with full height glazing at all entrances.
Windows: Exterior windows- see drawings and specifications.
Notes: Provide wall cabinets over Copier/Fax
7 feet 2-inch height clear glazing at main entrance, metal frame- see drawings.
See drawings for additional information.
Function: Contracting.

ME / EE0 Classroom (Basic and Option)

Floor: Carpet.
Floor Base: Resilient.
Walls: Gypsum board. Extend all perimeter room walls to the structure (paint).
Ceiling: Acoustical.
Doors: Solid core wood finished doors, metal frames and hardware.
Windows: None.
Notes: None.
Function: class room.
Special Finishes: None.

LGC, BZ, and Conference Rooms (Basic and Option)

Floor: Carpet. Rubber tile at Kitchenette.
Floor Base: Resilient.
Walls: Gypsum board. Extend all perimeter and Conference room walls to the structure (paint).
Ceiling: Acoustical.
Doors: Solid core wood finished doors, metal frames and hardware.
Windows: Exterior windows- see drawings and specifications.
Notes: LGC- postal box shall be front loading,
LGC- provide wall cabinets over Copier/Fax
LGC & BZ- 4 adjustable utility shelves in the storage rooms.
LGC & BZ- Birch wood counter shall have a raised customer service counter, handicap access space and working counter, customer side shall have a decorative raised birch wood panels, drawers and other office storage areas shall be incorporated into the cabinet design, solid polymer countertops.
LGC & BZ- 7 feet 2-inch height clear glazing at main entrance, metal frame- see drawings.

	See drawings for additional information.
Function:	Contracting.
Special Finishes:	Rooms: Chief, BZ, and Conference shall have birch wood chair rails, vinyl wall covering below the chair rail. LGCD office shall have an accent wall painted.

Conference Rm. Source Selection and Classroom/Conference Rooms (Basic and Option)

Floor:	Carpet. Rubber tile at Kitchenette.
Floor Base:	Resilient.
Walls:	Gypsum board. Extend all perimeter room walls to the structure (paint).
Ceiling:	Acoustical.
Doors:	Solid core wood finished doors, metal frames and hardware. Operable and accordion doors at locations shown on the drawings.
Windows:	None.
Notes:	None.
Function:	Meeting rooms.
Special Finishes:	None.

Second Floor Storage Room Adjacent to BZ (Basic and Option)

Floor:	Concrete.
Floor Base:	Resilient.
Walls:	Gypsum board. Extend to the structure (paint).
Ceiling:	Exposed- paint all surfaces.
Doors:	Solid core wood finished doors, metal frames and hardware.
Windows:	No requirement.
Notes:	Provide 4 adjustable utility shelving. See drawings for additional information.
Function:	Miscellaneous office supplies storage.
Special Finishes:	No requirements.

Existing Building #350- 3rd Floor Storage Room (Option)

Floor:	No requirement.
Floor Base:	No requirement.
Walls:	Existing gypsum board- full wall height (paint).
Ceiling:	Existing exposed- paint all surfaces.
Doors:	No requirement.
Windows:	No requirement.
Notes:	Provide woven wire mesh cages and partitions. See drawings for additional information.
Function:	Secure storage.
Special Finishes:	No requirements.

PART 2 NOT USED

PART 3 NOT USED

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01004

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SECTION 01004

INTERIOR DESIGN REQUIREMENTS

PART 1 INTERIOR DESIGN REQUIREMENTS

1.1 REFERENCES

The publications listed below shall be utilized for design of this facility to the extent referenced. The publications shall comply with the latest edition of the UFGS guide specification (Copy included on CD-ROM).

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)

AATCC 134	(2001) Test Method: Electrostatic Propensity of Carpets

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

36 CFR 1191	Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities
16 CFR 1630	Standard for the Surface Flammability of Carpets and Rugs (FF 1-70)

ASTM INTERNATIONAL (ASTM)

ASTM E 84	(2003) Surface Burning Characteristics of Building Materials
ASTM E 648	(2003) Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
ASTM F 1861	(2002) Resilient Wall Base
ASTM F 2034	(2003) Sheet Linoleum Floor Covering
ASTM F 793	(1993; R 1998) Wallcovering by Durability Characteristics
ASTM F 1066	(1999) Vinyl Composition Floor Tile
ASTM D 1335	(2003) Standard Test Method for Tuft Bind of Pile Yarn
ASTM F 1344	(2003a) Rubber Floor Tile

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A137.1	(1988) Ceramic Tile

DEPARTMENT OF AIR FORCE (AF)

ETL 03-3	Air Force Carpet Standard

FEP	Peterson Facilities Excellence Plan

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 3-120-01	(Feb 2003) Air Foce Sign Standard

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

FS AA-V-00200	(Rev B) Venetian Blinds

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

FED-STD 795	(Basic; Am 1) Uniform Federal Accessibility Standards

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 101	(2003) Life Safety Code
NFPA 265	(2002) Fire Tests for Evaluating Room Fire Growth Contribution of Textile Coverings on Full Height Panels and Walls

INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS (ICBO)

UBC 8-2	(1994) Uniform Building Code Standard No. 8-2, Standard Test Method for Evaluating Room Fire Growth Contribution of Textile Wall Coverings
UBC 42-2	(1991) Uniform Building Code Standard No. 42-2, Standard Test Method for Evaluating Room Fire Growth Contribution of Textile Wall Coverings

1.2 DESIGN CRITERIA

The design of this building shall be in accordance with this document and the Interior Design Requirements in the Peterson Base Facilities Excellence Plan FEP. As a general rule, new finishes shall match the finishes in the existing Mission Support Facility when they meet together in open areas.

1.3 INTERIOR FINISHES

1.3.1 Carpet

Carpet design can include the use of one basic pattern, two bold patterns and three solid carpets, depending on the intended design. Solid colored carpets can be used as a border around a room or as an inset within a room. Coordinated patterned carpets can be used together to create designs without the use of solid colored carpets. Creative design solutions such as these are required on this project. Refer to Attachment 2 Base Facilities Excellence Plan for carpet criteria and requirements. Carpet tile with backing containing recovered carpet which is also 100% recyclable such as that offered by Shaw is preferred. Carpet shall be 100% continuous filament, solution dyed and/or yarn dyed, branded nylon with loop construction (excluding the solid carpet which shall be cut pile). Carpet shall meet the Air Force Carpet Standard ETL 03-3 and the following

minimum requirements:

1.3.1.1 Minimum Pile Characteristics

Basic Pattern: Pattern Level Loop; 1/10 Gauge; 26 ounces per square yard; Pile Density 8667
Bold Patterns: Multi-Level Pattern Loop; 1/12 Gauge; 26 ounces per square yard; Pile Density 6882
Solid Colored Carpets: Cut Pile; 1/10 Gauge; 30 ounces per square yard; Pile Density 8120

1.3.1.2 Static Control

Static electricity build-up of the carpet shall be permanently less than 3.5 kilovolts at 70 degrees F and 20 percent relative humidity as determined by the American Association of Textile Chemists and Colorists (AATCC 134 Test Method), Electrostatic Propensity of Carpets.

1.3.1.3 Flammability and Critical Radiant Flux Requirements

Carpet shall comply with 16 CFR 1630 and have a minimum average critical radiant flux of .45 watts per square centimeter when tested in accordance with ASTM E 648.

1.3.1.4 Tuft Bind

Tuft bind force required to pull a tuft or loop free from carpet backing shall be a minimum 10 pound average force for loop pile and 3 pound for cut pile when tested in accordance with ASTM D 1335. A ten year warranty from the carpet Manufacturer against edge ravel, delamination and tuft bind is required.

1.3.1.5 Installation

Carpet shall be installed by contractors/installers who are CFI Certified Floorcovering Installers or manufacuter's approved installers For warranties to be valid install all carpet in accordance with the installers guidelines. Adhesives and concrete primers shall be waterproof, nonflammable, meet local air-quality standards, and be as recommended by the carpet manufacturer.

1.3.1.6 Recycling of Existing Carpet

Existing carpet to be removed shall be recycled and shall not go to a landfill. The specifications shall include requirements for the carpet to be removed with delivery to a manufacturer accepting recycled carpet. Removal and handling of existing carpet shall be per the manufacturer's recommendations. The specifications shall include a submittal requirement (SD-07 Certificate) for recycled carpet that shows compliance with these requirements. It is recommended that this requirement be included in UFGS Section 02220 DEMOLITION.

1.3.2 Walk-off Rubber Tiles

Product shall be homogeneously constructed of select reclaimed commercial tire components, vulcanized rubber backing and nylon scrim reinforcement. Tiles shall be 12" x 12", 3/8" nominal thickness, shall conform to industry standards and shall contain no asbestos fiber.

1.3.3 Linoleum

Flooring is a homogeneous sheet good made of natural material consisting of linseed oil, wood flour, rosin binders, dry pigments, mixed and calendered onto a natural jute backing. Product shall meet ASTM F 2034. Static load shall be 450 pounds per inch, and product shall not crack or break when bent around a 1.4" diameter cylinder.

1.3.4 Rubber Flooring and Stair Treads

Rubber Flooring and Stair Treads shall conform to ASTM F 1344 Class 1 homogeneous construction, Type A. Surface shall have an overall thickness .125" minumum and have a hammered finish. Stair tread, risers and stringers shall conform to composition rubber compound from a mixture of synthetic and reclaimed rubber. Overall thickness at treads shall not be less than 1/8 inch (3mm). Design shall be one nosing/tread/riser or a two piece nosing/tread with a matching coved riser. Installation shall include stringer angles on both the wall and banister sides and landing trim.

1.3.5 Porcelain/Ceramic Tile

Porcelain and ceramic tile shall conform to ANSI A137.1, moderate to heavy grade only. Porcelain tile and trim shall be 5/16" thick and unglazed with the color extending uniformly through the body of the tile. Tile shall be slate-like, with a slightly sculpted cushion edge and texture/color varying from tile to tile.

Provide wall and floor tile patterns to match American Olean standard patterns as directed in Attachment 6 Interior Finish List.

1.3.6 Interior Signage

Interior signage shall be included and must be coordinated with the user. Signage must conform to 36 CFR 1191 Americans with Disabilities Act (ADA) and FED-STD 795 Uniform Federal Accessibility Standards (UFAS), whichever is most stringent, and UFC 3-120-01. New signage shall match existing signage which was provided by Ten Signage Corp., 2600 So. Parker Road, Bldg 5, Suite 359, Aurora, CO 80914, phone 303/750-4109, fax 303/750-4578.

Existing enunciator panel, directory and information bands shall be updated or replaced with new as necessary.

All Conference/Testing/Classrooms shall contain additional insert lines and/or componentry for text and messages. New signage shall provide flexibility for changing out text. Provide signage for all rooms unless otherwise directed by Contracting Officer. Include a directory in the lobby to meet project and user requirements. Coordinate signage requirements and placement with user and Contracting Officer.

1.3.7 Horizontal Blinds

Horizontal blinds shall be provided on interior windows unless otherwise noted. Blinds shall be in accordance with FS AA-V-00200, Rev. B., Type II. Slats shall be aluminum and not less than .0085 thick. Refer to Attachment 2 Base Facilities Excellence Plan FEP for additional requirements.

1.3.8 Vinyl Wallcovering

Vinyl wallcovering shall be Type II, and have a class A flame spread rating of 0-25 and smoke development rating of 0-50 when tested in accordance with ASTM E 84. Provide wallcovering that is aesthetically pleasing and has enough visual texture for ease of maintenance. Clear corner guards shall be provided for all exposed corners.

1.3.9 Resilient Base

Resilient base shall conform to ASTM F 1861 Type I Rubber Base shall be coved, 4 inches high and a minimum 1/8 thick. Job formed corners shall be furnished.

1.3.10 Corner Guards

Corner guards shall be clear plastic with 2-inch returns, and extend from the top of the cove base to top door opening. They shall be firmly affixed; glue or tape installation is not acceptable.

1.3.11 Installation of Finishes

All finishes shall be installed as per manufacturer's recommendations.

1.4 COLOR, TEXTURE, AND PATTERN

The color, texture, and pattern selections for the finishes of the buildings shall provide an aesthetically pleasing, comfortable, easily maintainable and functional environment for the occupants. Coordination of building colors and finishes is necessary for a cohesive design. Color of ceramic and porcelain tile grout shall be a medium range color to help hide soiling. Plastic laminate and solid surfacing material shall have patterns that are mottled, flecked or speckled unless directed otherwise in Attachment 5 Interior Finish List.

1.4.1 Interior Finishes

Interior finishes shall be as directed in Attachment 5 Interior Finish List provided by Peterson Interior Designer Kolleen Kostboth.
Additional requirements include:
* Light Switch and Outlet Cover Plates shall be ivory.
* Fire Extinguisher Cabinets shall match those in existing part of building.
* Fire Strobe Alarm Boxes shall be white.
* Reference Attachment 2 Base Facilities Excellence Plan (Fire Protection Equipment) for additional requirements.

1.4.2 Exterior Finishes

Shall match the existing Mission Operations Facility.

1.5 FURNITURE

1.5.1 Furniture Layout

Furniture layout will be functional and coordinate with the building design to assure that locations of electrical and communication outlets, and lighting within the building are appropriate. The layout will also be coordinated with other building features such as architectural elements, thermostats, lighting, location of TVs, etc. Furniture shall be located in

front of windows only if the top of the item falls below the window. The furniture layout shall conform to requirements specified in 36 CFR 1191, FED-STD 795, and NFPA 101.

1.5.2 Furniture Design (CID)

A Comprehensive Interior Design (CID) package shall be provided and conform to the requirements of the AFCEE Design Guidance (Air Force Center of Environmental Excellence) Interior Design Presentation Format. Reference Sections 01336 and 01338 for additional information.

The furniture design for this project will include re-use and re-configuration of designated existing workstations and the design of new workstations. It is desired to maximize the re-use of furniture with the understanding to maintain consistency within work groups or enclosed areas. The furniture design will include an evaluation of the existing furniture to be re-used and subsequent recommendations on design solutions re-using existing furniture and providing new furniture in appropriate areas. This design shall be coordinated with and meet acceptance with the user and Peterson Interior Designer.

The purchase and installation of furniture will be performed by Peterson AFB under separate contract from the construction contract. This contract will include requirements for repair of damage incurred during furniture installation, and the final hook-up of electrical and comunications.

1.5.3 Furniture Specifications

Materials shall be fire retardant to the maximum extent possible, and U.L. listings shall be met where applicable. User friendly features shall be specified such as radius. Sharp edges and exposed connections are not acceptable. Clips, screws, and other constuction elements shall be concealed wherer possible. Considerations shall be made to specify furniture with features that prevent damage from vacuum cleaners and maintenance products. A topical or inherent soil retardant treatment is required. Fabric upholstery shall be patterned to help hide soiling. Vinyl, Crypton or hard surface material shall be used in heavy use areas as coordinated with the Base Interior Designer. Textiles shall meet requirements in Attachment 2 Base Facilities Excellence Plan (Textiles). Specific furniture features and requirements shall be coordinated with the user and the Peterson Interior Designer. Refer to Attachment 5 Systems Furniture for specific systems furniture specifications. Refer to Attachment 2 Base Facilities Excellence Plan (Furniture) for general furniture information.

1.5.4 Furniture Requirements

Interviews with the customer will be required to obtain room-by-room furniture needs and requirements. Project requirements will also be coordinated with Peterson Interior Designer Kolleen Kostboth.

Refer to drawings for the quantity and general location of workstations. Refer to Attachement 5 Systems Furniture (Pre-Evalution of Systems Furniture) for existing workstations to be reused.

Non-systems furniture indicated on the floor plans is for information only and is not intended to limit the designer in terms of quantity or locations.

The following Conference/Classrooms shall have seating provided in

accordance with the AFH 32-1084 (Chapter 6):

BASIC
FIRST FLOOR:
Test Center
Conf. Rm. adjacent to Lobby & Test Center
Conf. Rm. adjacent to MSS/DFF
Conf. Rm. adjacent to MXG/CC
SMF Conf. Rm.
MO Conf. Rm.
MO Class Rm.
SFS/SFA Conf. Rm.
SECOND FLOOR:
SOLE SOURCE Lg.
SOLE SOURCE Sm.
Conf./Classroom adjacent to CPTS/FMQ
LGCB Conf. Rm.
LGCZ Conf. Rm.

OPTION
FIRST FLOOR:
Test Center
Conf. Rm. adjacent to Lobby & Test Center
Conf. Rm. adjacent to MSS/DFF
Conf. Rm. adjacent to MXG/CC
MO Conf. Rm.
MO Class Rm.
SFS/SFA Conf. Rm.
SVS/SVF Conf. Rm.
SECOND FLOOR:
SOLE SOURCE Lg.
SOLE SOURCE Sm.
Conf./Classroom adjacent to CPTS/FMQ
SMF Conf. Rm.
LFCP Conf. Rm.

Refer to AFH 32-1084, Table 6.1, for space requirements regarding classrooms. Refer to Table 6.4 (The number of people = Area (sq. ft.) /25 sq. ft. per person + 15% for visitors) regarding conference rooms.
The Test Center shall accomodate 80 seats as indicated on the drawings.

Other requirements to be included in the furniture package are:
* Marker Boards in the following locations: BASIC - LGC Chief, BZ, MXG/CC and MXG/CD OPTION - LGC Chief, BZ, MXG/CC, MXG/CD and SVS/CC/Chief.
General size shall be 4' x 6' unless noted otherwise by the user.
Marker boards shall be enclosed in wood cabinets with finish to match other exposed wood.
* Live plants in the lobby mezzanine are to match plants in the existing building.
*Artificial plants in common areas such as waiting and lobby as per the requirements in Attachment 2 Base Facilities Excellence Plan (Plants).
* Clocks provided throughout.
* Lamps in waiting areas as appropriate.
* Waiting seating where shown on floor plan and in other areas as appropriate.
* Tables and chairs in break rooms.

PART 2 NOT USED

PART 3 NOT USED

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SECTION 01005

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SECTION 01005

STRUCTURAL REQUIREMENTS

PART 1 STRUCTURAL

1.1 PROJECT DESCRIPTION AND REQUIREMENTS

The ADAL Mission Support Facility is a two-story addition to an existing building. The addition consists primarily of office, conference and training areas.

The building shall be structurally designed and configured by the Design/Build Contractor in accordance with the criteria and other requirements stated herein. Antiterrorism/Force Protection Design is required in accordance with DoD Minimum Antiterrorism Standards for Buildings.

1.2 DESIGN CRITERIA

The design publications listed below shall be used as sources of criteria for structural design. The criteria from these sources may be supplemented, but not supplanted, by applicable criteria contained in nationally recognized codes, standards, and specifications. (In all cases, later editions to the below listed documents may be used.)

1.2.1 Department of the Air Force Technical Manuals (AFM)

(These manuals are available from the National Institute of Building Sciences Construction Criteria Base (CCB) (See Section 01332, DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES for availability). Some of these manuals may be available to download in Acrobat .pdf file format at the following internet address: (http://www.hnd.usace.army.mil/techinfo.)

AFM 88-3 Chap. 15 (TM 5-809-12) Concrete Floor Slabs on Grade Subjected to Heavy Loads (Aug 87)

1.2.2 US Army Corps of Engineers Technical Instructions (TI)

(Available at http://www.hnd.usace.army.mil/techinfo and is listed under "Engineer Instructions".)

TI 809-07 Design of Cold-Formed Load Bearing Steel Systems and Masonry Veneer/Steel Stud Walls (Nov 98)

TI 809-29 Structural Considerations for Metal Roofs (Aug 98)

TI 809-52 Commentary on Snow Loads (Aug 98)

1.2.3 Unified Facilities Criteria (UFC)

UFC 1-200-01 Design: General Building Requirements (Jul 02)

UFC 4-010-01 DOD Minimum Antiterrorism Standards For Buildings (Oct 03)

1.2.4 International Code Council Publications (ICC)

International Building Code (IBC) 2000

1.2.5 American Society of Civil Engineers (ASCE) Publication

ASCE 7-02 Minimum Design Loads for Buildings and Other Structures

1.2.6 American Concrete Institute Publications

ACI 117/117R-90 Standard Specification for Tolerances for Concrete Construction and Materials and Commentary

ACI 318M-02 Building Code Requirements for Structural Concrete and Commentary

1.2.7 American Institute of Steel Construction Publication

Specification for Structural Steel Buildings - Allowable Stress Design, Plastic Design (ASD) (June 1, 1989)

Load and Resistance Factor Design Specification for Structural Steel Buildings (LRFD) (December 1, 1993)

1.2.8 American Welding Society

Structural Welding Code - Steel, D1.1/D1.1M (2002 Edition)

1.2.9 Steel Deck Institute (SDI) Publications

Diaphragm Design Manual (1991 Edition)

Design Manual for Composite Decks, Form Decks and Roof Decks (Pub No. 30, April 2001)

1.2.10 Steel Joist Institute (SJI) Publications

Standard Specifications, Load Tables and Weight Tables for Steel Joists & Joist Girders (1994)

1.3 STRUCTURAL LOADING CRITERIA

Structural loading criteria shall be developed using the criteria sources and following the procedures indicated below. The ADAL Mission Support Facility shall be classified as an Occupancy Category I facility, per IBC 2000(Category II, per ASCE-7) for the purpose of calculating design loads.

1.3.1 Roof Live Loads

1.3.1.1 Snow Load

Roof snow load shall be calculated and applied in accordance with ASCE 7 (Per IBC 2000) and Army Corps of Engineers TI 809-52, using a ground snow load of 30 psf. Additional loading associated with snow drifting and unbalanced snow conditions shall be considered and applied in accordance with ASCE 7.

1.3.1.2 Rain Loads

Rain loads shall be considered in accordance with ASCE 7.

1.3.1.3 Minimum Roof Live Load

Minimum design roof live load shall be determined in accordance with IBC 2000, and shall be applied as a loading condition for the roof independent and non-concurrent with the calculated snow load.

1.3.2 Floor Live Loads

Minimum uniformly distributed floor live loads shall be as listed below:

AREA	LIVE LOAD (psf)
Mechanical/Electrical Rooms	150
Offices	50+20 (Partitions & furnishings)
Restrooms	50
Storage Rooms	125
Stairs and landings	100
All Other Areas	See IBC 2000

The floors shall be capable of supporting a 2000 lb concentrated load applied over a 30 inch by 30 inch area, positioned at any location.

Stairs and landings shall be designed to support the uniform load listed above or a concentrated load of 300 lbs on an area of 4 square inches, whichever produces the greater load effects.

1.3.3 Wind Loads

Wind loads shall be calculated in accordance with the procedures outlined in ASCE 7 (Per IBC 2000), using Exposure "C" and a Basic Wind Speed (3-Second Gust Speed) of 100 mph. Wind loads for both the main wind-force resisting system and for components and cladding shall be considered.

1.3.4 Seismic Loads

The ADAL Mission Support Facility shall be designed to withstand seismic loading in accordance with the provisions of IBC 2000. Seismic Parameters for Peterson AFB are as follows:

Seismic parameters are as follows:
Seismic Use Group: I
Short Period Spectral Response Acceleration (SS) = 0.18
1 Second Period Spectral Response Acceleration (S1) = 0.06

1.3.5 Dead Loads

Minimum design dead loads for common building materials shall be obtained from ASCE 7. Equipment loads and loads for materials not listed in that publication can be obtained from other recognized sources. In office areas and other areas of the building, where partitions will be elected of rearranged provision for a partition allowance of 20 psf shall be included.

1.3.6 Lateral Partition Loads

The minimum design wind pressure on interior partitions shall be 10 psf normal to the partition.

1.3.7 Design Temperatures

Design differential temperatures shall be a minimum 130 degrees F for thermal analysis of framing systems.

1.3.8 Deflections

Roof and floor members and walls shall be designed to have deflections limited to the following maximums.

1.3.8.1 Floors

The deflection due to live load of structural members supporting floors shall not exceed 1/360 of the member span. The deflection due to dead and live load shall not exceed 1/240 of the member span.

1.3.8.2 Roofs

The deflection of structural members supporting roofs, due to live, wind, or snow loadings, shall not exceed 1/360 of the member span where plaster or other brittle ceiling materials are attached or suspended, and shall not exceed 1/240 of the member span where non-brittle ceiling materials are suspended. Deflections shall not exceed 1/180 of the member span where the member is not supporting a ceiling. The deflection of structural members supporting roofs, due to dead and live loadings in combination, shall not exceed 1/240 of the member span where plaster or other brittle ceiling materials are attached or suspended, and shall not exceed 180 of the member span where non-brittle ceiling materials are suspended or where the member is not supporting a ceiling.

1.3.8.3 Partitions

The deflection of interior partitions due to lateral pressures shall not exceed 1/240 of the partition span.

1.3.9 Antiterrorism/Force Protection

The structural design shall incorporate the special requirements for Antiterrorism/Force Protection as given in United Facilities Criteria (UFC 4-010-01), Department of Defense Antiterrorism Standards For Buildings.

1.4 STRUCTURAL MATERIALS

Materials for structural elements shall be as indicated herein or on the attached architectural drawings. Where materials are not indicated, selection shall be at the Contractor's discretion, with the following limitations. Wood products are not acceptable for use as structural elements.

1.4.1 Structural Steel

1.4.1.1 Design

Structural steel shall be designed in accordance with AISC Specification

for Structural Steel Buildings - ASD or LRFD. All structural steel members shall be designed by the structural engineer to support all applicable loads. Structural drawings shall clearly show all structural members, connections and their locations.

1.4.1.2 Connections

Types of connections shall be consistent with the design assumptions for the basic type of steel construction used. Connections shall be designed and detailed to provide adequate capacities for the applied forces and moments. Connection design shall be the responsibility of the structural engineer and shall not be delegated to the steel fabricator.

1.4.2 Steel Joists and Joist Girders

The design and selection of steel joists and joist girders shall be governed by the Steel Joist Institute (SJI) Standard Specifications, Load Tables and Weight Tables for Steel Joists and Joist Girders. The wind uplift requirements shall be clearly delineated on the drawings. Joists requiring special configurations or design to resist wind uplift and non-uniform loads shall be designated as such on the drawings and the required design loads indicated, per SJI recommendations. Joist end supports and anchorage to resist uplift shall be designed to accommodate the applied forces, including those resulting from wind and seismic activity.

1.4.3 Steel Decking

The design and selection of steel deck shall be in accordance with the provisions of the Steel Deck Institute (SDI) Design Manual. Minimum required section properties of deck sections shall be determined as prescribed by the appropriate Specifications of the SDI Design Manual, and shall be specified or indicated on the drawings. Where the steel deck is designed to function as a shear diaphragm, the design shall be in accordance with the provisions of the Steel Deck Institute (SDI) Diaphragm Design Manual.

1.4.4 Masonry

1.4.4.1 Design

Masonry design shall be in accordance with UFC 1-200 and IBC 2000. Reinforcement shall be sufficient to satisfy the calculated requirements for strength, shrinkage crack control, and seismic design. If masonry walls are used in conjunction with steel framing as non-load-bearing and non-shear-resisting elements, the connections between walls and the structural steel frames must be designed to allow vertical and horizontal frame deflection without transferring loads from steel to adjoining masonry walls.

1.4.4.2 Masonry Material Properties

Specified compressive strength of masonry shall be fm = 1350 psi or greater. Hollow concrete masonry units shall conform to ASTM C90, Type I. Type S mortar shall be specified for all masonry. Specified compressive strength of grout shall be 2000 psi, minimum.

1.4.4.3 Crack Control

Concrete masonry crack control measures comprised of masonry control joints, joint reinforcement, and bond beams shall be incorporated in the design of concrete masonry walls and partitions. Masonry Control Joints (MCJ) shall be judiciously located at spacings no greater than the maximums recommended in UFC 1-200, and shall be shown on the Architectural elevations or the structural plans. Control joints shall not be placed closer than 24 inches from openings.

1.4.5 Reinforced Concrete

1.4.5.1 Design

Reinforced concrete design shall be in accordance with ACI 318 and related current ACI publications which are applicable to the design, UFC 1-200, and IBC 2000, as applicable. All concrete elements, including slabs-on-grade, shall be reinforced with temperature and shrinkage reinforcement as a minimum. Temperature reinforcement shall be as recommended by ACI 318 and IBC 2000, as appropriate.

1.4.5.2 Concrete Strength

The required 28-day compressive strength of the concrete shall be left to the Contractor's discretion, except that 3000 psi shall be a minimum. For concrete that is to be installed with exterior exposure, air-entrainment, producing a total air content in the concrete between 4 and 7 percent by volume, shall be required. Concrete in contact with soil shall be made with Type II Cement. The maximum water-cement (w/c) ratio shall be 0.45.

1.4.5.3 Reinforcing Bar Usage Limitations

Grade 60 ksi bars shall be used for concrete design. When available, grade 40 ksi bars may be used for secondary reinforcement such as stirrups and ties. Minimum bar size shall be #4 bars except for stirrups and ties which may be #3 bars as per ACI.

1.4.5.4 Concrete Joints

Control joints and contraction joints shall comply with AFM 88-3, Chapter 15 and IBC 2000, and shall be located to reduce concrete cracking to a minimum. All exposed concrete joints shall be sealed with appropriate joint sealants.

1.4.6 Precast Concrete

1.4.6.1 Design

The design shall conform with the requirements of ACI 318, Chapter 16 - Precast Concrete. The precast units shall be designed for all applicable loads indicated in paragraph STRUCTURAL LOADING CRITERIA and the design shall consider all loading and restraint conditions from initial fabrication to completion of the structure. Flexural members shall be designed to support full live load acting in combination with full dead load, plus concentrated loads from any mechanical equipment actually furnished. The effects of initial and long-time deflections as well as transporting the units shall be considered in the design of precast members. Attachment of precast units shall be by welding, bolting or embedment of bars or other connection devices, at the Contractor's option.

1.4.6.2 Precast Concrete Strengths

The required 28-day compressive strength of precast concrete shall be left to the Contractor's discretion, except that 5000 psi shall be a minimum. For any precast units that are to be installed with exterior exposure, air-entrained concrete, with a total air content between 4 and 7 percent by volume, shall be required.

1.5 STRUCTURAL FRAMING SYSTEMS

The structural systems used for the ADAL Mission Support Facility shall be selected and designed by the Contractor. The lateral load resisting system shall incorporate bracing, moment resisting frames, shear walls, diaphragms, or any combination thereof, provided the elements of the system are compatible with the attached architectural floor plan. The seismic force-resisting elements shall conform to the requirements of IBC 2000. The structural framing system chosen shall meet all aforementioned project requirements and the requirements listed below.

1.5.1 Roof Framing

The roof of the building shall slope as required for the type of roofing system used. The roof slope shall be accomplished by sloping of the structural framing members. The design of roof framing members shall include consideration of any concentrated loads from suspended mechanical and electrical equipment, including cable trays and HVAC units. The location and magnitude of suspended equipment loads shall be closely coordinated with the mechanical and electrical system designs. See Section 01003 ARCHITECTURAL REQUIREMENTS for minimum and maximum structure elevation requirements.1.5.2 Location of Structural Elements

Structural elements, including columns, bracing, shear walls and load-bearing walls shall be located as required by the structural design. The structural design and corresponding selection and location of structural elements shall be compatible with the floor plan, roof plan, elevations and other architectural drawings of this document. Columns shall be located in an orthogonal grid pattern to be repeated along both major axis of the facility to the greatest extent possible, and in such a manner that doorways or other access ways are not obstructed. Use of structural bracing shall be minimized, and shall be limited to locations where bracing is concealable at interior or exterior wall lines and does not obstruct windows, doors or other openings. Shear walls, where used, shall be located in coordination with architectural partition requirements.

1.6 EXTERIOR/INTERIOR WALLS

Criteria indicated in Section 01003 ARCHITECTURAL REQUIREMENTS shall be incorporated into the design of all walls. The Architectural floor plans as part of this document indicate the location of walls to be incorporated into the project.

1.6.1 Non-Load-Bearing Walls

Non-load-bearing walls shall be laterally braced by the structure, and shall be connected in a manner which provides for vertical deflection of the structure without inducing vertical loads into the walls.

1.6.2 Shear Walls

Shear walls, where used, shall be constructed of cast-in-place or precast reinforced concrete at the Contractor's choice. Shear walls shall be designed in accordance with ACI 318, Chapter 3, and IBC 2000.

1.7 FOUNDATION SYSTEMS

Design of foundation components shall be the responsibility of the contractor. The components of the foundation system shall be constructed of reinforced concrete. The required 28-day compressive strength of concrete for the foundations shall be left to the Contractor's discretion, except that 3000 psi shall be a minimum. All parts of the foundation system shall be designed to keep dead load footing pressures relatively uniform, in order to minimize differential settlements.

A Final Foundation Analysis has been prepared and is attached to the RFP.

1.7.1 Earthwork

Earthwork for the ADAL Mission Support Facility shall conform to the requirements set forth in UFGS Section 02300 EARTHWORK and to requirements stated in the Final Foundation Analysis.

1.7.2 Foundation Systems

The Final Foundation Analysis calls for the foundation system for the ADAL Mission Support Facility to consist of conventional continuous and spread footings bearing on native or recompacted native material. An excess bearing pressure of 2000 psf shall be used for frost depth of 3 feet on recompacted native material per the soils report. An excess bearing pressure of 2500 psf shall be used for footings greater than 12 feet in depth on native material.

1.7.3 Design Parameters

Parameters used for foundation design, including the allowable soil bearing pressure, lateral earth pressure coefficients and design footings depths shall be in accordance with the Final Foundation Analysis report provided.

1.7.4 Foundation Perimeter Insulation

Perimeter insulation shall be installed on the interior face of all exterior perimeter foundation walls. Insulation shall extend from the bottom of the floor slab down to the top of the footing.

1.7.5 Frost Protection

The depth for frost protection expected in the ground used in the design of the foundation systems is 36 inches. The corresponding minimum design depth for bottom of building foundations from finish grade shall be 36 inches.

1.7.6 Structural Stoops at Exterior Doorways

All exterior pedestrian doorways require structural stoops. Stoops shall have foundation walls extending down to frost depth and shall be rigidly attached to building foundation walls. Stoops shall comply with the

subgrade and building pad requirements of the Final Foundation Analysis. The stoop slab shall be flush with the interior floor slab at the threshold and shall slope away from the building at a 1/8-inch per foot slope.

1.8 CONCRETE FLOOR SLABS-ON-GRADE

Design of slabs shall be in accordance with AFM 88-3 Chap. 15 and the following detailed instructions:

1.8.1 General

Slabs shall be designed as "floating slabs" without rigid edge support, and with lateral and vertical movement unrestrained, except where noted below. Where compressible filler is used as a cushion, its thickness shall be not less than 2 inches. An isolation joint, consisting of a 1/2 inch layer of expansion joint material, is required where slabs abut vertical surfaces. Slab thicknesses shall be selected in accordance with AFM 88-3, Chapter 15, or as required by design. Slabs shall be reinforced with a minimum of 0.15 percent steel based on cross sectional area. Crack control measures shall be incorporated in the slab design. Control joint details and spacings shall be as delineated in AFM 88-3, Chapter 15. The required 28-day compressive strength of concrete for slabs shall be left to the Contractor's discretion, except that 3000 psi shall be a minimum.

1.8.2 Interior Concrete Slabs-on-Grade

The subgrade under interior slabs-on-grade shall be overexcavated two feet and recompacted to 95% of maximum per ASTM D 1557. A 20 mil vapor barrier shall be placed over the prepared subgrade. A 6-inch thick layer of compacted capillary water barrier material shall be placed over the vapor barrier, and sand shall be placed over the capillary water barrier after compaction to fill any voids and to cover the aggregate. The concrete slab-on-grade shall be placed over the capillary water barrier after the sand is in place.

1.8.2.1 Capillary Water Barrier Layer

Capillary water barrier material shall consist of clean, crushed, nonporous rock, crushed gravel, or uncrushed gravel. The maximum particle size shall be 1.5 inches and no more than 2 percent by weight shall pass the No.4 sieve. The portion of the material passing the No.40 size sieve shall be non-plastic or shall have a plasticity index of less than or equal to 10. The capillary water barrier shall be placed in a minimum of 2 lifts, each compacted by a hand operated, vibratory compactor.

1.8.3 Slabs to Receive Ceramic Tile

Slabs to receive finishes requiring an inset grout bed or frame shall be 5 inches uniform in thickness, and shall be reinforced with #4 bars at 12 inches o.c. each way. Slabs shall be depressed as necessary to receive the ceramic tile. At interior edge locations, the slab shall be thickened and doweled into the adjacent slab with 0.75 inch diameter x 16 inch long dowels at 12 inches o.c.. At locations where the slab abuts an exterior foundation wall, it shall be supported by the wall.

1.8.4 Floor Tolerances

There are no special flatness and levelness requirements for the floor, however, the flatness and levelness of all concrete slabs-on-grade shall be

carefully controlled and the tolerances measured by the F-Number or straightedge system of ACI 117/117R. The minimum surface profile quality classifications for float and trowel finishes surfaces shall be "flat" as defined in ACI 117/117R. All other finishes shall meet the criteria set forth in ACI 117/117R.

1.8.5 Interior Equipment Pads

Floor mounted mechanical and electrical equipment shall be installed on 6 inch thick raised concrete housekeeping pads. The pads shall be reinforced with at least the minimum temperature reinforcement required. The pads shall be sized 6 inches larger all around than the piece of equipment furnished and all edges of the pad shall be chamfered.

1.8.6 Equipment Vibration Isolation

All vibration producing mechanical and electrical equipment shall be mounted in such a manner as to prevent the transfer of vibrations to adjacent parts or areas of the building. If necessary for any large vibration producing equipment installed within the facility, the equipment will be supported on individual isolated foundations. The isolated foundation shall be separated from the building slab by a continuous 3/4 inch expansion joint.

1.9 OTHER STRUCTURAL WORK

1.9.1 Exterior Equipment Pads

Any exterior mechanical or electrical equipment shall be installed on concrete pads. The pads shall be a minimum of 8 inches thick and shall be reinforced with at least the minimum temperature reinforcement required. The pads shall be sized 6 inches larger all around than the piece of equipment furnished and all edges of the pad shall be chamfered. Design of exterior pads shall be coordinated with Mechanical and Electrical system designs.

PART 2 NOT USED

PART 3 NOT USED

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SECTION 01006

MECHANICAL REQUIREMENTS
02/04

PART 1 MECHANICAL REQUIREMENTS

1.1 MECHANICAL SYSTEMS CRITERIA

1.1.1 General Parameters/References

Mechanical systems, including HVAC systems, plumbing, exterior gas distribution, gas piping and building temperature controls shall be designed to comply with this section and the documents listed below to the extent referenced in this section. The publications are referred to in the text by basic designation only. The latest edition of the following standards and codes in effect and amended as of date of supplier's proposal, and any subsections thereof as applicable, shall govern design and selection of equipment and material supplied:

Air Force Manual (AFM)(I) 32-1093, Energy Monitoring and Control Systems EMCS).

AF ETL 01-18: Fire Protection Engineering Criteria - Electronic Equipment Installations.

American Conference of Government Industrial Hygienists (ACGIH Industrial Ventilation: A Manual of Recommended Practice

American Society for Testing and Materials (ASTM) publications - A53.

American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE):

Guides:

Terminology of HVAC&R, Second Edition;
Guideline 1, The HVAC Commissioning Process;
Guideline 3, Reducing Emission of CFC Refrigerants in Refrigeration;
Guideline 12, Minimizing the Risk of Legionellosis Associated with Building Water Systems.
Guideline 13, Specifying Direct Digital Control (DDC) Systems

Handbooks:

2004 HVAC Systems & Equipment;
2003 HVAC Applications;
2002 Refrigeration.
2001 Fundamentals;

Practices:

ASHRAE Terminology of HVAC&R;
Pocket Guide for Air-Conditioning.

Standards:
15, Safety Code for Mechanical Refrigeration;

55a Thermal Environmental Conditions for Principles of Heating, Ventilating and Air-Conditioning;

62 Ventilation for Acceptable Indoor Air Quality;

90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings (IESNA COSPONSORED) (ANSI COSPONSORED)with amendments.

52.1 Gravimetric and Duct Spot Procedures for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter;

52.2 Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size;

129 Measuring Air-Change Effectiveness;

American Society of Mechanical Engineers (ASME), 22 Law Drive, P.O. box 2900, Fairfield, N.J. 07007-2900, A17.1 Safety Code for Elevators & Escalators, ASME, 1996; B36.10, 61; section 8 & 9.

Army Technical Instructions TI 809-04 Seismic Design for Buildings, dated December 1998.

Army Engineering Technical Letter (ETL) 1110-3-438 Indoor Radon Prevention and Mitigation, dated 15 September 1993.

Air Force Engineering Technical Letter (ETL) 94-2 Utility Meters in New and Renovated Facilities (Superseded by UFC 3-400-01)

Engineering Technical Letters (ETL) 94-4 Energy Usage Criteria for Facilities in the Military Construction Program (Superseded by UFC 3-400-01).

Air Force Engineering Technical Letter (ETL) 00-5 Seismic Design for Buildings and Other Structures

Energy Policy Act of 1992 (Public Law 102-486).

Executive Order 12902, Energy Efficiency and Water Conservation at Federal Facilities.

Executive Order 13123, Greening the Government Through Efficient Energy Management.

Instrument Society of America Standard (ISA S75.01).

International Building Code, ICBO.

International Plumbing Code, ICBO.

National Fire Codes (NFPA):

13 Installation of Sprinkler systems
54 National Fuel Gas Code
72 National Fire Alarm Code

75 Protection of Electronic Computer/Data Processing Equipment
90A Installation of Air Conditioning and Ventilating Systems
90B Installation of Warm Air Heating and Air Conditioning Systems
211 Chimneys, fireplaces, Vents and solid Fuel Burning Appliances.

National Fuel Code.

National Electrical Safety Code, IEEE.

National Sanitation Foundation

SMACNA - HVAC Systems - Duct Design.

SMACNA -HVAC Duct Construction Standard - Method and Flexible.

Title 10 CFR, Part 435, Subpart A, pages 4535-4720 inclusive, Energy Conservation Voluntary Performance Standards for New Commercial and Multi-family High Rise Residential Buildings, Mandatory For New Federal Buildings Published January 30, 1989.

Title 10 CFR Part 436 Federal Energy Management and Planning Programs, Life Cycle Cost Methodology and Procedures, January 25, 1990.

Underwriters Laboratories (UL 142),(UL 441).

Unified Facilities Criteria (UFC) 3-400-01 Design: Energy Conservation

Unified Facilities Criteria (UFC) 3-400-02 Design: Engineering Weather Data

Unified Facilities Criteria (UFC) 4-010-01 DOD Minimum Antiterrorism Standards for Buildings

Unified Facilities Criteria (UFC) 3-410-01FA Design: Heating, Ventilating, Air Conditioning

UFC 3-430-01A Design: Heating and Cooling Distribution Systems.

Unified Facilities Criteria (UFC) 3-420-01FA Design: Plumbing

Uniform Mechanical Code, ICBO.

US Green Building Council's Leadership in Energy & Environmental Design (LEED) http://www.usgbc.org/

All other applicable NFPA and Air Force standards.

PART 2 PRODUCTS & EXECUTION

2.1 GENERAL REQUIREMENTS

The mechanical design shall consist of heating, ventilating, and air-conditioning, gas distribution, HVAC controls, plumbing, and other miscellaneous mechanical systems and equipment. Drawings, specifications, design analysis, and calculations shall be provided for both the 60 percent design and Final design submittals, and shall be in accordance with SECTION 01336 - 60 PERCENT DESIGN REQUIREMENTS, & SECTION 01338 - 100 PERCENT DESIGN REQUIREMENTS.

This chapter contains instructions and engineering requirements for the following:

- Equipment Identification and Abbreviations.
- Identification of Piping.
- Protection for Mechanical Piping and Equipment.
- Thermal Insulation of Mechanical Systems.
- Plumbing Systems.
- Exterior Gas Distribution Systems.
- Interior Gas Piping Systems.
- Heating, Ventilating, and Air-conditioning Systems.
- Building Temperature Control Systems.
- Testing, Adjusting, and Balancing of HVAC Systems. Commissioning
- Technical Specifications.
- Energy Use Budget (EUB) Compliance Check.
- Training.

a. Provide new mechanical systems, complete and ready for operation. The design and installation of all mechanical systems, including manufacturer's products, shall meet the instructions and requirements contained herein and the requirements of the provided technical guide specifications. Where conflicts between these instructions and the guide specifications or criteria exist, these instructions shall take precedence. Any installation requirements within these instructions, but not contained in the specifications, shall be added to the specifications or shown on the drawings. For minimum specification requirements see paragraph 2.18 TECHNICAL SPECIFICATIONS.

b. Mechanical designs shall give maximum consideration to the comfort of the occupants. The design shall also be economical, maintainable, energy conservative and shall take into account the functional requirements and planned life of the facility. Mechanical designs shall also consider life cycle operability, maintenance and repair of the facility and real property installed equipment components and systems. Ease of access to components and systems in accordance with industry standards and safe working practices is a design requirement. All like equipment and accessories shall be from a single manufacturer.

c. Standard Products - Material and equipment shall be a standard product of a manufacturer regularly engaged in the manufacture of the product and shall be essentially duplicate items that have been in satisfactory use for at least 2 years prior to bid opening. The label or listing of the Underwriters Laboratories, Inc., will be accepted as evidence that the materials or equipment conform to the applicable standards of that agency. In lieu of this label or listing, a statement from a nationally recognized, adequately equipped testing agency indicating that the items have been tested in accordance with required procedures and that the materials and equipment comply with all contract requirements will be accepted.

d. Calculations shall be provided for all mechanical equipment such as heating & cooling coils, unit heaters, piping, pumps, fans, ducts, louvers, gas services and piping, plumbing, water heaters, gas distribution and etc. Heating and cooling calculations may be provided by computer analysis i.e., Elite Software Inc., Trane Trace Load 700, Carrier E20-II Hourly Analysis Program (HAP) version 3.04 loads program etc. Heat Loss calculation shall use actual design U-values. Design

Energy Usage shall meet or be below Energy Use Budget target (see paragraph ENERGY USE BUDGET (EUB) COMPLIANCE CHECK).

e. Design Energy Usage shall meet or be below Energy Use Budget target (see paragraph 2.19 ENERGY USE BUDGET (EUB) COMPLIANCE CHECK). This shall be accomplished by increasing glazing, roof or wall insulation as necessary but, it shall not be below the level required by section 01003 ARCHITECTURAL BUILDING REQUIREMENTS. Also, develop and use building modeling and analysis techniques to establish a base case that meets the minimum prerequisite standard ASHRAE/ISNA 90.1-1999. Then compare the baseline design energy cost budget for regulated energy components described in the requirements of ASHRAE/ISNA Standard 90.1-1999 as demonstrated by a whole building simulation using the Energy Cost Budget Method described in Section 11 of that document, with the actual energy COST budget for this project in percentile. Regulated energy components include HVAC systems, building envelope, service hot water systems, lighting and other regulated systems, defined by the standard. Identify the percent the actual design energy cost budget is above or below the baseline case in the design analysis.

2.1.1 Facility Description

The ADAL Mission Control Support Facility Addition and is to be located at Peterson Air Force Base, Colorado. The facility /addition will enhance the mission effectiveness, level of security and base operations.

Space is required for offices, conference rooms, classrooms, and training rooms.

For mechanical calculation purposes, the normal operating hours of the facility are 6 a. m. to 6 p.m., 7 days a week.

Mechanical rooms, vestibules, janitor's closets, and storage rooms shall be assumed as unoccupied. The following are occupied spaces with number of personnel required. The "Projected Staff" column in the charts below when summed does not reflect the actual number of people in the building. The charts, combined with other elements of this document and the project drawings, are merely tools that a designer may use to accurately create an effective and efficient heating and cooling system.

OVERALL SPACE REQUIREMENTS - BASIC

ORGANIZATION	PROJECTED STAFF	COMPUTERS, EQUIPMENT, ETC.
21 CONS Class/Conf Rms	*	32 Computers, 3 Projectors
21 CONS Conf Rooms	*	3 Computers, 3 Projectors
21 LGC	74	6 Computers, 1 Copier, 1 Projectors
21 LGCB	46	29 Computers, 1 Copier, 1 Scanning Sta.
21 LGCC	31	31 Computers, 1 Copier, 1 Scanning Sta.
21 LGCP	23	17 Computers, 1 Copier, 1 Scanning Sta.
21 LGCZ	46	18 Computers, 1 Copier, 1 Scanning Sta.
21 ME/EEO	17	9 Computers
21 MSS/DFF	18	8 Computers
21 MXG/CC	185	17 Computers, 5 Projectors, 1 Copier
21 SFS/SFA	30	15 Computers, 1 Projector, 1 Copier
21 SMF	52	41 Computers, 1 Copier, 1 Projector
21 SW/BZ	25	2 Computers, 1 Projector
21 SW/MO	106	58 Computers, 2 Projectors, 1 Copier
Bidder Library	5	1 Computer

Computer Room	?	36 Computers, 2 UPS
Source Selection Rms.	60	60 Computers, 3 Projectors

OVERALL SPACE REQUIREMENTS - OPTION

ORGANIZATION	PROJECTED STAFF	COMPUTERS, EQUIPMENT, ETC.
21 CONS Conf Rooms	*	3 Computers, 3 Projectors
21 LGC	74	6 Computers, 1 Projector, 1 Copier
21 LGCB	46	29 Computers, 1 Copier, 1 Scanning Sta.
21 LGCC	32	31 Computers, 1 Copier
21 LGCP	34	17 Computers, 1 Projector, 1 Copier
21 LGCZ	18	18 Computers, 1 Copier
21 ME/EEO	17	9 Computers
21 MSS/DFF	18	8 Computers
21 MXG/CC	185	17 Computers, 5 Projectors, 1 Copier
21 SFS/SFA	31	15 Computers, 1 Projector, 1 Copier
21 SMF	54	37 Computers, 1 Projector, 1 Copier
21 SVS/CC	61	19 Computers, 1 Copier
21 SVS/SVF	39	15 Computers, 1 Projector, 1 Copier
21 SW/BZ	25	2 Computers, 1 Projector
21 SW/MO	97	55 Computers, 2 Projectors, 1 Copier
Bidder Library	5	1 Computer
Computer Room	?	36 Computers, 2 UPS
Source Selection Rms.	60	60 Computers, 3 Projectors

* - 15 people per square foot is required for VAV calculations.

2.1.2 Design Conditions

The following conditions shall be used in designing the mechanical systems:

1. Site Elevation:

Equipment design elevation is 6185 feet above sea level. Appropriate corrections shall be made when calculating the capacity of all mechanical equipment installed at this elevation.

2. Latitude: 38.82695°F N
Heating Degree Days: 6766 annual (65°F)
Cooling Degree Days: 692 annual)

3. Outside Design Conditions:

Winter:
5°F DB for outside makeup air and infiltration loads.

12°F DB for transmission loads.

Summer:
90°F DB; 58°F MCWB for building loads
95°F DB air cooled equipment.

4. Inside Design Conditions:

Winter: 68°F DB for offices, conference rooms, classrooms, courtrooms,

and training roomsSpaces and Communications Closets/Existing Communications Room.
55°F for Storage Areas, Mechanical Rooms, and Electrical Rooms.
68°F DB at 45% relative humidity ± 10% for computer rooms.
75°F DB at 45% relative humidity ± 10% for electrical rooms.

Summer: 78°F at 50% relative humidity for offices, conference rooms, classrooms, courtrooms, and training rooms Spaces and Communications Closets/Existing Building Main Communications Room.
98°F for Storage Areas, Mechanical Rooms, and Electrical Rooms.
70°F DB at 50% relative humidity ± 10% for computer rooms.
75°F DB at 45% relative humidity ± 10% for electrical rooms.

5. Minimum Ventilation Requirements:

General: 20 cfm supply of outside air per person. Provide carbon dioxide sensors to provide alarm when carbon dioxide level is out of range..

Toilets: 50 cfm per water closet or urinal. Maintain negative pressure in toilets.

Locker Rooms: 2.5 cfm exhaust per square foot. Maintain negative pressure in locker room areas.

Offices, conference rooms, storage, classrooms, training rooms, courtrooms, and computer rooms: 20 cfm per person.

7. Cooling Loads:

Lighting - Coordinate with Electrical designer.
Communication equipment room. - Coordinate with Electrical designer. Communications equipment shall be assumed 100% resistive heating.
PC/Monitor = 400 watts total per station or per ASHRAE Handbook of Fundamentals.
Staff/Visitors = 255 BTUH/person sensible and 255 BTUH/person latent; moderately active office work per ASHRAE Handbook of Fundamentals.

8. Building Pressurization:

Entire building shall be pressurized. For negative pressurization see paragraph MINIMUM VENTILATION REQUIREMENTS.

9. Anti-terrorism & Force Protection:

As applicable, the following shall be provided for all new mechanical systems:

a. Air intakes: Air intakes to heating, ventilation, and air conditioning (HVAC) systems that are designed to move air throughout a building that are at ground level provide an opportunity for aggressors to easily place contaminants that could be drawn into the building.

1) New buildings: For all new buildings covered by this document locate all air intakes at least 10-ft above the ground.

b. Emergency air distribution shutoff: For all new buildings provide

an emergency shutoff switch in the HVAC control system that can immediately shut down air distribution throughout the building. The switch (or switches) must be located to be easily accessible by building occupants. Providing such a capability will allow building occupants to limit the distribution of airborne contaminants that may be introduced into the building.

c. Utility distribution and installation: Utility systems can suffer significant damage when subjected to the shock of an explosion. Some of these utilities may be critical to safely evacuating personnel from the building or their destruction could cause damage that is disproportionate to other building damage resulting from an explosion. To minimize the possibility of the above hazards apply the following measures:

1) Utility routing. For all new buildings route critical or fragile utilities such that they are not on exterior walls.

2) Redundant utilities - Not Used.

d. Equipment bracing. Mount all overhead utilities and other fixtures to minimize the likelihood that they will fall and injure building occupants. Design all equipment mountings to resist forces of 0.5 times the equipment weight in any direction and 1.5 times the equipment weight in the downward direction. This standard does not preclude the need to design equipment mountings for forces required by other criteria such as seismic standards.

2.1.3 Mechanical Room Layout Requirements

The mechanical equipment room layouts shall be provided with ample floor space to accommodate routine maintenance of equipment and have head-room to accommodate required equipment. Ample space shall be provided around equipment to allow unobstructed access for entry, servicing, and routine maintenance. Space provided in rooms for service and/or replacement of filters, coils, motors, and other equipment items shall be indicated with broken (dashed) lines on the drawings. Provisions for installation, removal, and future replacement of equipment shall be coordinated with the architectural design. The as-built drawings shall be provided in accordance with Section 01040, AS-BUILT DRAWINGS. When Fire Protection risers and equipment is located in a mechanical equipment room, the dedicated fire protection space shall be indicated by a dashed line and noted "Fire Protection Space". The arrangement, selection, and sizing of all mechanical equipment shall be such that it can be broken down and removed from the building without dismantling any adjacent systems or structures. A 60 percent design submittal shall be provided for approval to verify mechanical room layout.

2.1.4 Mechanical/Electrical Equipment Coordination

Arrangement of all mechanical equipment and piping shall be coordinated with electrical work to prevent interference with electrical conduits that may run through the mechanical room and to insure adequate space in shared chases. Mechanical equipment (pipes, ducts, etc.) shall not be installed over or within space which is dedicated to transformers, panelboards, or other electrical equipment. When electrical equipment is located in a mechanical equipment room, the dedicated electrical space shall be indicated by a dashed line and noted "Electrical Equipment Space".

2.1.5 General Piping Requirements

As applicable, the following shall be provided for all new mechanical systems:

a. All piping and equipment located in finished areas of the building shall be concealed or furred-in; exposed piping and equipment is only allowed in utility, equipment, storage and other rooms of this nature.

b. Piping and supports shall not interfere with equipment maintenance access.

c. Dielectric unions shall be installed between dissimilar metals in soldered and threaded piping systems and insulated flanges shall be installed for welded systems.

d. All underground metallic lines, fittings, and valves; except for cast-iron soil and storm drain piping systems, shall be cathodically protected in accordance with Electrical Section paragraph entitled "Cathodic Protection".

e. All exterior, underground non-metallic piping shall be buried with pipe detection tape. See also, paragraph SERVICE LINE PROTECTION.

f. Water and natural gas service lines shall be metered where they enter the building. Water and natural gas meters shall be provided with pulse generators compatible with the EMCS system for monitoring water and gas usage.

g. All centrifugal pumps, regardless of service, shall be non-overloading allowing the pump to operate at any point in its characteristic curve.

h. Provide vent and drain valves with hose-end connections on all mechanical systems. Air vents shall be installed on all high points in piping systems. Drain valves shall be installed at low points and at equipment, which must be dismantled for servicing.

i. Pipe taps, suitable for use with either a 1/8 inch OD temperature or pressure probe, shall be located at each pressure gauge.

j. Provide isolation valves, balancing valve, flow measuring device, and pressure/temperature test plugs at all heating and/or cooling terminal units.

k. All coils shall be provided with valved drain and air vent connections.

l. On air handling units with multiple coils, isolation valves shall be installed on the supply piping and a balancing valve on the return piping of each coil. A thermometer shall be installed on the supply piping of each coil. Temperature/pressure taps shall be provided on the supply and return piping of each coil.

m. Strainers shall be provided with a valved blowdown connection and piped to a floor drain.

n. Provide bypass piping with isolation valve around all non-redundant control and regulating valves.

o. All pipe, ductwork, and equipment supports and hangers shall be coordinated with the roof design to avoid possible overloading of any of the structural elements.

2.1.6 Roof Mounted Equipment

Except for plumbing vents, supply and exhaust fans, and louvered intake or relief penthouses, mechanical equipment shall not be located on the roof of the facility. Packaged roof-top heating/cooling/air handling units are allowed.

2.1.7 Vibration Isolation/Equipment Pads

Provide vibration isolation devices on all new floor mounted or suspended mechanical equipment capable of 98 percent efficiency. All new floor mounted mechanical equipment shall be provided with 6 inch thick housekeeping pads which extend 6 inches all around equipment provided.

2.1.8 Permanent Maintenance Instrumentation

Provide sufficient instrumentation to aid maintenance personnel in balancing and/or troubleshooting mechanical systems. Instrumentation shall be provided in the media at each change in temperature and at all mixing points in air handling systems, at all discharges of air handlers, and at all return mains. Pressure gauges, thermometers, flow indicators, sight glasses, etc., shall be installed to be easily read from the adjacent floor. Thermometers shall have separable socket thermowells. Allow for the removal, repair, or cleaning of flow measuring devices without having to shut down the system. Provide a portable meter, with appropriate range, for each type of flow measuring device installed.

2.1.9 Temporary Control Instrumentation

Instrumentation shall be provided for the field calibration of all control and monitoring devices, and for the commissioning of the mechanical systems. Provide local indication measuring instrumentation for each of the HVAC control system components. Local instruments are to be independent of sensing devices used for the control system. The exceptions are air flow measuring stations, turbine flow meters, pitot tubes, and other flow measuring devices that may be shared as sensing devices by local indicating devices and control system devices and are required to be permanent. Local instruments are to be of industrial quality, must be certified as being factory calibrated, and must be capable of field calibration using standard procedures. Measuring provisions shall be provided at each varying input and control output in the system.

2.1.10 Color Coding Scheme for Locating Hidden Utility Components

To identify points of access for maintenance and operation of hidden utility components, a color coding scheme shall be provided for all areas of the facility where suspended grid ceilings are installed. Color coding scheme shall meet the requirements of Technical Specification 09900, PAINTS COATINGS.

2.1.11 Utility Interruptions

Certain limitations on utility interruptions apply. Unauthorized utility interruptions will not be permitted. Any work that requires a utility

interruption shall be scheduled in advance. Outages are subject to postponement or cancellation by site authorities without prior notification. Coordination requirements of utility interruptions shall be in accordance with SECTION 00800 SPECIAL CONTRACT REQUIREMENTS. All utility interruptions shall be identified with notes on the project drawings.

2.1.12 Power Outage Start-Up

Upon an electrical power outage, all air handling units and other major mechanical equipment will shut down and shall be restarted in a logical and efficient manner. Timing between starts and sequence of equipment starting upon restoration of electrical power shall be provided and programmed into the HVAC temperature control system, with programming capable of being changed by the operating personnel.

2.1.13 Spare Parts Lists

Recommended spare parts lists that require more than a 60 day lead time, and/or any special service tools shall be provided to the Government at the Final Inspection.

2.1.14 Equipment Room Diagrams

The following "As-Built" information, permanently mounted in a frame and covered by clear plexiglass, shall be provided in the mechanical equipment rooms:

a. Air distribution diagrams and damper schedules.

b. Hot water piping diagrams and valve schedules.

c. Not Used.

d. Control diagrams, control device schedules, and sequences of operation.

e. Listing of active control programs, including full program text for custom programs, shall be provided as part of equipment room diagrams

2.1.15 Interior Design - Color Coordination

All mechanical items located in finished areas and on exterior walls, shall be coordinated with and painted to match the color scheme requirements of Technical Specification 09915, COLOR SCHEDULE.

2.2 EQUIPMENT IDENTIFICATION AND ABBREVIATIONS

This Section contains requirements for the identification and abbreviation of mechanical equipment.

2.2.1 Equipment Identification

Provide a brass name tag for each valve, temperature control device, control system device, etc., installed in all mechanical systems. In addition, all mechanical equipment shall be clearly identified with a conspicuously located, permanent label. Mechanical equipment shall be identified by type and sequence number. For example, the first air

handling unit in the building shall be identified as AHU-1, the second air handling unit shall be AHU-2, etc. Mechanical equipment shall be labeled continuing the scheme established for the existing facility. Mechanical equipment shall further be labeled listing area served (i.e. First Floor, Bldg Addition) if it does not serve the entire facility

2.2.2 Abbreviations

The following list of abbreviations shall be used to describe the HVAC equipment types:

Air Handling Unit . . . . . AHU

BoiLeR . . . . . BLR

Cabinet Unit Heater . . . . . CUH

Control Valve CV

Domestic Water Heater . . . . . DWH

Exhaust Fan . . . . . EF

Expansion Tank . . . . . ET

Fan Coil Unit . . . . . FCU

Filter Bank . . . . . FB

Fin Tube Radiation . . . . . FTR

Gov't Furnished Contractor Installed . . GFCI

Gov't Furnished Gov't Installed . . . . GFGI

Heating Ventilating Unit . . . . . HVU

Hot Water Pump . . . . . HWP

Horizontal Unit Heater . . . . . HUH

Roof Top Unit . . . . . RTU

Tube Radiant Heater . . . . . TRH

Local Control Panel . . . . . LCP

Motor Operated Damper . . . . . MOD

Make-up Air Unit . . . . . MAU

Not In Contract . . . . . NIC

ReHeat Coil . . . . . RHC

Relief Hood .. . . . . RH

Supply Fan. . . . . .SF

Transfer Fan . . . . . TF

Vertical Unit Heater . . . . . VUH

2.3 IDENTIFICATION OF PIPING

All exposed and concealed piping in accessible spaces shall be identified with color coded bands and titles in accordance with the requirements of Technical Specification 09900 PAINTS AND COATINGS.

2.4 PROTECTION FOR MECHANICAL PIPING AND EQUIPMENT

This Section contains instructions and engineering requirements relating to the protection design of new mechanical piping, ductwork, and equipment. This Section contains instructions and engineering requirements relating to the protection design of new mechanical piping, ductwork, and equipment. Structural bracing and mounting of mechanical equipment shall be designed in accordance with Technical Specification 13080 SEISMIC PROTECTION FOR MISCELLANEOUS EQUIPMENT. In addition see Anti-terrorism & Force Protection requirements for additional requirements.

a. The facility shall be designed in accordance with Technical Specification 13080 SEISMIC PROTECTION FOR MISCELLANEOUS EQUIPMENT.

b. The mechanical design for the facility shall meet the requirements of Technical Specification 15070A SEISMIC PROTECTION FOR MECHANICAL EQUIPMENT.

2.4.1 Piping

Piping within the facility, except fire protection piping, is required to have restraints. All water pipes for fire protection systems shall be designed under the provisions of the current issue of the "Standard for the Installation of Sprinkler Systems" of the National Fire Protection Association NFPA 13, see Section 01008 FIRE PROTECTION REQUIREMENTS.

2.4.2 Ductwork

Ductwork within the facility is required to have restraints.

2.4.3 Floor Mounted or Suspended Equipment

See Specification 13080 SEISMIC PROTECTION FOR MISCELLANEOUS EQUIPMENT for requirements in securing floor mounted and suspended equipment within the facility.

2.4.4 Miscellaneous Equipment

Miscellaneous items which consist of a number of individual components built into an assembly by the manufacturers may require additional internal reinforcements to meet Specification 13080 SEISMIC PROTECTION FOR MISCELLANEOUS EQUIPMENT.

2.5 THERMAL INSULATION OF MECHANICAL SYSTEMS

Insulation requirements of new mechanical systems, including insulation of plumbing systems and equipment, domestic hot water supply and recirculating piping systems, and the insulation of the duct systems shall meet the

requirements of Technical Specification 15080 THERMAL INSULATION FOR MECHANICAL SYSTEMS. Domestic hot and cold water piping shall be insulated. All ducts shall be insulated in the mechanical rooms and all supply ducts shall be insulated. Cold piping shall have a vapor barrier. High abuse areas shall have aluminum jacket such as janitor closets and mechanical rooms.

2.5.1 Insulation Covers

Provide reusable insulation covers at all check valves, control valves, strainers, filters, or any other piping component requiring access for routine maintenance. Insulation exposed to the weather or possible physical damage shall be covered by an aluminum metal jacket. All piping with metal jacket shall be identified on the drawings.

2.6 PLUMBING SYSTEM

This Section contains instructions and engineering requirements relating to the design of the new plumbing systems as required. A plumbing system consists of the domestic hot and cold water supply distribution system to the various plumbing fixtures with isolation valves; fixtures, and fixture traps; soil, waste, and vent piping; and shall extend from connections within the structure to a point 5 feet outside the structure. The design of all plumbing systems shall, unless otherwise stated herein, comply with the most current Uniform Plumbing Code and shall meet the requirements of Technical Specification 15400A PLUMBING, GENERAL PURPOSE. Traps for lavatories, and sinks shall be chromium-plated, adjustable-bent tube, 20-gauge brass, where exposed and no cleanouts. Bioenvironmental Engineering (556-7721) shall be notified prior to disinfection of water lines. Copies of the results and analysis of the water line disinfection shall be forwarded to Bioenvironmental Engineering. Bioenvironmental Engineering shall be notified immediately if water lines are damaged.All backflow preventors shall be installed for accessibility per guide specification and shall comply with the requirements of the Department of Environmental Quality (DEQ) of the State of Colorado, Uniform Building Code, and Uniform Plumbing Code. State licensed plumbers shall install and/or test backflow preventors and cross connections devices. Initial testing and certification of new backflow devices needs to be performed and submitted for approval prior to domestic water usage. Water Program Manager - 21 CES/CEV-Fire system requires appropriate back flow prevention devices. CEO Utilities and BIO must be notified of the installation of back flow devise 3 months prior to completion of the project.For Fire Protection backflow preventor requirements see Section 01008 FIRE PROTECTION REQUIREMENTS. Lead content in the water distribution system (including in-line devices) shall comply with SDWA of 1998 with amendments and ANSI/NSF 61, section 8. In-line devices shall include water meters, building valves, check valves, meter stops, valves and fittings and backflow preventor. Soil piping does not require any cathodic protection. Provide sleeves through slab-on-grade floors.

2.6.1 Water Service Entrances

New water service entrance lines shall be installed below the recognized frost line and enter the buildings through the mechanical room floors. New water service entrances shall be provided with a positive displacement type water meter up to and including 2 inch and a turbine type water meter for greater than 2 inch, a pressure reducing valve and a reduced pressure principal backflow preventor with isolation valves located inside the building. Expansion tank shall be provided. Meters shall be provided with

a direct non-reset table, digital readout. Meters shall have a pulse switch initiator pulse output capable of operating up to speeds of 500 pulses per minute with no false pulses and shall require no field adjustments or 4-20 mA output. Initiators shall provide the maximum number of pulses up to 500 per minute that is obtainable from the manufacturer. Meters shall be connected to the EMCS system. Meter is required in accordance with Air Force ETL 94-2.

2.6.2 Piping Runs

Piping runs in buildings shall be arranged to not interfere with movement of personnel and equipment. Neither water nor drainage piping shall be located over electrical equipment or panels. Domestic water piping located outside of mechanical equipment areas shall be routed in the ceiling space above the corridors. Water and waste piping shall not be located in exterior walls or other spaces where there is danger of freezing except for wall hydrants. Where piping is to be concealed in wall spaces or pipe chases, such spaces shall be checked to insure that clearances are adequate to properly accommodate the piping. Water piping shall be designed not to exceed a velocity of 6.0 fps at full flow.

2.6.3 Pipe Materials

Table I in Technical Specification 15400A PLUMBING, GENERAL PURPOSE identifies available material alternatives for above/below ground soil, waste, and vent. Materials for domestic hot, hot water recirculating and cold water distribution systems shall be copper. All piping 2 inch and smaller shall be soldered using 95/5 tin antimony solder, piping 2-1/2 inches and larger shall be brazed. Multi-flame torch is not required for soldering or brazing. The Tables shall be edited to indicate which materials shall be used for installation of each system.

2.6.4 Protection of Water Supplies

Cross connections between water supply piping and waste, drain, vent, or sewer piping are prohibited. Reduced pressure type backflow preventors shall be provided on the domestic water service to the building and on the landscape irrigation system.

2.6.5 Fixtures

Plumbing fixtures shall conform to ASME standards and Executive Order 12902 with lead-free faucets. End-point devices shall meet lead leaching requirements of ANSI/NSF 61, section 9, i.e. lavatory faucets, kitchen faucets, supply stops, and end point control valves. In-line devices do not have to meet section 9 (i.e., all drains, backflow preventor). Work shall consist of but not be limited to the following. Coordinate location with the architectural plans.

a. Electric water cooler located near rest room entrance shall match existing make, model , and color.

b. Floor-mounted Janitor sink in Janitor's closets.

c. Waterless urinals shall not be allowed.

d. Water conservation fixtures (low flow type) with mechanical automatic metering devices conforming to the Technical Specification 15400A shall be provided in all restrooms. Electronic sensor solenoid

operated valves shall be used on lavatories only.

2.6.6 Janitors Closet Mop Sinks

A molded stone floor mounted type service sink shall be provided in all janitor closets. Overall sink dimensions shall be approximately 24 inch x 24 inch. The depth of the floor sink bowl shall be approximately 10 inch. Provide sink faucet with hose connection, hose, and hose bracket, mop bracket, and wallguard.

2.6.7 Break Rooms

Each of the Break Rooms shall be provided with a 1/2" domestic cold and hot water pipe to kitchen sinks. Each of the Break Rooms sinks shall be provided with residential type garbage disposals. Sinks shall be large, single bowl type and shall be regular kitchen size (approximately 25"W x 22"D x 6-1/2"H). The sink shall have a brushed stainless steel finish, unless otherwise indicated. The faucets shall be gooseneck type, single lever mixing valve, with 8" centers. The faucets shall also include an aerator with 2.5 gallons per minute flow and a sprayer. The faucets shall be chrome.

2.6.8 Electric Water Coolers

Bi-level, accessible or barrier-free, mechanically refrigerated electric water coolers shall be located near restrooms. Bottom spout unit shall be 28 inches above finished floor. Upper spout shall be 34 inches above finished floor. The push bar shall be front or front and side mounted. Single mechanically refrigerated electric water coolers shall not be permitted. Cooler shall be lead-free and use CFC-free refrigerant R-134a. Unit shall provide a minimum of 8 gph at 50°F. Coolers shall be certified to meet ANSI/NSF 61, Section 9 and meet lead leaching requirements of section 9.

2.6.9 Water Hammer Arresters

Commercially available water hammer arresters shall be provided at all new quick closing valves such as solenoid valves and will be installed according to manufacturers recommendations. Vertical capped pipe columns are not permitted.

2.6.10 Wall Hydrants

Exterior (key-operated) freeze-proof wall hydrants with vacuum-breaker backflow-preventor shall be located on outside walls at 100 feet intervals of the facility. A wall hydrant shall be provided near all Mechanical Room exterior doors. Exterior wall hydrants shall be mounted 36 inches above finished grade.

2.6.11 Wall Faucets

An interior wall faucet shall be provided in all Mechanical Rooms. Wall faucets shall be mounted 36 inches above the finished floor.

2.6.12 Lawn Irrigation

An automatic lawn sprinkler irrigation system shall be provided. Design requirements for the sprinkler irrigation system is defined in the Section 01002 Site Work. A reduced pressure principal backflow preventor with

isolation valves shall be provided in the supply line to each lawn irrigation system in order to protect the domestic water system in the building from the lawn irrigation system. Piping within 5-feet of the building shall be in accordance with Guide Specification 15400A.

2.6.13 Coffee Bar

Sinks in the Coffee Bar shall be small single bowl type and shall have a brushed stainless steel finish unless otherwise indicated. The faucets shall be gooseneck type, single lever mixing valve, with 8" centers. The faucets shall also include an aerator with 2.5 gallons per minute flow and a sprayer. The faucets shall be chrome.

2.6.13 Service Stop Isolation Valves

For normal maintenance or replacement, servicing stop isolation valves shall be installed in water connections to all installed new equipment and new fixtures. In addition, stop valves shall be provided to isolate portions of systems so as to not require shutdown of entire systems. Stop isolation valves for piping and equipment shall be shown on the drawings. Service stop isolation valves to faucets shall meet ANSI/NSF 61, section 9 lead leaching requirements.

2.6.14 Floor Drains

A floor drain shall be provided in all mechanical rooms, toilet rooms, janitors closets. To prevent traps from drying out, deep seal traps or trap primers shall be provided on all floor drains located in areas other than mechanical rooms.

2.6.15 Cleanouts

On straight runs of pipe, cleanouts shall be provided at not more than 50 feet apart. Cleanouts shall be provided at each change of direction of pipe and shall be provided at the base of all storm, soil, waste, and vent stacks.

2.6.16 Plumbing Vents

Where feasible, combine circuit vents in a concealed space to a main vent through the roof in lieu of an excessive number of individual vents through the roof. All vent lines through roof shall be 4 inch and terminate a minimum of 6 inches above finished roof. Where vents connect to horizontal soil or waste lines, the vent shall be taken off so that the invert of the vent pipe is at or above the centerline of the horizontal soil or waste pipe.

2.6.17 Duct Drainage

Outside air intake louvers and louvered penthouses shall be ducted and shall have provisions to dispose of melted snow and wind-blown rain which enters through the louvers. The duct seams shall be sealed watertight (soldering or brazing is not required) and a drain provided at the duct low point. The drain shall be routed to a floor drain. Duct access doors shall be provided near the louvers.

2.6.18 Domestic Hot-Water

Domestic water heaters shall be located in the mechanical room and

adequately sized to deliver 140°F water. Heaters shall be gas fired with a combined water storage tank. The capacity of the water heaters shall be adequate to meet the peak hot water requirements of the facility and shall be designed in accordance with Chapter 48, Service Water Heating, of the 1999 ASHRAE HVAC Applications Manual. An inlet water temperature of 39.2°F shall be used for sizing the water heater. Minimum efficiency shall be 80 percent for gas-fired type. Water storage temperature shall be minimum 131°F to prevent bacterial growth within the tank.

Alternative: Consider whether it is lower Life Cycle Cost to provide multiple small point of service water heaters at bathroom sinks, restroom sinks, toilets sinks, coffee bars, and breakroom sinks versus a large domestic water heater tank in mechanical room with a recirculating pump.

2.6.18.1 Domestic Hot Water Re-circulation System

Domestic hot water recirculating pumps shall be provided for each water heater. Pump sizing shall be in accordance with simplified pump sizing method 1995 ASHRAE Applications Manual unless specific conditions warrant the need for more detailed calculations. The system shall continually circulate domestic hot water in order to insure that domestic hot water is available at each fixture without delay. The domestic hot water recirculating pumps shall be all bronze for long life. A clock or other automatic control will be installed on domestic hot water circulation pumps to permit operation only during periods of occupancy plus 30 minutes prior. An aquastat shall be installed to limit pump operation to periods when recirculation is required to maintain temperature of water in pipes.

2.6.19 Storm Drain System

Where required by the architectural drawings, roof drains, with auxiliary overflow drains, shall be provided at the low points of the roof. Storm water shall be routed through interior piping and routed directly to the facility storm system where required. Roof drains shall be designed for a maximum rainfall rate of a 100-year return with a 15-minute duration per Uniform Plumbing Code and shall be sized in accordance with the Uniform Plumbing Code. All elbows for the storm drainage and overflow drainage piping 10 inches and smaller shall have 90 degree short sweep elbows.

2.6.20 Cathodic Protection

Cathodic protection shall be provided for any new underground metallic piping, fittings, and valves except cast iron soil pipe. Design of cathodic protection system shall in accordance with Section 01007 ELECTRICAL REQUIREMENTS, paragraph entitled "Cathodic Protection".

2.7 EXTERIOR GAS DISTRIBUTION SYSTEMS

This Section contains instructions and engineering requirements relating to the design of the new exterior natural gas distribution system where required, including the building gas service lines and gas service regulator assemblies. The gas distribution systems shall be designed in accordance with ANSI Z223.1 and NFPA-54, and shall meet the requirements of Technical Specification 02556A GAS DISTRIBUTION SYSTEM; including ANSI B 31.8. Remove gas lines serving demolition buildings.

2.7.1 Service Lines

A new service line shall be provided. The point of connection shall be

provided with a shutoff plug valve, conveniently located outside of any traffic area and protected with a valve box.

a. This may necessitate a **base-wide shutdown** of the gas system. Coordinate shutdown with base. (See Paragraph 2.1.11, Utility Interruptions.)

b. Existing 6-inch gas line running South of the FY04 ADAL Mission Control Support Addition will be used for providing branch gas line. Tap into the existing line shall be a "hot tap" and the Base Fire Department shall be given 30 days advance notification of the date of the tap (see minimum service line sizing paragraph Service Line Sizing).

c. Service lines shall not be installed under or routed thru the facility. Except for piping located at the new gas meter/service regulator assemblies, no aboveground gas piping shall be exposed to view. The service line shall enter the buildings in an accessible location outside the mechanical room areas. The gas meter/service regulator assemblies shall be hidden from view to the greatest extent possible.

d. Service lines to buildings shall run parallel and/or perpendicular to the building lines, shall be buried at least 18 inch below the ground surface, shall not be laid in the same trench with other utilities, and shall be above other utilities whenever they cross. New gas lines shall not be laid under paved streets, parking lots, roads or in other locations subject to heavy traffic whenever practicably avoidable and economically feasible to locate elsewhere. Whenever it is necessary to locate gas lines in such locations, the lines shall be protected by suitable encasement or by burying to a depth to provide at least 5 feet of cover over the top of the pipe except that new gas lines shall be provided with encasement when laid under new or existing paved streets, and new parking lots.

e. All manholes, or valve boxes, of any nature within the project that do not conform to the new finish grade in either surfaced or unsurfaced areas shall be adjusted to the new finish grade. Where manholes, or valve boxes fall within a surfaced or unpaved roadway or parking, the existing frames and cover shall be removed and replaced with a heavy-duty frame and cover. The structure shall be adjusted as needed to fit the new conditions. All structures shall be of a type suitable for the intended use and shall conform to the requirements of the applicable section of these specifications

2.7.2 Service Line Sizing

The size of the service lines shall be sufficient to supply the demand without excessive pressure drop greater than 10 percent and shall not be less than 1 inch in size.

2.7.3 Service Line Materials

All new underground service lines shall be polyethylene and all aboveground lines steel.

2.7.4 Service Line Markers

New underground service lines shall be identified by a permanent on grade utilities marker which indicates the type of service and depth of burial.

Markers shall be located a maximum of 100 feet apart on straight runs and at every change in direction. Markers in high traffic areas shall be protected from physical damage. Markers shall consist of a stamped or engraved brass name plate embedded in concrete. Tracer wire shall be 18 gauge AWWG copper secured to piping at not more than 3 foot intervals.

2.7.5 Service Line Protection

New below grade lines shall be protected from physical damage by placing a continuous, detectable plastic ribbon in the trench such that any excavation will uncover the ribbon prior to reaching the line. When non-ferrous service lines are installed, a foil backed magnetic tape shall be installed above the pipe to permit locating with a metal detector.

2.7.6 Cathodic Protection

Cathodic protection shall be provided for any underground metallic piping and fittings required for the transition between the underground pipe and the aboveground metallic pipe. Design of cathodic protection system shall in accordance with Section 01007 ELECTRICAL REQUIREMENTS, paragraph entitled "Cathodic Protection".

2.7.7 Gas Meters

A new gas meter shall be provided as part of the new service regulator assembly serving the addition only. Meters shall be provided with a direct non-reset table, digital readout. Meters shall have a pulse switch initiator capable pulse output of operating up to speeds of 500 pulses per minute with no false pulses and shall require no field adjustments or 4-20 mA output. Initiators shall provide the maximum number of pulses up to 500 per minute that is obtainable from the manufacturer. It shall provide not less than one pulse per 100 cubic feet of gas. Meters shall be connected to EMCS. Meter is required in accordance with Air Force ETL 94-2. Repair existing gas meter pulse indicator serving existing facility in existing fire riser room.

2.8 INTERIOR GAS PIPING SYSTEMS

This Section contains instructions and engineering requirements relating to the design of new interior natural gas piping systems. Interior gas piping systems shall extend from the outlet of the gas service regulator/meter assembly to the point of connection of each gas utilization device. The aboveground gas piping system shall be steel designed in accordance with ANSI Z223.1 and NFPA 54 and shall meet the requirements of Technical Specification 15190A GAS PIPING.

2.8.1 Gas Piping

Piping shall be sized in accordance with NFPA 54 to supply the demand without excessive pressure drop between the point of delivery and the gas utilization equipment. Minimum interior gas pipe size shall be 3/4 inch. The calorific value of the natural gas to be used in calculations for sizing equipment and piping is 840 Btu/cubic foot. Gas piping shall be shown on the mechanical HVAC Drawings.

2.8.2 Equipment Connections

The final connection to gas equipment shall be made with rigid metallic pipe and fittings. Accessible gas shutoff valve and coupling are required

for each piece of gas equipment.

2.9 NOT USED

2.10 HYDRONIC HEATING SYSTEMS

Hydronic heating system shall be a forced-air/hot water system consisting of natural gas fired boilers, water distribution system, circulating pumps, and associated heating equipment. Heating media shall be a solution of 35 percent propylene glycol and 65 percent water (by volume). The heating system shall be capable of providing heat for the building air ventilation systems. The heating water piping system shall be used to circulate hot water to the heating equipment during the heating season. Piping shall utilize reverse-return configuration. The heating system designs shall meet the requirements of Technical Specification 15569 WATER AND STEAM HEATING; OIL, GAS OR BOTH; UP TO 20 MBTUH and, unless otherwise stated, shall comply with the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Handbooks and Terminology of HVAC&R guide. The heating system design shall include safeguards to protect against freezing damage. Hot water pipe velocities shall be sized to not exceed 5 feet per second.

2.10.1 Boilers

The hot water supply shall be heated to 180 °F and supplied by natural gas-fired, cast iron, fire-tube or water-tube type boilers rated for a pressure of 30 psig. (NOTE: Each boiler utilized, shall have 50% of capacity; the total boiler capacity shall add up to 100% of the total heating load) Unless noted otherwise, each boiler shall be provided with modulating, forced-draft burners and shall be interlocked with the hot water pumps' flow sensors to provide a continuous flow of hot water to the facility at outdoor temperatures below 75°F adjustable for boiler one and below 45°F for boiler two. The hot water system supply temperature to the space shall be automatically controlled by manufacturer's standard controls. The boilers shall be interlocked with the heating water circulating pumps, through the control system, such that the boilers' burner cannot fire unless flow is present through the boiler's piping system. The boilers shall have a minimum efficiency of 85 percent with low NOx. Boiler reset shall be 180°F @ 0°F & 150°F @ 72°F. The entire building hot water system, including all piping, equipment, and appurtenances, shall be filled with a solution of 35 percent propylene glycol and 65 percent water (by volume). This solution shall be added after all pressure testing and cleaning of piping systems has been satisfactorily completed and prior to testing and balancing of the systems. Required flow rate and head loss shall be corrected for glycol. This corrected flow rate shall be used in selecting all other heating equipment, i.e. heating coils.

If a high efficiency (condensing or pulse type) boiler is provided, to meet high efficiency requirements, the hot water shall be supplied at a lower temperature i.e.. 140°F and returned at 120°F. All heating coils, pumps, and hot water heating equipment shall be sized and selected for these temperatures to ensure all equipment is sized larger to take into account the lower return temperature upon which these boilers are normally selected.

a. The DDC shall sequence the boilers to provide the required capacity. It also, shall rotate the boilers for equal run time on a time clock schedule. The heating hot water temperature reset shall be accomplished by primary/secondary loop such that return temperatures to boilers are

maintained above 150 °F at all times to prevent moisture condensing by flue gasses. The primary loop to boilers shall allow full flow through operating boilers at all load times. Lead boiler shall run at temperatures below 60 °F.

1. Boiler Control

The lead boiler shall be energized in response to a system demand or the DDC. After an adjustable time delay, to allow the boiler firing sequence to elapse, the DDC shall begin modulating the lead burner upward from the ignition starting point at a rate proportional to the system temperature rate of change and gain setting. If the lead boiler should fail the lag boiler shall be energized. The lag boiler shall begin modulating at the ignition start point, after a time delay, and proceed according to system rate of change and gain setting. As the system temperature rises, DDCcontrol shall decrease the modulation of the lag boiler so as not to over shoot the set point.

2.10.1.1 Boiler Connections

Design of boiler connections and auxiliary equipment shall conform to the requirements of ASME Boiler Code.

2.10.1.2 Low-Water Cutoffs

Float-type safety water feeders with low water cutoffs shall be provided for the hot-water boilers.

2.10.1.3 Water Column Connections

Provide crosses at right-angle turns on water column connections to boiler.

2.10.1.4 Smoke Connection

Boiler flue stack connections shall be in accordance with NFPA 211. Also, see paragraph Vents and Stacks.

2.10.1.5 Boiler Flue Termination

The boiler flue shall extend up through the roof of the building. The flue shall be provided with a rain cap fitting.

2.10.1.6 Boiler Location

The boilers and all associated fuel burning equipment shall be located in mechanical room.

2.10.2 Heating Water Distribution Pumps

The heating water shall be circulated by two parallel base mounted, end-suction, centrifugal pumps with mechanical seals. Each pump shall be sized for 50 percent of the maximum required heating water flow and 100 percent of the maximum system head pressure. The pumps capacity shall be based on a 180 °F supply and 180°F return water. The pumps shall be non-overloading allowing the pump to operate at any point on its characteristic curve. Each pump shall be provided with a suction diffuser and shall be mounted on a 6-inch thick concrete housekeeping pad. Each pump shall be provided with a calibrated bronze balancing valve, check valve and shut-off valves. However, if using a pressure independent

control valve type system, the balancing valves would not be needed. Pumps shall run at on a demand from the system through the EMCS. If one pump should fail, the other stand-by pump shall start providing 50% of the full flow capacity. Pumps shall alternate starting and have run-time meters. Pump flow rate and head loss shall be corrected for glycol. This corrected flow rate shall be used in selecting all other equipment i.e. coils.

a. Pump Control

The boiler circulation pumps shall start and stop with their respective boilers. A flow switch in the heating water return line to each boiler in the production loop shall allow the boiler to fire, only after flow has been established through the boiler.

2.10.3 Expansion Tanks

A floor mounted bladder type is not allowed. A regular elevated, all metal expansion tank shall be provided in the heating hot water piping systems. The expansion tank's precharged pressure and acceptance volume shall be selected based on the design of the piping systems. The STRUCTURAL DESIGN ENGINEER shall be thoroughly consulted before hanging the tank from the structure.

2.10.4 Air Separation Tanks

The heating hot water piping systems shall be provided with an air separation tank. The air separator shall include an automatic air vent and make-up water system, consisting of a pressure reducing valve, strainer, reduced pressure type backflow preventor and isolation valves.

2.10.5 Water Treatment Systems

Provide a mixture of 35% propylene glycol and 65% water into the heating systems. Provide a shot feeder and automatic feeder (chemical feeder) at the heating water distribution pumps to allow introduction of chemicals into the system. Provide the chemical treatment necessary to protect the heating system's equipment from damage due to corrosion and freezing. The water treatment system shall be capable of feeding chemicals and bleeding the system to prevent corrosion and scale within the boiler(s) and piping distribution system. The water shall be treated to maintain the conditions recommended by the boiler manufacturer. Chemicals shall meet required federal, state, and local environmental regulations for the treatment of boilers and discharge to the sanitary sewer. The services of a company regularly engaged in the treatment of boilers shall be used to determine the correct chemicals and concentrations required for water treatment. The company shall maintain the chemical treatment and provide all chemicals required for a period of 1 year from the date of occupancy. Filming amines and proprietary chemicals shall not be used. The water treatment chemicals shall remain stable throughout the operating temperature range of the system and shall be compatible with pump seals and other elements of the system.

2.10.6 Air handling Unit Coils

a. Each air handling unit coil shall be provided with a pressure independent three-way control valve.

b. Leaving air temperatures for heating coils (except for preheat) shall be between 100 to 105 °F.

c. Coils shall be selected with no more than 500 fpm coil face velocity.

2.10.7 Variable Air Volume Box Reheat Coils

Each VAV Box shall be provided with a two or three-way control valve. Leaving air temperatures for reheat coils shall be a minimum of 104 °F at 40% of maximum air flow rate. Each VAV box shall be provided with a volume damper which allows only 40% of the maximum cooling air flow rate - when the box is in the reheat mode.

2.10.8 Piping

All piping shall be pitched up in the direction of flow, 1 inch in 40 feet shall be designed without pockets which would permit accumulation of air, and shall be provided with vents at high points and drains at low points.

2.10.8.1 Pipe Materials

All new heating water piping within the facility shall be black steel conforming to ASTM A53, Schedule 40 or copper.

2.10.8.2 Pipe Joints

Heating water pipe joints shall be of the following types:

a. Heating water piping installed within the facility shall utilize threaded joints or welded joints. Welded joints and fittings shall be used for joints 2-1/2 inch and larger. Copper pipe joints 2 1/2 inch and larger shall be brazed. Grooved mechanical joints shall not be used.

b. Connections to equipment shall utilize unions for pipe 2-inch and smaller and flanges for pipe 2-1/2 inch and larger.

2.10.8.3 Pipe Expansion

In runs of pipe 50 feet and longer, or in shorter runs where design deems it necessary, indicate size on project drawings the location of all anchors, bends, loops, and pipe guides to adequately limit and provide for pipe expansion. Do not use expansion joints in piping unless absolutely necessary and justified. Anchors and guides shall be indicated on the project drawings and detailed for installation in the building structure provided. The STRUCTURAL DESIGN ENGINEER shall be thoroughly in formed of all forces generated.

2.10.9 Vents and Stacks

Stacks shall be in accordance with NFPA 211. Generally all stacks shall be of the prefabricated type with individual stack provided for each appliance. Stacks are generally used for forced draft applications. Vents shall conform to UL 441 and be Type B. Vents are generally used for atmospheric burners only. Vents can be tied together to a main vent. Combined stacks shall not be used for appliances with power burners or draft fans. Stacks and vents cannot be tied together. Height of stacks and vents shall be as required by NFPA 54 and shall be provided with a rain cap.

2.10.10 Heating of Mechanical Equipment Rooms

The mechanical equipment rooms shall be provided with thermostatically controlled, hot-water, horizontal throw unit heaters to maintain the required space temperature. The unit heater airflow shall be directed toward the combustion air intake(s) in order to warm the combustion air.

2.10.11 Combustion Air

The mechanical equipment room shall be provided with combustion air louvers sized and located in accordance with NFPA 54. The combustion air louvers shall be provided without dampers and shall be separately ducted to within 12 inches (300 mm) of the mechanical room roof (in order to minimize the potential for piping freeze-up in the mechanical room due to combustion air intake).

2.10.12 Fintube

If fintube radiation is to be utilized, indicate on the drawings the mounting height from bottom of radiator cover to floor. Height shall be coordinated with installation of electrical outlets to prevent any interferences. Where necessary to clear electrical receptacles, fintube radiators shall be installed with the bottom of the radiator cover 16 inches above the floor, space permitting. Space allocation shall be carefully coordinated with architectural design where radiation is installed in toilet rooms. In administrative buildings, hot water fintube radiators shall be provided with individual room temperature control and shall be equipped with solid front, slotted, sloping top covers.

2.10.13 NOT USED

2.10.14 Unit Heaters

Thermostatically controlled, hot water unit heaters are permitted in mechanical rooms, electrical rooms, and storage areas. Unit heaters shall cycle on and off to maintain setpoint. Suspended ceiling cabinet unit heaters shall be provided near all Admin. area exits, with wall mounted thermostats located 60" above finished floor.

2.11 ELECTRIC RESISTANCE HEATING

The use of electric resistance heating is <u>not permitted</u> except to heat stairs.

2.12 COOLING SYSTEMS

These systems shall meet the requirements of Technical Specification 15700A UNITARY HEATING AND COOLING EQUIPMENT or 15702A COMPUTER ROOM AIR CONDITIONING UNITS and unless otherwise stated, shall comply with the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Handbooks and ASHRAE 15. If using a pressure independent control valve type system, balancing valves would not be needed.

a.
Coils shall be selected with no more than 500 FPM coil face velocity.

2.12.1 Refrigeration System.

Unit shall be provided with manufacturer's standard packaged controls. The unit shall be provided with at least four steps of capacity reduction. Refrigeration equipment provided shall have an ozone depletion factor of 0.0. HCFC-22 shall not be allowed. HCFC-22 alternatives shall be documented in the design analysis and catalog cuts provided for three manufacturer's before an alternate refrigerant equipment will be allowed.

2.12.2 NOT USED

2.12.3 Rooftop-Air handling Units

The heating, ventilating, and air conditioning (HVAC) system shall be designed to include factory constructed, packaged rooftop central air handling systems with supply fans, a heating section, and a cooling section, which may be a Direct Expansion (DX) coil served at 42°F. Each packaged air handler system shall be designed with a low-medium efficiency filter bank fitted with 30% efficiency filters. The respective air handling systems shall also be designed with a return air fan in the packaged air-handling unit.

The packaged air handling systems shall be designed for energy saving capabilities for variable air volume (VAV) schemes to permit air delivery reductions to serve only necessary building occupancies and daily use schedules, rather than being controlled to operate at a constant air flow on a continuous basis. Details of air handling system fan capacity reduction, including variable frequency drive (VFD) modulation, shall be provided for both the respective supply and return fans in each system.

Other non-centralized HVAC systems for areas such as communication or electrical rooms shall be designed following criteria defined by ASHRAE and specific guidelines included in this document. The existing Communications Room (Comm Room) shall be air conditioned. Contracting computer room requires air conditioning (possibly ceiling mounted) as backup if building AC fails or out of temperature limits."

For major "all air" HVAC systems, two air handling systems shall be designed to serve two major sectors of the building "first floor" and "second floor". The air delivery systems will serve terminal VAV units, each with auxiliary local fans, including generally "cooling only" capability to serve interior spaces and cooling plus heating zones at the perimeter area of each occupied level of the building plus the central addition lobby as specified herein.

a. General

Units shall be specifically designed for outdoor rooftop installation on a roof curb and be completely factory assembled and tested, internally wired, and fully charged with refrigerant, compressor oil and shipped in one piece. Units shall be available for direct expansion cooling with natural gas heating section. Cooling capacity shall be rated in accordance with ARI Standard 360. All units shall have a nameplate to aid in service.

b. Casing

Exterior panels shall have a minimum of 1.25-ounce zinc coating per square foot of galvanized steel and shall be painted with a slate grey air-dry finish durable enough to withstand a 1000- consecutive-hour salt spray application in accordance with standard ASTM B117. Access panels shall be provided access to filters and heating and cooling sections. Refrigeration components, supply air fan and compressor shall be accessible through

removable panels as standard. Double Wall Construction hinged access doors shall provide access to filters, return/exhaust air, heating and supply fan section.

c. Compressors
Compressor shall be scroll type. Scroll compressor shall include centrifugal oil pump, oil level sightglass and oil charging valve. Each compressor shall have crankcase heaters installed, properly sized to minimize the amount of liquid refrigerant present in the oil sump during off cycles. Discharge and liquid line service valves are standard on each refrigerant circuit.

d. Evaporator Coil
Internally enhanced copper tubing of ½- inch O.D. shall be mechanically bonded to heavy-duty aluminum fins of configurable design. All coils shall be equipped with thermal expansion valves and factory pressure and leak tested at 300 psi.

e. Condenser Coil
Configurable aluminum fin or configured copper fin secondary surface shall be mechanically bonded to primary surface of 3/8-inch O.D. copper tubing for extra corrosion resistance. Sub-cooling circuit(s) shall be provided as standard. All coils shall be factory tested at 450 psig air pressure and vacuum dehydrated. Condenser coil shall be provided with hail guards.

f. Condenser Fans and Motors
All condenser fans shall be vertical discharge, direct drive fans, statically balanced, with steel blades and zinc plated steel hubs. Condenser fan motors shall be three-phase motors with permanently lubricated ball bearings; built-in current and thermal overload protection and weather-tight slingers over motor bearings.

g. Gas Heating Burner

Gas-fired units shall be completely assembled and have a wired gas fired heating system integral within unit. Units shall be UL or CSA approved specifically for outdoor applications downstream from refrigerant cooling coils. All gas piping shall be threaded connection with a pipe cap provided. Gas supply connection shall be provided through the side or bottom of unit. All units shall be fire tested prior to shipment.

a) Heat Exchanger shall be tubular two pass design with stainless steel secondary heat exchanger surfaces. Gasketed cleanout plate shall be provided for cleaning of tubes/turbulators. Heat exchanger shall be factory pressure and leak tested.

b) Burner shall be a stainless steel industrial type with an air proving switch to prevent burner operation if the burner is open for maintenance or inspection. Ceramic cone shall be provided to shape the flame to prevent impingement on sides of heat exchanger drum. Burner assembly shall house ignition and monitoring electrode.

c) Combustion Blower shall be centrifugal type fan to provide air required for combustion. Fan motor shall have built-in thermal overload protection.

d) Gas Safety Controls shall include electronic flame safety controls to require proving of combustion air prior to ignition sequence which shall include a 60 second pre-purge cycle. Direct spark ignition shall be provided on 235 and 350 MBh heat exchangers and pilot ignition shall be provided on

500, 850 and 1000 MBh heat exchanger units. Sixty second delay shall be provided between first and second stage gas valve operation on two-stage heaters. Continuous electronic flame supervision shall be provided as standard.

e) Full Modulation Gas Heaters shall be made from grades of stainless steel suitable for condensing situations. The heater shall have a turn down ratio of at least 4 to 1.

h. Filters General
Filter shall mount integral within unit and be accessible by hinged access panels. Filter shall be two-inch throwaway filter type.

i. Supply and Return Fan
All supply fans shall have two double inlet, forward-curved fans mounted on a common shaft with fixed sheave drive and shall be dynamically balanced and tested in factory. Supply fan shall be test run in unit as part of unit test and unit shall reach rated rpm before the fan shaft passes through first critical speed. Fan shaft shall be mounted on two grease lubricated ball bearings designed for 200,000 hours average life. Entire assembly shall be completely isolated from unit and fan.

Supply Fan shall be equipped with Variable Frequency Drive (VFD, inverter). The VFD shall be provided with a metal enclosure and shall be factory-mounted, wired and tested. The VFD shall control motor speed to maintain set point static pressure control at the supply duct sensor tube location. The supply fan drive shall be field-adjustable to maintain supply duct static pressure set point from 0.0-in. wg to 5-in. wg

k. Controls
Unit shall be completely factory wired with necessary control and contactor pressure lugs or terminal block for power wiring. Units shall provide an internal location for a non-fused disconnect with external handle for safety. Unit mounted microprocessor controls shall provide anti-short cycle timing for compressors to provide a high level of machine protection.

l. Unit Controller
DDC microprocessor controls shall be provided to control all unit functions. The control system shall be suitable to VAV applications. The controls shall be factory-installed and mounted in the main control panel. The unit controls shall be used as part of a building management system.

The unit shall be equipped with a complete microprocessor control system. This system shall consist of temperature and pressure sensors, printed circuit boards (modules), and a unit mounted Human Interface Panel. Modules (boards) shall be individually replaceable for ease of service.

All microprocessors, boards and sensors shall be factory mounted, wired and tested. The modules (boards) shall be protected to prevent RFI and voltage transients from affecting the board's circuits. All field wiring shall be terminated at separate, clearly marked terminal strip.

m. Economizer Control with Comparative Enthalpy
Used with the fresh air economizer, two enthalpy sensors are provided to compare total heat content of the indoor air and outdoor air to determine the most efficient air source when economizing.

n. Roof Mounting Curb
Roof mounting curb shall be provided and manufactured to meet the National

Roofing Contractors criteria. Supply/return air opening gasketing shall be provided.

o.Not Used.

p. Return and Supply Air Smoke Detectors:
The smoke detector shall send input to the controller to shut down the unit in case smoke is detected.

q. Hot Gas Bypass:
Unit shall be factory equipped with hot gas bypass valve, shutoff valve, and tubing to maintain capacity control at minimal cooling loads.

r. Refrigerant Components:
Unit shall be equipped with dual refrigerant circuits, each containing:

1. Liquid line service valve.
2. Filter drier.
3. Moisture indicating sight glass.
4. Thermostatic expansion valve.
5. Fusible plug.

2.13 AIR SUPPLY AND DISTRIBUTION, AND VENTILATION AND EXHAUST SYSTEMS

This Section contains instructions and engineering requirements relating to the design of the new HVAC supply and distribution systems. The design of all systems shall comply with the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Handbooks, to the requirements of NFPA Standards Nos. 90A and shall meet the requirements of Technical Specifications 15700 UNITARY HEATING AND COOLING SYSTEMS and 15895A AIR SUPPLY, DISTRIBUTION, VENTILATION, AND EXHAUST SYSTEMS. Mechanical ventilation and ventilation requirements for occupants shall provide the minimum outdoor air supply rates for occupants in heated or air-conditioned facilities, or both, required by ASHRAE Ventilation Standard 62. Construct and protect electronic equipment installations in accordance with NFPA 75, Protection of Electronic Computer/Data Processing Equipment

a. Air distribution systems shall be designed to prevent infiltration at the anticipated prevailing wind.

b. Equipment capacities and flows shall be corrected for altitude on drawings (schedules).

c. Noise Criteria unless otherwise indicated is as follows:

d. Noise and Room Criteria (see ASHRAE 1999 APPLICATIONS) unless otherwise indicated is as follows:

1) Mechanical Equipment rooms = 60 NC (max)
2) Administrative/Office areas = 35 RC(N)(max)
3) Lobby/Toilets/Corridors = 45 RC(N)(max)
4) Private Offices = 35 RC(N)

2.13.1 System Designs

All spaces in the facility except for janitor closets and interior storage shall be heated and cooled by mechanical ventilation or air-conditioning as

indicated.

a. Vestibules, stairs, etc, shall be heated for freeze protection of sprinklers only (or Mechanical design shall be coordinated with the Fire Sprinkler Installation for freeze protection). Heating shall be provided by matching units provided in the existing facility.

b. Ventilation in restrooms, storage, and janitors shall be for odor exhaust only and shall be interlocked with AHU relief dampers. Building shall be maintained at a positive pressure when operating. Excess outside air shall first be relieved through areas generating odors (such as toilet rooms) then through relief louvers.

c. Unheated or air conditioned closets and storage areas in air-conditioned facilities shall be provided either directly with air conditioned air or provided with exhaust to transfer conditioned air to adjacent spaces.

2.13.2 Not Used

2.13.3 Filtration

Indoor air quality is of primary concern. The combined supply air, including return and outside air, shall be filtered by 30 percent efficient filter as determined by the dust spot test specified in ASHRAE Standard 52.1 and particulate removal efficiency in ASHRAE Standard 52.2.

2.13.4 Ductwork

a. All duct shall be low pressure and built to low pressure and Class C seal requirements. Offices with common exposures or functions shall be zoned together. All ductwork except VAV system which shall be sized by the static regain method shall be sized using the equal friction method with 0.07 inches of water column per 100 feet for supply and return ducts and 0.1 inches of water column per 100 feet for exhaust ducts. Constant Volume duct velocity shall never exceed 1,400 fpm. Ductwork shall be metal except for fan connections. Ductwork shall typically be run above the ceiling. There shall be 15 feet of return air duct to an air handling unit provided with acoustical liner. This is the minimum amount of return air duct that will be accepted for each air handling unit. Flexible ductwork shall never exceed 6 feet in length. Duct Construction; all ductwork shall be constructed from galvanized sheetmetal, in accordance with SMACNA Guidelines.

2.13.5 Ceiling Mounted Supply Diffusers

Ceiling diffusers shall be suitable for use in a lay-in ceiling or a gypsum board ceiling and shall be located as necessary. All new diffusers shall be provided with a 4-way adjustable discharge pattern; standard diffusers with fixed discharge patterns are <u>not permitted</u>. Diffusers shall be sized to distribute the required quantity of air evenly over the space intended without causing noticeable drafts, air movement faster than 50 fpm in the occupied zone, or causing dead spots anywhere in the conditioned space. Maximum velocity of 500 fpm with a NC of 30 maximum. Diffusers in lay-in ceilings shall have 24 inch x 24 inch panels.

2.13.6 Ceiling Mounted Return Grilles

Ceiling return air grilles, suitable for use in lay-in ceilings or gypsum board ceilings, shall be located as necessary. The maximum size of new return grilles shall be 24 inch x 24 inch, minimum size shall be 24 inch x 12 inch. Return grilles shall not be located close to outdoor openings or in locations where bypassing of supply air may occur. Recommended return air velocities based on free area of the opening shall be 500 fpm.

2.13.7 Supply and Exhaust Fans

All fans shall be centrifugal type and connected directly to weather-proof louvers using ductwork. Low leakage motorized dampers shall be provided. Fans larger than 2000 cfm in capacity shall be provided with V-belt drives. Care shall be taken to ensure that the noise level generated by exhaust fans and associated relief louvers is not transmitted to the exterior of the building. In-line fans located outside the main mechanical and electrical areas shall be the provided with a manufacturers standard acoustical enclosure to inhibit noise transmission to the adjoining occupied spaces. Sone value of fans measured 5 feet from fan inlet shall be less than 30 sones outside the mechanical equipment room. Direct drive fans shall be provided with variable speed controllers.

2.13.8 Outdoor Intakes and Exhausts

New outdoor air intakes shall be located in areas where potential for air contamination is lowest such as away from overhead doors. Maximize the distance between intakes and exhausts by maintaining a minimum distance of 30 feet between intakes and exhausts and 50 feet between intakes and toilet, janitor room, etc. Motorized low-leakage damper with blade and jamb seals, shall be provided at all outside air intake and exhausts. If feasible, locate intakes and exhausts on different building faces. Maximum velocity through net area of air intakes shall be limited to 500 fpm. Required flow rates shall be corrected for altitude.

2.13.9 Special Requirements

2.13.9.1 Toilet Rooms

The rest rooms shall be exhausted at the rate of 50 cfm per water closet or urinal. The required make-up air for the exhaust system shall be provided by supply air for the heating/cooling loads and through transfer ducts.

2.13.9.2 Janitors Closet

The janitor closet shall be exhausted at the rate of 2 cfm per square foot e. The required make-up air for the exhaust system shall be provided through transfer ducts.

2.13.9.3 Mechanical and Electrical Equipment Rooms

a. The mechanical and electrical equipment rooms shall each be ventilated and cooled with outside air by thermostatically controlled fans; set to operate when the respective space temperature exceeds 85°F. Size of fan shall be based on removal of heat generated in room so inside temperature shall not exceed 98°F at design ambient temperature, but the system design shall not be less than 10 air changes per hour. Sone values of fans measured 5 feet from fan inlet shall be less than 20 Sones.

b. The mechanical equipment rooms containing gas burning equipment shall be provided with combustion air louvers sized and located in accordance with NFPA 54. The combustion air louvers shall be provided without dampers and shall be ducted down to within 12 inches of the mechanical room finished floor and ducted up to within 12 inches of roof level in order to minimize the potential for piping freeze-up in the mechanical room due to combustion air intake.

2.13.10 CRAC UNITS

CRAC units serving contract computer room as a backup shall be provided to handle process loads associated with electronic equipment and computers within computer rooms.

1). Areas containing electronic equipment shall be provided with CRAC unit(s) system(s). The System(s) selected shall be capable of providing adequate temperature control and air movement for loads as they change during the occupied periods. Enough zoned control shall be provided to ensure comfort and equipment requirements are being met in different portions of the space. Provide condensate pans, piped to drain and condensate pumps where necessary.

2). CRAC units shall be provided with a unit mounted microprocessor control panel, to provide monitoring, control, and alarm for high/low temperature, high/low humidity, change filter, and loss of air.

2.14 BUILDING TEMPERATURE CONTROL SYSTEMS

This paragraph contains instructions and engineering requirements for the design of the new addition temperature control systems required for the operation of the addition mechanical systems. The temperature controls shall be by Johnson Controls and shall be fully integrated and connected to the Base Johnson Controls Building Automation EMCS system. DDC/EMCS system shall be supplied by the Contractor under this Contract and coordinated with Johnson Controls. All HVAC functions in the DDC system shall be controlled and monitored by the EMCS. The design of the control systems for the HVAC equipment shall be in accordance with Technical Specification 15951 DIRECT DIGITAL CONTROL FOR HVAC, revised as herein indicated. Johnson Controls shall re-program the head-end computer (in Building 1324) to accommodate the ADAL Mission Control Support Addition Facility and provide equipment and services, peer-peer communications including software database programming, graphics generation, calibration, and end-to-end testing of the head-end computer and this project's remote DDC panels, DTC's, and temperature control panels. EMCS fiber shall be extended in accordance with Section 01007 ELECTRICAL REQUIREMENTS. The control system shall be designed to provide continuous and automatic control of all HVAC equipment. Where equipment is provided with a packaged control system, such as in the case of boilers and chillers, the building control systems shall interface with the equipment's packaged control systems. The temperature control panels shall be located in the mechanical room(s). The number of control panels shall be dictated by the number of and types of equipment in the final design. This type of control system allows the EMCS operator to easily adjust setpoint, operating times and other system parameters, if and when necessary, once the building has been occupied.

a. Notwithstanding Section 00700 Contract Clauses FAR 52.236-5, Material and Workmanship, for the DDC/EMCS shall be manufactured by Johnson Controls

Inc. in order that the systems installed is Johnson Controls Inc. and fully integrated and connected to the Base Johnson Controls Inc. METASYS EMCS system. No other product will be acceptable. The competition Advocate authorizes sole source procurement.

2.14.1 General DDC Requirements

All mechanical systems and equipment, shall be controlled by local direct digital control (DDC) panel(s) located in the facility's Mechanical room(s). The DDC panel(s) shall operate in a stand alone fashion. Design shall be provided using Technical Specification Section 15951 DIRECT DIGITAL CONTROL FOR HVAC. To facilitate maintenance and to allow manual starting and stopping of equipment by maintenance personnel, a hard-wired Hand-Off-Automatic (HOA) control switch shall be provided for each new major piece of equipment (air handling unit, exhaust fan, etc.) in order to override the automatic DDC start and stop functions. Coordination with and input from the Base, and existing facility User and Johnson Controls, Inc. has been required in order to ensure that the appropriate system points are monitored.

a. Fire alarm condition on any fire alarm circuit shall automatically initiate the deactivation of the air handling units throughout the building.

b. All computing devices, shall be as defined in FCC Rules and Regulations FCC Part 15, and shall be certified to comply with the requirements for Class A computing devices and labeled as set forth in FCC Rules and Regulations FCC Part 15.

c. Temperature Control Contractor Experience - The temperature control Contractor shall have a working knowledge of the DDC system (Johnson Controls, Inc. and experience installing these systems. The Contractor shall provide for approval the names and qualification of supervisory personnel (i.e.. Project Manager and /or Superintendent) that will be used on this project. The Contractor shall also provide a list of references to be contacted from recent projects on which the proposed personnel performed similar duties. Approval shall be based on previous experience with the DDC system (Johnson Controls, Inc. to be installed, qualifications and demonstrated ability of proposed personnel to manage resources in an efficient and effective manner. Experience and supervisory personnel qualifications must be submitted and approved before submittal of any technical data.

d. Emergency Service During Warranty - The Government will initiate service calls when the installed DDC/EMCS is not functioning properly. Qualified personnel shall be available to provide service to the complete DDC/EMCS installed under this project. Qualified personnel shall be defined as a factory trained journeyman in the brand of control system provided, this level of training shall be considered a minimum. The Government shall be furnished with a telephone number where the service supervisor can be reached at all times. Service personnel shall be at the site within 8 hours after receiving a request for service. The control system shall be restored to proper operating condition within 3 calendar days after receiving a request for service.

e. Software - The Contractor shall provide all software updates and verify operation in the system. These updates shall be accomplished in a timely manner, fully coordinated with base operators, and shall be incorporated into the operations and maintenance manuals, and software

documentation provided as submittals in section 15951A. There shall be at least one scheduled update near the end of the first year's warranty period, at which time the Contractor shall install and validate the latest released version of the Contractor's software.

f. All utility meters shall be provided to be connected to the base EMCS system to allow the necessary monitoring.

g. Fuses shall not be used for surge protection. Provide transient voltage surge suppression (TVSS).

h. Scheduled inspections shall be at the beginning of construction.

i. System descriptions and analyses submittal shall indicate how new system will interface with the existing Base EMCS as manufactured by Johnson Controls, Inc.

2.14.2 Existing Johnson Controls METYSYS EMCS Interface

DDC PANEL (REMOTE TERMINAL UNIT)The control system serving the addition shall be a system expansion of, and sources to match, the Base EMCS. All services, materials, equipment, hardware, and software necessary to install the EMCS system shall be provided. All the new control panels and input and output control points/devices shall be fully integrated into the system.

a. Operator Access: Access to the system expansion by the Base EMCS operators shall be seamless via the work stations on the EMCS LAN and the expansion connections to it. That is, it shall require no different hardware or software or operation steps to access than any of the existing control panels on the system. System expansion access shall allow the EMCS operator to perform the following real-time functions on the new equipment using the same work stations and software:

1) Display the status of all inputs.

2) Manually display of changes to the status of all outputs.

3) Display and adjust all control loop and all other permanent (battery-backed RAM and/or EEPROM-based) database parameters.

b. Graphic Screens: Provide and integrate graphic display screen files into the system, each consisting of a schematic diagram of a mechanical system with real-time statuses of new inputs and outputs superimposed upon the schematic diagram. In conjunction with software base packages, the screens shall allow an operator to not only view, but also command changes to the statuses of all outputs.

c. Alarm Monitoring: Alarm monitoring shall be provided for all major pieces of equipment. Indication of failure shall alarm at the EMCS Operators Work station. The maximum allowable time for the EMCS to display an alarm condition is 10 seconds starting from the time the alarm condition first exists. The maximum allowable time for equipment to respond to manual EMCS commands is 10 seconds starting from the time the command is initiated at the work station. The system expansion shall not impede the capabilities of the DDC system to meet these requirements. Alarm monitoring shall include, but not limited to the following alarm indications:

High and low temperature
High and low suction pressure
Loss of power
Hot gases temperature
Freeze detection
Summary alarm
Start/stop actual status different from commanded state

1) Each start/stop is to be paired with a true status input. EMCS alarms shall be generated whenever the status input state varies (longer than some adjustable time delay) from the corresponding output's matching state.

2.14.2.1 Controllers

All modulating mechanical processes (e.g., temperature, pressure, flow control) shall be controlled directly by the local DDC control panel. Except for safety and protection functions, software logic shall be used in lieu of relay logic. The contacts of safety and protection function instruments shall be hardwired in series with the common side of each equipment's HOA switch, and their proper operation shall not depend in any way upon the DDC.

2.14.2.2 Digital Controllers

Digital controller blocks or points within the control panels shall utilize a full proportional - integral - derivative algorithm.

2.14.2.3 Stand-Alone Operation

The local control panels shall be fully capable of stand-alone operation on a continuous basis. All programs, including those based upon real-time clock or calendar events, shall reside in the local DDC panel.

2.14.3 Input/Output Devices

The control system shall utilize off-the-shelf input and output instruments (e.g., RTD sensors, actuators, relays) which are commercially available from third party vendors and who are independent from the DDC panel manufacturers.

2.14.4 Analog Sensors, Digital inputs & Digital outputs

All sensing devices shall be capable of removal from the system without disruption of service to the system in which they are installed. Sensors provided shall include, but not limited to, the following:

Supply air and return air temperature; Air Flow Measuring Stations (to be shown on mechanical HVAC drawings)
Boiler Inlet Temperature
Boiler Outlet Temperature
Boiler Fuel Flow
Boiler Water Reset
Heating Water Flow
Enthalpy Sensors
Space temperature(s) (to be shown on mechanical HVAC drawings)
Outside air temperature sensors (to be shown on HVAC mechanical drawings)
Mixed air temperature sensors (to be shown on HVAC mechanical

drawings)
Discharge air temperature sensors
Heating Coil Controls
Direct Expansion (DX) Coil Controls
Hot Water Pump(s) Status
Hot Water Pump(s) start/stop
Air handling unit(s) status
Air handling unit(s) start/stop
Return Air Fan Status
Return Air Fan Start/Stop
Kilowatt meter
Gas meter
Water meter
Exterior Lighting Control on/off through the lighting contactors and DTC

Pitot-type sensing elements may be installed for local instrumentation used for testing and balancing purposes only.

2.14.5 Cable and Wiring

Cable and wire for the DDC system shall be separate from the distribution system serving any other system. All cable and wiring shall be installed in conduit. The data transmission media (DTM) shall be provided by the Contractor. The Contractor shall provide data transmission media (DTM). DTM shall be as specified and extended as on the electrical drawings in accordance with Section 01007 ELECTRICAL REQUIREMENTS.

2.14.6 Control Valves

Sizing of control valves shall take into account upstream and downstream fittings and shall be in accordance with Instrument Society of America standard ISA S75.01-1985.

2.14.7 Variable Air Volume Boxes

Variable air volume (VAV) boxes shall be fitted with DDC controllers and velocity sensors compatible with the existing EMCS. VAV box temperature sensors shall be located atop an associated return grille and be provided with 30 feet of sensor wire for future relocations. Where VAV air handling units with VAV boxes are provided, flow monitoring stations shall be provided to ensure proper indoor air quality when operating at minimum supply air flows.

2.14.8 Damper Actuators

All main mechanical equipment; AHU's, etc., shall be provided with 4-20 MA operated damper actuators. All minor/remote equipment shall be provided with 4-20 MA operated dampers operators.

2.14.9 Valve Actuators

All valves shall be provided with 4-20 mA-operated valve actuators.

2.14.10 HVAC Control Drawings

HVAC control drawings, for both the 60 percent and Final submittals, shall be in accordance with SECTION 01336 - 60 PERCENT DESIGN REQUIREMENTS, & SECTION 01338 - 100 PERCENT DESIGN REQUIREMENTS. Control drawings for each

facility shall include a system schematic section, an elementary (ladder) diagram, a detailed sequence of control, a list of required components with a brief description of each component, a control panel detail, legend and schedules, a listing of input and output points and a matrix showing the point type, alarms and applications programs associated with each of the input or output points. EMCS details and points to be monitored shall be detailed on the contract drawings and follow the conventions as set forth in TM 5-815-2. System I/O summaries shall be detailed. Provide a list of active control programs, including full program text for custom programs.

2.14.11 Control Schematic

The control schematic shall be a schematic representation of the HVAC system and the associated control equipment. The control schematic shall be drawn to a large scale to allow for ample space to indicate any necessary performance parameters such as setpoint, etc. The control schematic shall be cross referenced to the elementary diagram and the control panel detail by numbered terminal points. Each component shall be identified by a unique alpha-numeric designator such as S1 for sensor number 1. This provides a means of cross referencing to the description of components and the sequence of control. All major control items relative to the system shall be shown. This may include, but shall not be limited to:

Supply Fans

Filters

Cooling Coils

Heating Coils

Pressure Sensors/Switches

Flow Sensors/Switches

Freezestats with manual reset

Smoke Detectors with connection to the FACP

Temperature Sensors

Dampers and Damper Actuators

VAV Boxes

Fan Coils

2.14.12 Elementary Diagram

An elementary diagram or diagrams shall be provided showing the wiring of the control system devices. It shall be drawn to a large scale for easy reading and to allow space for indicting performance parameters. The elementary diagram shall be cross referenced to the control schematic and the control panel detail through the use of numbered terminal points.

2.14.13 Sequence of Control

The sequence of control is a written statement of the operation of the system. It should be as detailed and complete as possible and it should refer to individual components by their alpha-numeric designator whenever possible. The sequence shall break the overall system into sub-systems, such as supply fan control, mixed air control, heating control, cooling control, etc., and shall describe the operation of each of the subsystems. The sequence of control shall also describe the operation of all safety devices such as smoke detectors or freezestats, fire alarm interlock and shall describe the operation of the system in both the occupied, warm-up and unoccupied modes.

2.14.14 Description of Components

The description of components shall provide a generic description of the performance of each component. The components shall be referred to by their alpha-numeric designator.

2.14.15 Control Panel Detail

The control panel detail shall show the intended mounting location of any devices that are to be located in the control panel or on the front face of the panel. All field sensors and controls will be connected to data terminal cabinets to provide ease of diagnosis and repair of the system components. DTC panels shall be as specified in section 15951A with installed spares plus 25 percent expansion of each type of I/O function being provided. Control panels and DTC panels shall be shown on mechanical drawings.

2.14.16 Legends and Schedules

The legend shall provide a definition of all symbols used in the control drawings. Schedules shall provide all necessary information to clarify the operation of the components or the overall system.

2.14.17 System Checklists and Startup Instructions

The designer shall develop Pre-commissioning Test Checklists, Functional Performance Test Checklists, and Startup Instructions for each system and item of equipment controlled by the temperature control system and shall include them in the temperature controls Specification. Each system and item of equipment shall have its own separate Checklist and Startup Instructions. The Checklists and Startup Instructions shall be tailored to each individual component of the respective system or item of equipment and shall use the terminology and nomenclature used in the drawings and specification.

2.15 TESTING, ADJUSTING, AND BALANCING OF HVAC SYSTEMS

This Section contains instructions and engineering requirements relating to the testing, adjusting, and balancing requirements of new mechanical HVAC systems. The work required by this section shall be complete, including all test and inspection reports, before starting the EMCS Field Test. Testing, adjusting, and balancing shall be meet the requirements of Technical Specification 15990A TESTING, ADJUSTING AND BALANCING OF HVAC SYSTEMS.

2.15.1 Balancing Firms Qualifications

Testing, Adjusting, and Balancing (TAB) shall be performed by an independent firm using certified technicians under the direct supervision of a certified technician. Technicians shall be certified by the National Environmental Balancing Bureau (NEBB) or the Associated Air Balance Council (AABC). The firm shall select AABC MN-1, or NEBB-01 as the standard for providing testing, adjusting and balancing of the mechanical systems. Air handling units' filters shall be artificially loaded during testing and balancing operations. Air handling unit(s) air flow shall be set for maximum with filters fully loaded.

a. TAB can be performed only after each system is complete, including portions of the existing building systems affected by the rennovation, including installation and operation of controls, and all aspects of the facility that have any bearing on the HVAC systems, including installation of ceilings, walls, windows, doors, and partitions, are complete. All items such as ductwork and piping parts, terminal connections, etc, necessary to perform TAB shall be complete during the Systems Readiness Check.

2.16 COMMISSIONING OF HVAC SYSTEMS

This section contains instructions and engineering information relating to the commissioning of HVAC systems, including the pre-commissioning checks and functional performance tests. Commissioning shall begin only after all work required in paragraphs entitled "Testing, Adjusting, and Balancing of HVAC Systems" and the "Temperature Controls System" have been successfully completed, and all test and inspection reports and operation and maintenance manuals required in other Section's specifications have been submitted and approved. The commissioning of HVAC systems shall meet the requirements of Technical Specification 15995A COMMISSIONING OF HVAC.

a. Pre-commissioning Checks shall be performed for each item of mechanical equipment. Deficiencies discovered during these checks shall be corrected and retested prior to start of the Functional Performance Tests.

b. Functional Performance Tests shall be performed for each equipment item. Functional performance tests shall begin only after all pre-commissioning checks have been successfully completed.

c. Commissioning of HVAC systems shall begin only after all work required in related sections, including Sections HVAC Control Systems and TAB of HVAC Systems has been successfully completed. All test and inspection reports and O&M manuals shall be submitted and approved before commissioning is conducted.

2.17 NOT USED

2.18 TECHNICAL SPECIFICATIONS

Government provided (UFGS) technical guide specifications (available to the Design-Build Contractor as indicated in Section 01332, DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES) shall be completely edited and fully coordinated with the drawings to accurately and clearly identify the product and installation requirements for the facility. The specifications shall be edited in accordance with the designer notes associated with each specification and with the Specification Requirements (Division 01 General Requirement Specifications). In case of a conflict, the criteria found in

the Specification Requirements (Division 01 General Requirement Specifications) shall take precedence. The provided specifications define the minimum requirements for items of equipment, materials, installation, training, operating and maintenance instructions, O&M manuals and testing that shall be provided for the facility. Where items of equipment, materials, installation, training, operating and maintenance instructions, O&M manuals or testing requirements are not covered in the provided specifications, special Sections within each guide specification(s) shall be prepared to cover those subjects. Specific items of equipment identified in the provided specifications but not required for the facility shall be edited out.

2.19 ENERGY USE BUDGET (EUB) COMPLIANCE CHECK

Design energy Usage (DEU) estimates shall be calculated for the new building to verify compliance with EUB in accordance with 10 CFR, Subpart A, Part 435, ASHRAE/IESNA 90.1; and the Energy Policy Act of 1992. Energy Usage Budget shall be done without process loads. Values indicated below shall be the maximum EUB target allowed. DEU shall be less than Energy Usage (EUB) target values indicated in Table I.

Table I
Energy Usage Budget Target For This Project.

Building	Type	Region	EUB Target	Hours per Day /Days per Week
Administration	A1	6	45,000 Btuh/square feet/year	10/5

If another distinct function or facility type is being performed in an area which comprises 10 percent or more of the building's gross floor area, the EUB will be normalized by using the following formula:

EUB = EUB21(Area 1/Area T)+ EUB2 (Area 2/Area T) +..+ EUBN (Area N/Area T) where EUB is for the mixed use building, EUBN is for one of the distinct functional areas, Area N is the gross floor area devoted to the function N, and Area T is the total gross floor area of the building.

Building EUB shall be provided using a computer-based program.

2.19.1 Computer Simulation

The Energy Usage Budgets shall be calculated using a computer simulation. Method used must take into account the constantly changing temperatures, sun loads, etc., through a year's operation. Use of the program "BLAST" is encouraged. If "BLAST" is used, the "REVIEW SUMMARY REPORT" shall be included in the output report. Any program other than Building Load Analysis and Systems Thermodynamics "BLAST","TRANE TRACE latest version",Carriers' latest version, DOE 2.1.E or BESA (Canada) requires prior approval for use. Request for use must demonstrate compliance with the following:

2.19.1.1 Acceptable Engineering Procedures

The energy analysis and building simulation will use a computer program which is based on acceptable engineering procedures. Load calculations and the systems simulation will be on an hourly basis for 12 to 365 days. Although hourly data for 365 days is preferred, a minimum of 12 model days

(a statistically average day per month) is acceptable. If calculations are based on less than 365 days, the weather data selected for these days will be statistically derived.

2.19.1.2 Capable of Change

The computer program must be capable of changing the various cooling and heating loads and the thermostat settings to simulate building operations and to simulate dead band and deck/coil reset control strategies.

2.19.1.3 Cooling and Heating Loads Influencing the Building Design

The program must consider all cooling and heating loads which influence the building design. These include solar, outside air, people, lighting, equipment, etc., as well as taking into account the thermal time lag of materials.

2.19.1.4 Alternatives

Some of the alternatives that the program should be capable of analyzing include:

a. Orientation of Building.

b. Wall and roof construction and insulation.

c. Dimensions of Building.

d. Window area, solar shielding, tinted, and single or multiple glazed windows.

e. Types of fuel.

f. Central heating versus individual systems.

g. Type of equipment.

h. Type of mechanical systems, e.g., Constant/Variable volume, single zone/multizone.

i. Type of lighting systems, e.g., standard incandescent or fluorescent and low wattage, high output lighting systems.

2.19.2 Summary Report

Provide a summary section in the separate energy analysis report and results in the design analysis. Include all input data such as U values, design temperatures, hours of operation, building population and size, etc. Include output data such as distribution percentages (lighting, heating, cooling, fan, etc.).

2.20 TRAINING

Training courses shall be conducted for 5 operating staff members designated by the Contracting Officer in the maintenance and operation of all systems (one day for DDC/EMCS controls). Two week notice shall be given the Contracting Officer prior to training. A training day is defined as 8 hours of classroom instruction, including breaks and lunchtime, Monday through Friday, during the daytime shift in effect at the training

facility. For guidance in planning the required instruction, the Contractor shall assume that the attendees will have a high school education or equivalent, and are familiar with the systems. No training shall be scheduled until training manuals and O&M manuals have been approved by the Government. A minimum of 5 O&M manuals shall be provided for the instructions and 1 manual for each facility shall be given to the Contracting Officer to turnover to the Base Civil Engineer.

2.20.1 Training Course Content

The courses shall be taught at the project site for a period of 1 training day. The training courses shall cover all the material contained in the Operating and Maintenance Instructions, and O&M manuals the layout and location of each system and shall include the following for each system:

a. Troubleshooting
b. Diagnostics
c. Calibration
d. Adjustment
e. Commissioning
f. Repair procedures

Typical systems and similar systems may be treated as a group, with instruction on the physical layout of one such system. The results of the performance verification tests and the calibration, adjustment and commissioning reports shall be presented as benchmarks of the system(s) performance by which to measure operation and maintenance effectiveness.

-- End of Section --t

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SECTION 01007

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SECTION 01007

ELECTRICAL REQUIREMENTS

PART 1 ELECTRICAL DESCRIPTIONS AND NARRATIVES

1.1 GENERAL

1.1.1 References

Publications, codes, specifications and standards shall be used as the basic for the project design and shall include, but not be limited to the following:

ASSOCIATION OF EDISON ILLUMINATING COMPANIES (AEIC)

AEIC CS6	(1996) Ethylene Propylene Rubber Insulated Shielded Power Cables Rated 69 kV

ARMY CORPS OF ENGINEERS (COE)

DISTRIBUTION STANDARDS	Corps of Engineers Standard Electrical Distribution Details. http://cadlib.wes.army.mil CADD Details Library, Electrical Details Electrical Service and Distribution
LIGHTING STANDARDS	(Oct. 97)Corps of Engineers Standard Lighting Fixture Details Drawing Series No. 40-06-04 http://cadlib.wes.army.mil CADD Details Library, Electrical Details USACE Standard Details 40-06-04, Oct. 97

ELECTRONIC INDUSTRIES ALLIANCE (EIA)

EIA ANSI/EIA-310-D	(1992) Racks, Panels, and Associated Equipment
EIA ANSI/EIA/TIA-232-F	(2002) Interface Between Data Terminal Equipment and Data Circuit-Terminating Equipment Employing Serial Binary Data Interchange
EIA ANSI/TIA/EIA-485-A	(1998) Electrical Characteristics of Generators and Receivers for Use in Balanced Digital Multipoint System
EIA ANSI/TIA/EIA-222-F	(1996) Structural Standards for Steel Antenna Towers and Antenna Supporting Structures
EIA TIA/EIA-606-A	(2002) Administration Standard for the Telecommunications Infrastructure (ANSI/TIA/EIA-606)
EIA TIA/EIA-607	(1994) Commercial Building Grounding and Bonding Requirements for

	Telecommunications (ANSI/TIA/EIA-607)
EIA TIA/EIA-TSB-67	(1995) Transmission Performance Specifications for Field Testing of Unshielded Twisted-Pair Cabling Systems**

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE C2	(2002) National Electrical Safety Code
IEEE C57.12.26	(1993)Pad-Mounted Compartmental-Type, Self-Cooled, Three-Phase Distribution Transformers for Use with Separable Insulated High-Voltage Connectors, High-Voltage, 34 500 Grd Y/19 920 Volts and Below; 2500 kVa and Smaller

INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)

IEC 60297-1	(1986) Dimensions Of Mechanical Structures of the 482.6mm Series Part 1: Panels and Racks

ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IESNA)

IES HANDBOOK	(1993) Illuminating Engineering Society Handbook

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

ISO/IEC 11801	(2002) Information Technology - Generic Cabling for Customer Premises

TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) / ELECTRONIC INDUSTRIES ASSOCIATION (EIA)

EIA TIA/EIA-568-B.2	(2001) Commercial Building Telecommunications Cabling Standard - Part 2: Balanced Twisted Pair Cabling Components (ANSI/TIA/EIA-568-B.2)
EIA TIA/EIA-569-A	(1998; Addenda 2000, 2001) Commercial Building Standards for Telecommunications Pathways and Spaces (ANSI/TIA/EIA-569-A)
EIA TIA/EIA-570-A	(1999) Residential Telecommunications Cabling Standard (ANSI/TIA/EIA-570-A)
EIA TIA/EIA-644-A	(2001) Electrical Characteristics of Low Voltage Differential Signaling (LVDS) Interface Circuits

NACE INTERNATIONAL (NACE)

NACE RP0169	(2002) Control of External Corrosion on Underground or Submerged Metallic Piping Systems

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA WC 8	(1988; Rev 3 1996) Ethylene-Propylene-Rubber-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2002) National Electrical Code
NFPA 72	(2002) National Fire Alarm Code
NFPA 75	(2003) Protection of Electronic Computer/Data Processing Equipment
NFPA 101	(2003) Code for Safety to Life from Fire in Buildings and Structures
NFPA 780	(2000) Installation of Lightning Protection Systems

UNDERWRITERS LABORATORIES (UL)

UL 44	(1999; Rev thru May 2002) Thermoset-Insulated Wires and Cables
UL 83	(1998; Rev thru Nov 2001) Thermoplastic-Insulated Wires and Cables
UL 489	(2002; Rev thru May 2003) Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures
UL 854	(1999; Rev thru Nov 2002) Service-Entrance Cables

U.S. AIR FORCE (USAF)

AFJMAN 32-1080	(1995) Electrical Power Supply and Distribution
ETL 94-2	Utility Meters in New and Renovated Facilities (Superseded by UFC 3-400-01)

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 3-400-01	(2002) Energy Conservation
UFC 3-600-01	(17 Apr 2003; Change 16 Jan 2004) Design: Fire Protection Engineering for Facilities
UFC 4-010-01	(8 Oct 2003) DoD Minimum Antiterrorism Standards for Buildings
UFC 4-021-01	(2002) Design and O&M: Mass Notification Systems
BFEP	(March 2004) Peterson Air Force Base

Facilities Excellence Plan
(Note: See Attachment No. 2 for applicable BFEP references.)

1.1.2 Standard Products

Material and equipment shall be a standard product of a manufacturer regularly engaged in the manufacture of the product and shall essentially duplicate items that have been in satisfactory use for at least 2 years prior to bid opening. The label or listing of the Underwriters Laboratories, Inc., will be accepted as evidence that the materials or equipment conform to the applicable standards of that agency. In lieu of this label or listing, a statement from a nationally recognized, adequately equipped testing agency indicating that the items have been tested in accordance with required procedures and that the materials and equipment comply with all contract requirements will be accepted.

1.1.3 Special Environmental Conditions

Exterior electrical equipment such as facility transformers, generators, motors, and lights shall be suitable for environment and shall operate within a temperature range of -20 degree F to 100 degrees F. Equipment shall be suitable for an elevation of 6145 feet.

1.1.4 Color of Exterior Equipment

All exterior electrical equipment such as the service entrance transformer and pad-mounted switches shall be factory painted Federal Standard Color (FSC) 30045 or Sherman Williams 2733 (Chaparral) with flat finish per the Facilities Excellence Plan.

1.1.5 Accommodation of Disabilities

All designs shall incorporate provisions of the Architectural and Transportation Barriers Compliance Board, ADA Accessibility Guidelines for Buildings and Facilities (ADAAG), NFPA 72, and the Uniform Federal Accessibility Standards (UFAS). All aspects concerning placement and sizing from these standards shall be incorporated. In case of a conflict between the ADAAG and the UFAS or the ADAAG and NFPA 72, the ADAAG shall govern. Provisions pertaining to clearances shall generally be accommodated by other disciplines, however the design shall observe some precautions such as avoiding equipment configurations which would project into restricted clear space in corridors.

1.1.6 Antiterrorism/Force Protection

a. Unobstructed Space. The design shall comply with UFC 4-010-01. It is assumed that aggressors will not attempt to place explosive devices in areas near buildings where these explosive devices could be visually detected by building occupants observing the area around the building. Therefore, ensure that obstructions within 33 feet of inhabited buildings or portions thereof do not allow for concealment from observation of explosive devices 6 inches or greater in height. This does not preclude the placement of site furnishings or plantings around buildings. It only requires conditions such that any explosive devices placed in that space would be observable by building occupants.

1) Electrical and Mechanical Equipment. The preferred location of electrical and mechanical equipment such as transformers, air-cooled condensers, and packaged chillers is outside the unobstructed space.

However, this standard does not preclude placement within the unobstructed space as long the equipment provides no opportunity for concealment of explosive devices.

2) Equipment Enclosures. If walls or other screening devices with more than two sides are placed around electrical or mechanical equipment within the unobstructed space, enclose the equipment on all four sides and the top. Openings in screening materials and gaps between the ground and screens or walls making up an enclosure will not be greater than 6 inches. Secure any surfaces of the enclosures that can be opened so that unauthorized personnel cannot gain access through them.

b. Utility Distribution and Installation. Utility systems can suffer significant damage when subjected to the shock of an explosion. Some of these utilities may be critical for safely evacuating personnel from the building or their destruction could cause damage that is disproportionate to other building damage resulting from an explosion. To minimize the possibility of the above hazards, apply the following measures:

1) Utility Routing. For all new inhabited buildings, route critical or fragile utilities so that they are not on exterior walls or on walls shared with mailrooms.

2) Emergency Backup Systems. Where emergency backup systems are required by users requirements or criteria, provide space only for the users furnished equipment which ensures that emergency backup systems are located away from the system components for which they provide backup. Emergency backup systems will be government furnished/government installed (GF/GI).

c. Equipment Bracing. Mount all overhead utilities and other fixtures weighing 31 pounds or more to minimize the likelihood that they will fall and injure building occupants. Design all equipment mountings to resist forces of 0.5 times the equipment weight in any direction and 1.5 times the equipment weight in the downward direction. This standard does not preclude the need to design equipment mountings for forces required by other criteria such as seismic standards.

d. Mass Notification. The mass notification system shall comply with UFC 4-021-01. All inhabited buildings must have a timely means to notify occupants of threats and instruct them what to do in response to those threats. If mass notification is provided through the fire alarm control panel, the visible notification appliances used for the mass notification system must be separate from those used for fire alarm systems per requirements of UFC 4-021-01.

1) New Buildings. All new inhabited buildings must have a capability to provide real-time information to building occupants or personnel in the immediate vicinity of the building during emergency situations. The information relayed must be specific enough to determine the appropriate response actions. Any system, procedure, or combination thereof that provides this capability will be acceptable under this standard.

1.2 COORDINATION OF ELECTRICAL CRITERIA

All electrical criteria provide in this section shall be coordinated with the architectural section, mechanical section, fire protection section, structural section, interior design section, civil and site section, and all other sections not mentioned here. The number and location of all

electrical equipment indicated in the electrical requirements are approximate. Contractor design shall meet the intent of the electrical requirements provided in this section. Contractor shall coordinate the final locations of all electrical equipment with the BASE USERS to be provided by the Contracting Officer in the Field after the award of the RFP. Outages shall be kept to a minimum. The Contractor shall submit a written plan as require in Section 00800 paragraph UTILITY SERVICE INTERRUPTIONS. When digging is required, the Contractor shall submit a written "Dig Permit" as require in Section 00800 paragraph DIGGING PERMITS AND ROAD CLOSINGS.

1.3 EXTERIOR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM

The existing base primary electrical distribution system is a 12,470 volt DELTA, 3-phase, 3-wire + ground, 60 Hertz underground distribution system. The ground shall be the same size conductor as the primary but may be 600 volt cable. Load break elbows are permitted in electrical manholes, but shall not be used as means to manually disconnected primary power to the building. #2 AWG minimum primary conductors shall be routed in 4" conduit in concrete encased duct bank from pad-mounted switch to a new pad-mounted transformer. One spare 4" conduit shall be routed in same duct bank. New pad-mounted transformer shall be provided by Contractor.

1.3.1 Exterior Underground Primary Electrical Requirements

1.3.1.1 Medium Voltage Cables and Conduit

The primary cable shall be 133 percent insulated copper conductors (EPR) in concrete encased PVC conduit. Minimum burial depth shall be 3'-6" below finished grade. EPR cable insulation shall conform to the requirements of NEMA WC 8 and AEIC CS6.

1.3.1.2 Terminations and Splices

All primary load break elbows and termination kits shall be rated 15 kV and shall be 3M type or approved equal.

1.3.2 Medium Voltage Pad Mounted Switch

A new pad-mounted switch shall be placed on a concrete pad located to the next to the addition. Switch shall be of dead front construction. A ground ring or counterpoise #1/0 AWG minimum shall be provided with two ground rods at opposite corners. The new switch shall have two 12 inch spacers installed between the pad and the switch. Orientation and placement of the new switch shall allow a 10' hot stick to be used on the switch in all compartments. Sides which do not require hot stick operation shall not be closer than 4' to another object.

1.3.3 Manholes and Duct Banks

All new distribution primary lines shall be installed underground in a concrete encased duct bank with 4" conduits. There shall be one spare 4" conduit/duct for each filled conduit/duct as a minimum. The duct/conduit used in the concrete-encased duct bank shall be schedule 40 pvc. All non-encased ducts shall be schedule 80. Contractor shall either bore or push 4" electric conduits under roadways. Roadways shall NOT be cut for new duct bank crossing. New electric power manholes shall be provided at 90 degree turns and outside the facility as a minimum.

Distance between manholes shall not exceed 300 feet and not more than 360 degrees of total bend. Electric manhole covers shall be stamped "Electric" or similar working to indicate an electric manhole. Minimum size of manholes shall be 12' height by 8' wide by 6' deep. Each manhole and handhole shall have at least one ground rod and a looped ground conductor around the manhole mounted 12 inches above the floor. Where the ground rod enters the concrete, the ground rod shall be taped with electrical tape to 6" to each side of the concrete. Each manhole shall have mounting hardware to support the cable. The hardware shall be grounded to the ground conductor if metallic. Non-metallic hardware is preferred.

Each manhole shall have hardware to allow for the pulling of conductors installed at the duct bank entrance. Each manhole shall have collars added to raise the lid enough for water runoff, and a minimum of 12" of gravel under the manhole to allow for water drainage. Each manhole shall have a permanently installed ladder as part of the manhole. The ladder rungs shall be 12" apart, and an extendable hand hold shall be attached to the ladder which extends at least 3' above ground level to gain access to the ladder. The ladder shall have fall protection requirements. The neck shall be securely attached and not just laid in place. The neck shall also be sealed water tight. Necks made of bricks shall not be used. Conductors shall be looped around the manhole. All conductors in manholes shall be fire taped. Each circuit shall be fire taped individually. Power and communications ducts can be installed in the same trench. The power and communication ducts would be on the same horizontal level. No other utilities are allowed in the trench.

1.4 EXTERIOR UNDERGROUND SECONDARY ELECTRICAL DISTRIBUTION REQUIREMENTS.

Exterior secondary electrical distribution system shall be 480Y/277 volt, 3-phase, 4-wire underground service in conduit routed underground from pad mounted transformer to the Main Distribution Panel (MDP) located in the first level electrical room.

1.4.1 Pad-Mounted Tamperproof Compartmental Transformer

The pad-mounted transformer shall be a 12,470 volt, three-phase, delta-wye; oil-immersed unit (non-PCB), outdoor type with copper windings and conductors. Aluminum is not acceptable. Facility transformer shall be sized to have a minimum of 30% spare capacity above the estimated maximum demand for the building. Facility transformer shall be derated for altitude. The transformer shall be loop feed type with surge arresters on spare bushings. See Exterior Underground Secondary Electrical Distribution Requirements for pad-mounted transformer secondary distribution voltages. Transformer pad shall extend 10" beyond the edge of the transformer furnished. Pad-mount transformer shall comply with IEEE C57.12.26. Transformer pads shall have windows (openings) for primary and secondary cable/duct entrances.

1.4.1.1 Locations

Transformers shall have mineral oil-insulated of low flammability type ("non-flammable", "less flammable liquid-filled") and shall be located not less than 33 feet from combustible walls or building openings. Where this is not feasible, the requirements of UFC 3-600-01 shall be met.

1.4.1.2 Grounding

a. When the transformer is delta on the primary, but the primary system

voltage is a grounded-wye, bring the neutral (grounded conductor) and connect to the ground lug on the transformer.

b. Frame of the transformer is to grounded from the high voltage equipment pad and the low voltage equipment pad.

c. On a grounded-wye secondary, a ground strap is required from XO to the frame.

d. When a building has a lightning protection system with a ground ring and the transformer has a ground ring and the ground rings are within 25' of each other, then the ground rings shall be interconnected below grade.

e. Service from transformer to building should not have a grounding conductor. NEC does not require this conductor. If the service is a bus duct, there may be a benefit to installing a grounding conductor of the same size as the neutral.

f. Install a ground ring (counterpoise), minimum size shall be #1/0 AWG, around concrete pad with a ground rod at each corner. The ground ring size shall be increased in size to the proper size per IEEE, if the fault current indicates that #1/0 AWG is not adequate. Bond perimeter steel columns to ground ring and bond building slab rebar to steel columns.

g. Extend separate conductors from arresters and transformer neutral/housing and connect to the ground ring.

h. Ground any metallic conduit/duct to the ground ring.

i. Provide any other connections required by the NEC or NESC.

1.5 UNDERGROUND SERVICE ENTRANCE/FEEDER/BRANCH CIRCUITS

Service entrance conductors, branch and feeder circuits shall be single conductors, Type USE or RHW. Service entrance conductors and underground feeder/branch circuits shall be copper conductors with insulating grounding conductor in Sch. 80 PVC conduit. Transition to RGS conduit when above grade. Aluminum conductors and direct buried cables are NOT acceptable.

1.5.1 Conduits

Conduits shall be non-encased direct-burial Sch. 80 PVC for low voltage circuits. Top of conduit shall be 24" below finished grade. Transition to RGS conduit when above grade.

1.6 EXTERIOR LIGHTING SYSTEM

Area lighting shall be provided for all walkways, above all exit doors, and area signage. Lighting fixtures shall utilize high pressure sodium lamps. Fixtures shall match existing fixtures on BASE as to height and style. Fixture finish shall be anodized bronze to match existing lighting finishes. Design shall be in accordance with IES HANDBOOK, and the requirements in this section.

1.6.1 Area Lighting

Area lighting shall be provided for all areas noted above. Area lighting contactors and controls for the building shall be installed in the electrical rooms. Exact location of lighting controls shall be coordinated

with the USER during the design of the project. Area lighting control shall as referenced in paragraph "Lighting Control" below.

1.6.1.1 Walkway Lighting

Walkway lighting fixtures shall be bollard type. Walkway lighting bollards shall be placed along walkway and between walkway and parking lot to block parking lot traffic from side walk access. Lamps shall high pressure sodium and shall be sized to meet lighting criteria. The bollards shall match existing fixtures installed on base. See BFEP for Peterson AFB requirements for illuminated bollards. Walkway lighting control shall be as referenced in paragraph "Exterior Lighting Control" below.

1.6.1.2 Parking Lot Lighting

Parking lot lights shall meet BFEP for Peterson AFB requirements see parking lot lighting. The lighting contactor shall be located in the new electrical room.

1.6.1.3 Exterior Building Lighting

Exterior building lighting fixtures shall match existing wall washer fixtures installed around the existing building. Lamps shall be metal halide and sized to meet the lighting criteria. Fixtures shall be mounted near each entrance for the building. Exterior building lighting control shall be as referenced in paragraph "Exterior Lighting Control" below. Fixtures shall be wired from within the building and shall conform to the interior wiring standards described in this section. No building lighting circuits shall be surface mounted.

1.6.2 Exterior Lighting Control

Provide disconnect switch with HAND-OFF-AUTOMATIC switch and lighting contactors for exterior lighting controls. Lighting contactors shall be controlled from an photo-electric cell (mounted outside electrical room not less than 10' above ground) through the automatic leg of the HOA switches. Install lighting controls in the electrical room or otherwise indicated in this section. Lighting controls installed outside the electrical rooms shall be in weatherproof enclosures. Install lighting controls per requirements of this section. Exact location of all lighting controls shall be verified with the USER during design of the project.

1.6.3 Underground Lighting Circuits

Provide underground branch circuits for all exterior lighting circuits. Branch circuits shall be insulated copper conductors with insulated grounding conductor in conduit. Aluminum conductors are NOT acceptable. Direct buried conductors are NOT acceptable. All underground lighting conductors shall be in schedule 80 PVC. Transition to RGS conduit when above grade. Top of conduit shall be 36" below finished grade.

1.6.4 Building Lighting Circuits

All exterior fixtures mounted on the surface of the building shall be wired from within the building and shall conform to the Interior Wiring Methods paragraph of this section. No building lighting circuits shall be surface mounted. Exterior wall wash lighting for the addition shall match the existing fixtures. The new lighting contactor shall be located in the new electrical room.

1.7 CATHODIC PROTECTION SYSTEM

A sacrificial anode cathodic protection system shall be provided for all underground metallic lines (including sewer lines), fittings, valves and fire hydrants. If underground lines are non-metallic, then all associated metallic fittings, valves, hydrants, Tee's and 90's, etc. shall be protected and there shall be a tracer wire provided over the pipeline. A dedicated galvanic anode shall be used for each fitting, valve, hydrant, etc. All galvanic anodes shall be connected to the structure through a test station. At least one test station shall be provided on each valve, fire hydrant and metallic pipe. Isolate all new piping from existing piping. All insulated flanges or couplings, if not accessible, shall have a test station which is connected to either side of the insulated flange or coupling. All connections to structures shall be done with two conductors: one is the active conductor and one is a spare. A conductor color coding system shall be used: black for anode, red for main structure and blue for a second structure. In addition to the anodes, all metallic pipes must be provided with a coating system. The cathodic protection systems shall be designed and installed in accordance with NACE RP0169 Standards. The design of the system shall be a minimum of 25 years with a soil resistivity of 1500 ohm-cm. The highest quality magnesium anode shall be used. Criteria for determining the adequacy of protection shall be in accordance with NACE RP0169 and shall be selected by the corrosion engineer as applicable. Test stations shall be flush-curb box mounted in 1' X 1' concrete pads. Anode wires shall be #10 AWG.

1.8 UNDERGROUND CABLE MARKINGS

A color-coded plastic warning tape shall be placed at least 4" wide within the trench above all buried utility lines. RED shall be supplied for the buried electrical lines and ORANGE shall be supplied for all the buried communication lines.

1.9 INTERIOR ELECTRICAL DISTRIBUTION SYSTEM

BASIC DESIGN

Base would accept two services (one for the existing building and one for the addition) if the following is provided:

a) the existing service disconnects are changed/modified to have remote operation to open the service.

b) the new service disconnects are provided with remove operation to open the service.

c) both services have a warning sign wall mounted near by which indicates that there are two building services and shows each of the two service locations. Label the existing as "Service #1" and the new addition as "Service #2". Indicate you are here location on each on the signs.

d) a key-operated switch be installed on the existing Graphic Fire Annunciator Panel which shall open the two services and labeled "Building Service Disconnect". There shall be red indication light (LED) for each service that will be lite when that service is closed and labeled "ON". There shall be green indication light (LED) for each service that will be lite when that service is open and labeled "OFF". These indicating lights (LED) shall shall be

located near the key-operated switch.

e) locations of each service are shown on the Graphic Fire Annunciator Panel.

OPTION DESIGN (Single Power Service with Single Shutdown)
Base requires one electric service for the entire building (existing and addition). The existing service will be removed (main disconnect and primary transformer are presently located on the third floor in the penthouse). The 15 kv cable will be removed from building. The empty conduit will be capped. The existing transformer will be abandon in place after it is disconnected and its oil has been removed. Base wants a new service in the addition which would be sized to feed both the new addition and the existing building. A new 2000 ampere bus will be installed from the new main distribution switchgear to the existing sitchgear on the third floor in the penthouse.

The interior secondary distribution voltage within the building shall be 480Y/277 volt, 3-phase, 4-wire. Conductors shall be copper, type THHN/THWN conforming to UL 83, 600 volt. Aluminum is not acceptable. 480 volts, 3-phase shall be available at main distribution panel and be used for larger motor loads, equipment loads, exterior lighting and all other required loads. Provide step down transformers (480: 120/208V, 3-phase) and associated distribution panelboards for all receptacle loads, small motor loads, computer loads, interior lighting, and all other loads as required. Step down transformers shall have a 30% spare capacity for future loads. Transformer windings and conductors shall be copper. Aluminum is not acceptable. Transformers that serve non-linear loads such as the computer receptacles shall have K-rated transformers. Wiring shall consist of insulated conductors installed in rigid zinc-coated steel conduit or electrical metallic tubing, conforming to latest edition of NFPA 70. Plastic conduit is allowed only underground or under the floor slab. Raceways shall be concealed within finished walls, ceiling, and floors.

1.9.1 Service Equipment

Service equipment/disconnecting means shall be provided in the service rated enclosed main circuit breaker located on the exterior building wall. Service disconnect means shall be of the insulated-case circuit breaker type. Secondary surge protection shall be provided at the Main Distribution Panel.

1.9.1.1 Main Distribution Panel (MDP)/Panelboard

Main Distribution Panel(MDP)shall be in a metal-enclosure. MDP main circuit breaker shall be of the insulated-case circuit breaker type. Branch circuit breakers shall be molded-case type circuit breakers, except that branch circuit breakers 200 amp trip and larger shall be insulated-case type. Enclosure shall be ventilated general purpose type wall mounted type. Busses for the Main Distribution Panel (MDP) and all panelboards shall be tin-plated copper only. Aluminum shall not be allowed. Each phase, neutral and equipment grounding bus shall be clearly shown on the drawings. Short circuit rating of all busses shall be clearly indicated on the drawings. Enclosure for Main Distribution Panel and all interior panelboards shall be NEMA type 1.

1.9.1.2 KWHR Meter

Metering shall comply with Engineering Technical Letter, UFC 3-400-01: Utility Meters in New and Renovated Facilities. KWHR meters with 15 minute demand registers shall be provided for recording power consumption of the facility. Meter shall be a 30-point digital power meter (A, V, W, pf, etc. - not just kwhr) mounted on the MDP that is compatible with the existing Metasys EMCS system (Veris Hawkeye Energy meter model 8163 with H8126-CB card or equal).

1.9.1.3 Protective Coordination Study

A full protective coordination study to include overcurrent and short current analysis shall be done on the electrical distribution system for the building. The study shall include the interior electrical distribution system and primary distribution system back to the existing primary line.

1.9.2 Panelboards

Lighting and appliance branch-circuit panelboards shall be of the circuit breaker conforming to UL 489 and shall be located in the electrical room.

a. Load-center type panelboards and half size breakers shall not be allowed.

b. Panelboard shall not exceed 78" in height from the finished floor.

c. All panelboards shall have a minimum of 30 percent spare capacity for all loads. Panelboards shall have a minimum of 30 percent spare circuit breakers. Spare circuit breakers shall be redundant of the type of circuit breaker being provided in the panelboard.

d. Panelboard busses shall be tin-plated copper only. Aluminum busses are not acceptable.

e. The phase loading on panelboards shall be balanced as much as practical by the type of loads on the panel. This includes equally disbursing the spares between the phases.

f. All panelboards shall be provided with a panel schedule which is typed and placed in a protective holder located on the front inside of the panelboard door.

g. Panels shall have hinged covers door-in-door construction with a master keyed flush tumbler latchs.

h. All circuit breakers shall be bolt-on type breakers only. Stab-in breakers shall not be allowed.

1.9.3 Motors

Motors shall be of sufficient size for the duty to be performed and shall not exceed the full-loading rating when the driven equipment is operating at specified capacity under the most severe conditions encountered.

a. All motors shall have open frames and continuous-duty classification and be based on a 40 degree C ambient temperature reference.

b. All motors shall be derated for altitude.

c. All permanently wired polyphase motors of 747 watts or more shall meet the minimum full-load efficiencies as indicated in the Electrical Work, Interior Specification Section 16415A.

d. Power factor correction capacitors are to be installed with individual motors 25 HP and larger as a minimum, unless the motor is controlled by a variable frequency drive (VFD). In the case of VFD, capacitors are not required.

e. Motor starters shall use circuit breakers instead of fuses.

f. Thermal overloads shall be the bimetallic type that can be reset. The magnetic overload option shall only be used if indicated by the manufacturer of the equipment.

g. Reduced voltage starters shall be used on motors which are 60 Hp or larger as a minimum.

h. Motors above 1 HP shall be high efficiency.

i. All three-phase motors shall have phase loss protection.

j. Disconnect switches for motors shall be heavy duty type. Exterior switches shall be rain-tight. Disconnect switches for packaged HVAC equipment shall be as required by HVAC equipment manufacturer.

1.9.4 General Purpose Duplex Receptacle Outlets

Duplex receptacle outlets for general purpose applications shall be 20 amp, 125 volt, 2-pole, 3-wire grounding type. A maximum of five duplex receptacle outlets may be connected to a receptacle circuit in offices and computer rooms; all other locations 8 duplex receptacle outlets maximum per circuit is permitted. Receptacle circuits shall not supply lighting loads. General purpose duplex receptacle outlets shall be located in the facility as follows:

a. Provide general duplex receptacle outlets every 10' along the walls in all areas of the building. For small rooms that do not have 10' walls, a minimum of one (1) outlet shall be installed on each wall. Receptacles shall be mounted 15" above finished floor.

b. Provide a general purpose duplex receptacle outlet adjacent to each mirror for each sink position located in the bathrooms. Where mirrors are located other than above sinks, provide additional receptacles to accommodate hair dryers. Receptacle outlets shall have (GFCI) ground fault circuit interrupters. Mount receptacle outlets 48" above finished floor.

c. Provide flush floor-mounted duplex receptacle outlets with 2 voice/2 data in open office space. Exact location of all receptacle outlets shall be verified and coordinated with the USER during the design of the project. Coordinate the location of the receptacle outlets with the Interior Design package (furniture layout) locations for the demountable walls. Power and communication to system furniture in open office spaces shall be served by wall boxes when ever possible. When not possible, system furniture shall be served by the ceiling through power poles.

1.9.5 Special Receptacles

Ground Fault Circuit Interrupter (GFCI) receptacle outlets shall be provided in all rest rooms, sink countertops, janitor's closet and other wet locations. Weatherproof GFCI receptacles for exterior use, shall be weatherproof whether or not plug is inserted and have a polycarbonate cover plate. Exact location of the receptacles noted below shall be coordinated with the USER during the design of this project. Provide 20 amp,125 volt, 2-pole, 3-wire grounding type, duplex receptacles unless, indicated otherwise below in the following locations:

a. Provide duplex receptacles outlets for all vending machines to be installed by the government in the vending areas.

b. Provide a duplex receptacle outlet for each electric water cooler located in the lobby areas.

c. Provide duplex receptacle outlet for the government furnished and government installed copier and fax machine in locations coordinated with the User. Provide a dedicated receptacle for each copier.

d. Provide a weatherproof duplex receptacle with ground fault circuit interrupter on the exterior of the building adjacent to each personnel exit door of the building. Mount receptacles 24" above finished grade.

e. Provide one (1) dedicated 20 amp, 125 volt duplex receptacle outlet for the EMCS panel. The receptacle provided for the EMCS panels shall have a dedicated branch circuit.

f. Provide three (3) dedicated 20 amp, 125 volt double duplex receptacles for the LAN rack. Receptacle provided for the LAN rack shall have a dedicated branch circuit and ground.

g. Provide one (1) flush ceiling-mounted duplex receptacle to power every overhead projection system, and one (1) flush floor-mounted duplex receptacle outlet with LAN connections in all Conference Rooms. Coordinate location with paragraph "Fixed Mounted Projector Holder" in Section 01003.

h. In Training area, provide LAN and flush floor-mounted duplex receptacle outlets for computer access and portable projection system. Coordinate exact locations and quantities with the USER.

i. Provide wall-mounted cable TV outlets per USER requirements. Coordinate all locations with the USER.

j. In the Break Room: Provide four (4) (GFCI) receptacle outlets in all sink countertops, and other wet locations. Provide one (1) dedicated 20 amp, 125 volt duplex receptacle outlet to accommodate a counter-top microwave oven. Provide two (2) duplex receptacles outlets for a vending machine and refrigerator to be installed by the government. In the second floor break room, provide one (1) dedicated 20 amp, 125 volt duplex receptacle outlet to accommodate a built-in dishwasher.

k. Provide two (2) dedicated 20 amp, 125 volt duplex receptacle outlets for the communications terminal backboard. Receptacle outlets provided for the backboard shall have a dedicated branch circuit and ground.

l. Provide a dedicated 20 amp, 125 volt quad-plex receptacle outlet on each wall in each Communications Room. Receptacle outlets shall have a dedicated branch circuit.

m. Provide one (1) dedicated 20 amp, 125 volt duplex receptacle for the LAN rack. Receptacle provided for the LAN rack shall have a dedicated branch circuit and ground.

o. In the Small Computer Maintenance Room:

- Provide ten quadplex receptacles in metal surface raceway running along wall at a height of 49 inches above floor for workstations. Each receptacle in metal surface raceway shall be supplied from its own dedicated 20 amp, 1 pole circuit breaker at the lighting panelboard.
- Provide six 30A, 125 volt, 2-pole, 3 wire grounding type receptacles equally spaced on walls in room fed from a 30A, 1 pole breaker at lighting panelboard.

p. In the Equipment Control Office (ECO):

- Provide eighteen quadplex receptacles in metal surface raceway running along wall at a height of 49 inches above floor for workstations. Each receptacle in metal surface raceway shall be supplied from its own dedicated 20 amp, 1 pole circuit breaker at the lighting panelboard.

q. In the LAN Imaging Room:

- Provide twenty-two quadplex receptacles in metal surface raceway running along wall at a height of 49 inches above floor for workstations. Each receptacle in metal surface raceway shall be supplied from its own dedicated 20 amp, 1 pole circuit breaker at the lighting panelboard.
- Provide six 30A, 125 volt, 2-pole, 3 wire grounding type receptacles equally spaced on walls in room fed from a 30A, 1 pole breaker at lighting panelboard.

r. Provide a dedicated 20 amp, 125 volt duplex receptacle for each refrigerator

1.9.6 Computer Outlets

Computer outlets shall be duplex, 20 amp, 125 volt, 2-pole, 3-wire grounding type receptacles. A maximum of three duplex computer outlets shall be connected to a receptacle circuit. Circuits with dedicated neutral conductors shall be sized using 600 volt-amp per computer. Computer outlets shall be labeled as "COMPUTER". Mount the outlets 15" above finished floor. Computer outlets shall be mounted adjacent to the Telephone/Data outlets. Maintain a separation of 6" from the Telephone/Data outlets. See Section 01006 under paragraph "Facility Description" OVERALL SPACE REQUIREMENTS - BASIC for ORGANIZATION with quantities for COMPUTERS, EQUIPMENT, ETC. Also, reference same paragraph from previous sentence OVERALL SPACE REQUIREMENTS - OPTION for ORGANIZATION with quantities for COMPUTERS, EQUIPMENT, ETC.Exact location of all Computer Outlets including Open Office Space shall be verified and coordinated with the USER during the design of the project. Additional computer outlets shall be located in the buildings as follows:

1.9.6.1 Additional Computer Outlet - Locations

Computer outlets shall be located as follows:

a. In Training area, provide LAN and flush floor-mounted duplex receptacle outlets for computer access and portable projection system. Coordinate exact locations with the USER.

b. In the Emulator room, provide LAN access for one computer and dedicated computer outlets for nine computer locations. Coordinate exact locations with the USER.

c. Provide SIPRNET in the addition. Coordinate all locations with the USER.

ROOM	**QUANTITY OF OUTLETS**
21 MXG/CC	1
21 SFS/SFA	1
21 SW/MO	1

1.9.6.2 Device Plates

Device plates and receptacle bodies shall be ivory in color. Device plates shall be impact resistant plastic in areas with finished walls. In areas with unfinished walls like mechanical walls, the device plate shall be stainless steel.

1.9.7 Other Loads

Contractor shall provide electrical power to the following loads either by receptacle or direct wired as applicable:

a. Contractor shall provide all power connections, control and conduit as necessary to support paragraph "Motorized Projection Screen" in Section 01003. The Contractor shall coordinate location for screen control switch to "Raise Screen" and "Lower Screen" with the users.

b. Contractor shall provide a podium with all power connections and controls including LAN access from the podium in all Conference Rooms.

1.9.8 Architectural/Mechanical Connections

Contractor shall provide branch circuits, disconnect switches, magnetic starters, and all other related electrical equipment and material for all architectural, mechanical equipment and environmental equipment to be installed in the project (includes the facility and site). This shall include all hand dryers, HVAC units, unit heaters, pumps, exhaust fans, and all other mechanical equipment in the facility. Urinals, sinks, and blow dryers shall be controlled by passive infrared sensors hard wired to the building electrical distribution system. No batteries shall be allowed for this purpose. Contractor shall coordinate this electrical requirement with the architectural and mechanical requirements.

1.10 INTERIOR LIGHTING SYSTEM

1.10.1 Illumination Levels

Maintained illumination levels shall generally not be less than the values listed in the table below.

ROOM TYPE	INTENSITY (fc)

Communications Room	30
Conference Rooms	50
Corridors	15
Electrical	30
Janitor Closet	5
Mail Room	50
Mechanical Rooms	30
Office Areas	50*
Restrooms	30
Stairways	15
Storage Rooms	5
Vestibule	15

*Where system furniture is equipped with task lighting, open office areas may have lower ambient lighting levels (30fc).

1.10.2 Conservation Requirements

Contractor shall incorporate into the Facility Lighting system Green Technology. Contractor shall optimize building performance by the use of occupancy sensors and the use of sensors to control loads based on the availability of natural light. Illumination levels, in conjunction with energy conservation, shall be obtained by the most life cycle cost-effective techniques including, but not limited to, the following:

a. Provide multiple switching of multi lamp fixtures or multiple switching of fixture groups in large rooms, or both, to permit lighting fixtures to be turned off in unoccupied areas.

b. Provide energy efficient lamps and solid-state electronic ballasts.

c. Occupancy sensors shall be used for locations such as toilets where use would be intermittent and where control would generally be accessible to several individuals or functions. Passive configurations such as infrared sensors are to be used, unless the application is better suited to ultrasonic.

d. Location of light switches shall be coordinated with the floor plan and furniture layout to ensure that they are easily accessible and convenient. Location shall be coordinated with the User.

e. Provide task lighting under reception desk counters and kitchenette counters per Section 01003 paragraph "Cabinet Specifications".

f. Provide lighting in display cases per Section 01003 paragraph "Built-in Display Case".

1.10.3 Fluorescent Fixtures

Fluorescent light fixtures with T8, 34 watt lamps shall be used in all areas of the building. Fluorescent light fixtures in the Conference Rooms, Break Rooms, Mail Room, and Open Office Space shall use 3 lamp, parabolic reflectors with silver finish to reduce glare (type RF12 - Corps. of Engineers Standard Detail Drawings No. D502275E). Offices shall be provided with multi-level switching (33%-66%-100%). Fixtures in other areas such corridors, restrooms, storage, etc. shall be 2 or 3 lamp fluorescent type fixtures with parabolic louvers - silver finish (type RF12 - Corps of Engineers Std. Det. Dwg. No. D502275E). Acrylic lenses shall not be used.

Fixtures in utility areas such mechanical rooms, electrical/ communications room, storage rooms, and janitor's closet shall be industrial fluorescent type fixtures with open reflectors. All ballasts shall be of the energy saving electronic type with power factor correction to exceed 90%. Compact fluorescent vanity lights (type WF3 - Corps of Engineers Std. Detail Drawings No. D502275B) shall be installed above each restroom mirror.

BASE does not want dimmed fluorescent fixtures. If dimmers are required, such as in video telephone conferencing areas then incandescent lamps are allowed.

1.10.4 Incandescent Lighting Fixtures

Incandescent lighting fixtures shall NOT be used except for accent lighting applications and where dimmers are required. Incandescent lamps for accent lighting applications shall be rated for a minimum of 2500 hours.

1.10.5 Egress and Exit Lighting Fixtures

Egress and exit lighting design design shall be in accordance with NFPA 101. Egress and exit lighting fixtures shall be powered from a central battery/inverter system located in the electrical room to meet USER requirement. Exit lights shall be LED (green on white) type XL1 - Corps of Engineers Std. Det. Dwg. No. D502057E. Egress lighting fixtures shall be provided from room fluorescent light fixtures through out the facility.

1.10.6 Accent and Indirect Lighting

The Contractor shall provide accent lighting in the Lobby. Compact fluorescent light fixtures should be used to maximum extent possible. The Contractor shall provide indirect lighting above the stalls in the rest rooms.

1.10.7 OPTION DESIGN Improve Lighting Existing Break Area, Room 1060

The existing room needs light levels improved to not less than 35 footcandles. New lights must avoid light pollution toward the flight line. Coordinate with BASE for light fixture types permitted.

1.10.8 OPTION DESIGN Improve Lighting Penthouse

The existing penthouse needs light levels improved to not less than 20 footcandles. Coordinate with BASE for light fixture types permitted.

1.11 INTERIOR COMMUNICATION SYSTEM

Contractor shall provide new raceway from the existing Communications Room 1053 for future red Protective Distribution System (PDS) to consist of EMT conduits run down addition corridors with junction boxes located approximately every 50' for future taps offs. Coordinate sizes, routing with BASE. New communication rooms/closets shall be centrally located in such a way that each voice/data cable drop shall not exceed 290'. Contractor shall provide a Communications Room on each floor and one above the other with four 4" conduits connecting each Communications Room. In each Communications Room, provide a single quad-plex receptacle outlet on each wall and provide each quad-plex its own dedicated circuit.

The telecommunications (telephone) system design shall comply with NEC Article 800, Corps of Engineers Specifications, EIA TIA/EIA-568-B.2, EIA

TIA/EIA-569-A, EIA TIA/EIA-607, EIA ANSI/TIA/EIA-485-A, EIA TIA/EIA-644-A, EIA ANSI/EIA/TIA-232-F, Section 16710A, PREMISES DISTRIBUTION SYSTEM, and applicable regulations. The design shall form a complete communications system, including, but not limited to: wires, terminations, raceway, cabinets, and outlets. All LAN/telephone cabling shall be Cat-5e rated and plenum (CL2P), EIA TIA/EIA-568-B.2. The base wiring standard color code is EIA TIA/EIA-568-B.2. All interior cabling must be tested to EIA TIA/EIA-607 standards and requirements of Section 16710A. All voice and data cable installed shall be tested and meet standards with results on hard and soft copy turned over to the government.

All interior communication wiring systems shall have the cabling labeled on both ends per the BFEP see Facility Communications Standards. The label shall also be placed at the corresponding jack on the device plate.

At the point where the exterior cabling enters the interior communications room, shrink resistance caulking shall be installed around the conduits to prevent any foreign materials from entering the communications room. A record of all communication wiring installed by this contract shall be in format acceptable to the Cable Management Office.

1.11.1 General

All electronic devices (computers, file servers, hubs, concentrators, phones, etc.) are not part of this contract and will be installed by the USER. Each facility design shall be in accordance with the requirements of this section. Distance limitations for cabling lengths shall be in accordance with the TIA/EIA standards.

Contractor shall provide and install all internal wiring within the facility from the Communications Closets to the workstations data and telephone outlets. Contractor shall install stand alone floor mounted communications racks in each Communications Room grounded with electrical power on dedicated circuits. Ensure 36" of unobstructed space in front and back of open frame Communications Equipment Racks. Contractor shall terminate and label LAN drops from workstations to a patch panel mounted in the Communications Rack. Contractor shall provide backbone cabling between Communications Rooms consisting of both fiber optic and copper cabling.

1.11.2 Communication Terminal Backboard

Provide a 4' x 8' x 3/4" plywood backboard from wall to wall and floor to ceiling covered with two coats opaque flame retardant paint in each Communications Room. Contractor shall coordinate location of incoming telephone service with the **Base Communications Squadron**. All underground conduits entering the Communication Room shall be stubbed up 6" above finished floor adjacent to the telephone backboard. At the point where the exterior cabling enters the interior communications room, shrink resistance caulking shall be installed around the conduits to prevent any foreign materials from entering the communications room. The equipment layout in the Communication Room shall be approved by Base Communications Squadron.

1.11.3 Communications Raceway

The wiring between outlets and the termination points in the Communication Room shall be as described below.

All phone and data wiring shall be routed in conduit or cable tray. Contractor shall install a flexible cable tray system 24" wide x 6" deep.

Grounding is required of the flex trays, communication cabinets, and the conduits in the ceiling. Trays shall have a rung/wire spacing suitable for Category-5e cables and have a 20% spare capacity. Conduits shall be mounted from outlets up to ceiling area (above suspended ceilings in applicable rooms). Conduits shall be routed inside the walls of room with finished walls.

Cable trays shall be provided in the ceiling area above the cabinets and wall-mounted cross connect blocks in the Communication Room. Sizing shall include the 20 percent spare capacity. Cable trays shall not penetrate fir rated walls. Convert the cable tray to conduits of equivalent capacity.

1.11.4 Telephone/Data(LAN) Conductors

The copper cables(voice) shall be 24 gauge, 150 pair cable that can support Cat-5e unshielded twisted pair (UTP), plenum rated, solid copper station cable standards. Voice Cat-5e cable shall have white sheath and terminate in Communications Room on wall mount Cat-5e 110 blocks using guide wires and Cat-5e wall jacks on wall plates located at end user locations. Data Cat-5e cable shall have blue sheath and terminate in Communications Room on rack mounted Cat-5e patch panels using wire guides and Cat-5e wall jacks on wall plates located at end user locations. The fiber optic cable(data) shall be single cable consisting of 6 single mode/12 multimode (or 12sm/24mm) fibers. Both ends shall have ST connectors installed with ceramic/Zirconia ferral and metal body.

All cables including patch cords shall be U.L. tested at a minimum of 155 MHz operation. Extrapolation from a lower frequency is not allowed. The installation acceptance test shall be a "channel test" and includes all patch connections and cables. Testing shall be accomplished with a Cat. 5e, Level 2 compliant, time domain reflectometer. Cables are dedicated to one device/jack i.e. no daisy chaining. Cable numbering will be provided by the **Communication Squadron**.

1.11.5 Telephone/Data(LAN) Outlets

The outlets shall be at minimum the standard wall jacks consisting of two LAN and one telephone jacks. Each outlet shall be RJ-45, eight pin. Contractor shall locate outlets in the office areas one voice/two data jacks on every wall, and in the conference rooms and open office space one voice/two data jacks every 5'-10' along the wall. Telephone and data (LAN) cables are not allowed to be visibly exposed along wall or ceilings except in the Communications Room. Therefore, ensure there is a conduit patch or open area (above a suspended ceiling or below raised floor), which allows the signal and communication cable and/or conduit to get from the outlet to the termination point. The cable tray shall be used to distribute the telephone and LAN wiring throughout the facility. The tables below show additional quantity requirements for telephone outlets.

Provide a communications telephone line (STU III) in the 21 SFS/SFA areas.

Telephone outlets shall terminate on CAT 5e supportable 110 blocks located on a telephone terminal board in the Communications room.

Wall-mounted phone shall be 60" AFF, desk use phone/outlet shall be 18" AFF. All Telephone/data outlets locations shall be coordinated with the interior design package to include the furniture layout. The **Communications Squadron** shall have final approval on the location of the outlets.

LAN OUTLET/TELEPHONE.

ROOM NAME	**QUANTITY OF OUTLETS**
CLASSROOM/CONFERENCE (each of 2)	16 LAN & 2 PHONE
CONFERENCE RM	6 LAN & 6 PHONE
CONFERENCE RM SOURCE SELECTION	20 LAN & 20 PHONE
COMPUTER ROOM (4 SERVERS)	36 LAN & 2 PHONE

TELEPHONE OUTLETS ONLY.

ROOM NAME	**QUANTITY OF OUTLETS**
BREAK ROOM (1st floor)	1 wall-mounted
BREAK ROOM (2nd floor)	1 wall-mounted
COMMUNICATION ROOM (1st floor)	1 wall-mounted
COMMUNICATION ROOM (2nd floor)	1 wall-mounted
ELECTRICAL ROOM	1 wall-mounted
LOBBY	1 wall-mounted
MECHANICAL ROOM	1 wall-mounted
STORAGE ROOM	1 wall-mounted
STORAGE ROOM	1 wall-mounted

1.11.6 Cross Connect Blocks

Cross connect blocks shall be the Category-5e, 110 type. The telephone cross connect blocks shall have stand-off brackets and shall be wall mounted in the Communications Room. Each 4-pair telephone shall terminate on its own terminal on the 110 block. Provide the necessary quantity of blocks to accomplish this plus provide one additional block for future connections. Communications racks shall be purchased by Contractor per Base Communications Specifications and installed at locations determined by Base Communications.

1.11.7 Patch Panels

The LAN (Data) cables shall terminate on 24-port rack-mounted patch panels located in the Communications Room. The size of the patch panel shall be coordinated with the cabinet. The quantity shall be coordinated with the number of 4-pair cables required. Communications squadron to provide rack information.

1.11.8 Satellite Support

Provide two 4" roof penetration and galvanized, rigid steel conduits which runs from the Communications Room to area of roof above Communications Room for satellite TV or Land Mobile Radio. The conduit shall terminate at a weatherproof junction box on roof. Provide pull cord and extend conduit 6" into Communications Room and cap.

1.12 TELEVISION (CATV)

Contractor shall provide a flush mounted receptacle outlet and CATV outlet 6" below ceiling for all wall-mounted CATV locations. The location of the outlets shall be coordinated with the USER requirements and shall be approved by Peterson AFB personnel.

The CATV shall have all conduit, junction boxes, and a quad shield RG-6 coaxial 75-ohm cable, and terminators for a complete and usable system in accordance with the guidance herein and with the requirements given in UFGS 16710. The cables shall be homerun to the nearest Communications Closet. NO DAISY CHAINING ALLOWED. Each cable is dedicated to a single outlet. Cables shall be terminated in the nearest Communications Closet with F-Type connectors and each cable shall have a minimum excess length of 6'. The single-gang, outlet junction box for the jacks shall be sized in accordance with the requirements of UFGS 16710 and 16794. The CATV jacks shall be F-Type, female connectors. The 3/4" conduit from the outlet box shall terminate 8" above the suspended ceiling. In areas where there is not a suspended ceiling, the conduit with pull junction boxes per UFGS 16710 shall be provided to a point 6" into an area. CATV cables are not allowed to be visibly exposed along wall or ceilings except in the communications room. Two duplex receptacles are required in the Communications Rooms to support the CATV equipment.

All interior communication wiring systems shall have the cabling labeled with a unique alpha-numeric number at beginning and end termination points of the cable.

1.13 PUBLIC ADDRESS (PA) SYSTEM

Contractor shall verify and test to ensure that the PA system will be compatible, interface, and operate with the Peterson AFB PA system. The public address system shall have all conduit, junction boxes, and Category-5e shielded pair plenum wiring (24 AWG) for speakers, Category-5e 110 blocks, speakers, grilles, amplifiers, etc. for a complete and usable public address system in accordance with the guidance herein and with the requirements given in UFGS 16770. The speaker cables shall terminate on cabinet-mounted 110 blocks located in the Communications Room. The physical size of the blocks shall be coordinated with the cabinet. The quantity shall be coordinated with the number of cables required. Each speaker cable shall terminate on its own terminal at the 110 blocks. All power required for the system shall be supplied. Public address system cables are not allowed to be visibly exposed along wall or ceilings except in the communications room. The speakers inside the facility are ceiling mounted in the ceiling tile.

All areas throughout the building are to have a PA system. Contractor shall provide the exact location for the speakers for approval by the Government. Design/Build Contractor shall ensure obstructions are not present which would prevent or hinder the installation of the speakers, conduit and wiring. The amplifiers for the public address system shall be supplied and installed in the Communications Room.

All interior communication wiring system shall have the cabling labeled with a unique alpha-numeric number at beginning and end termination points of the cable. This alpha-numeric number shall also be used placed by the jack on the device plate. Below is a list of areas which are required to have a public address speaker. The quantity may have to be adjusted by the Contractor to ensure adequate sound is provided in the area.

ROOM NAME	**QUANTITY OF SPEAKERS**
ECO	1*
BREAK ROOM	1*
MAIL SORTING	1*
DOCUMENT DESTRUCT	1*

CUSTOMER SERVICE	1*
RECEIVING/STAGING	3
CORRIDOR	1
EXTERIOR BUILDING	4
MEN'S TOILET	1
WOMEN'S TOILET	1

*The speakers for these areas shall have wall mounted, volume control capabilities. The volume control unit shall be located by the door into the room.

1.14 EMCS (ENERGY MONITORING AND CONTROL SYSTEM)

The building shall be wired for EMCS (Energy Monitoring and Control System). All EMCS sensors will be installed per Mechanical specifications. See Mechanical SECTION 01006 for EMCS options and requirements (paragraphs BUILDING TEMPERATURE CONTROL SYSTEMS and Existing Johnson Controls METYSYS EMCS Interface). Provide 62.5 micron, duplex, multi-mode fiber optic cable in 3/4" conduit from each DDC panel to the patch panels located in the Communications Room. Provide power as required for all EMCS or DDC components (such as dampers, VAV boxes, control panels, etc.) requiring power.

1.15 BALANCED MAGNETIC SWITCHES

Contractor shall install empty conduit system for balanced magnetic switches (BMS) that will be located on all exterior doors. Contractor shall also provide empty conduit and junction box at each exterior door for a keypad. Contractor shall provide conduit rough-in for door strikes. Switches, keypads, and associated wiring shall be provided and installed by BASE. In architecturally finished areas, all conduit for the BMS will be routed inside walls and recessed junction box with cover plate shall be installed directly above door frame and directly above location of BMS. In non-finished areas, a surface mounted junction box with cover shall be located at each BMS location. Conduits from each exterior door BMS location shall be routed back to a junction box in the electrical room. A single conduit shall be routed from junction box in electrical room down to a weatherproof junction box on exterior building wall, accessible at grade level. The exterior junction shall be provided with a cover tamper switch mounted on interior side of junction box hinged cover. Size conduits and junction boxes as required based on coordination with BASE.

1.16 GROUNDING SYSTEM

The grounding system shall be designed in accordance with NEC Article 250 and the following criteria. In general, all metallic building components including reinforcing steel and miscellaneous metals shall be part of an electrically continuous ground system. Steel studs used in interior wall, T bars of the ceiling grid, diffusers of the air distribution system, and door hardware are exempt from this bonding requirement. Bonding shall be by exothermic welding or the brazing of a copper wire between components. All ground rods on the project shall be 3/4" x 10' copper clad steel.

1.16.1 Communication Grounding System

All exposed non-current carrying metallic parts of the telephone equipment, cable sheaths, cable splices and terminals shall be grounded. Contractor shall provide a 12" x 1/4" grounding bar along each wall in each Communications Room and communications entry point. The bars shall be

connected together by #1/0 AWG insulated copper cable. The ground system for the Communication Room shall be interconnected with #1/0 AWG insulated copper cable in 1" PVC conduit. The grounding system in Communications Room shall be bonded to a dedicated ground rod located outside which in turn is bonded to the ground ring (counterpoise) for the facility. Use #1/0 AWG copper grounding conductor in 1" conduit from the ground bus (located in the Communication Room) to the building service ground.

1.16.2 Equipment Grounding Conductors

A green equipment grounding conductor, sized in accordance with NFPA 70 shall be provided, regardless of the type of conduit. Equipment grounding bars shall be provided in all panelboards. The equipment grounding conductors shall be carried back to the service entrance grounding connection or separately derived grounding connection. Equipment grounding conductors shall be provided in all branch including lighting circuits and feeders circuits.

1.16.3 Earth Electrode System

The maximum resistance measured of the each electrode system shall not exceed 5 ohms under normally dry conditions. Ground rods shall be 3/4" x 10' copper clad ground rods.

1.16.4 Separately Derived Systems

For dry-type transformers within buildings, the grounding electrode conductor shall be connected to adjacent structural steel per NEC. If there are multiple dry-type transformers within a room, a copper ground bar shall be used as the connection point. This bar shall be bonded to the building ground ring via a ground rod located outside. The grounding bar and the conductor connecting the bar to the ground ring shall be sized to handle the combined fault duty of the equipment connected. Use exothermic welds for the connection. Backup generators that can assume building loads, interconnect with the service ground. Verify that connections are located so that any service ground fault equipment will operate as intended (one neutral bond or 4-pole transfer switches, etc).

1.17 LIGHTNING PROTECTION SYSTEM

NFPA 780, Appendix H - Risk Assessment Guide conducted for this building indicates a risk (R) of 5.5 which is in the moderate to severe category. Based on this assessment, the Contractor shall provide a lightning protection system in accordance with NFPA 780. Lighting protection system provided shall include (but not limited to) 18" air terminals at 20' spacing, main conductors, down conductors, bonding conductors, and 3/4" x 10' copper clad steel ground rods interconnected by a counterpoise routed around the perimeter of the building. In addition to the ground rods, 4 ground wells (one at each corner of the building) shall be provided for test purposes. Two ground wells shall be provided for connections from the new (addition) lighting protection system to the existing lightning protection system. All conductors shall be copper, except that aluminum or bronze may be used for connection to mechanical aluminum housings. All connections below grade, to main conductor and down conductors shall be by exothermic weld process. Alternate bonding methods will be allowed to metal bodies (vent hoods, exhaust stacks . . .) which have light enough weight to make exothermic welds impractical. Down conductors shall be concealed in PVC conduit. The lightning protection system shall be a concealed system.

1.18 FIRE DETECTION AND ALARM SYSTEM

The fire detection and alarm system requirements are provided in Fire Protection SECTION 01008 and herein. Fire alarm system shall be addressable to each device. Hybrid systems which have addressable loops are NOT acceptable. All alarms/status conditions for each device shall report/sound/flash local to the facility and also report back to the BASE Fire Station. Contractor shall provide all programming required at the facility and at the BASE Fire Stations. Existing base system is by Edwards EST. The headend is located in Bldg 218 will need to be expanded and reprogrammed for the addition. The system main servers are located in Bldg 1038. The existing Fire Alarm Graphic Annunciator Panel shall be modified/replaced to show the new addition. This panel is located in Room 1062. Fire Alarm is transmitted through fiber optic cable back to base fire station.

1.19 EQUIPMENT SIZING REQUIREMENTS AND RATINGS

Required capacity of the equipment bus shall be computed from the estimated maximum demand for the panelboard, switchboard, and specified as the next larger manufactured standard bus or main lug size. Overcurrent protection for panelboards, switchboards, switchgear and motor control centers with heavy motor loads, sizing must also consider starting current of the largest motor or motors in addition to the continuous demand amperes.

1.19.1 Interrupting Capacities

Equipment ratings shall be determined based on results of the short circuit analysis. Minimum standard interrupting ratings shall be identified on the plans preferably on a one-line diagram or alternately in panel schedules. Ratings may be called out in the specifications when single items are involved. The designer shall identify variables (such ad equipment impedances) which could affect available short circuit current and verify that equipment acceptable under contract plans and specifications would not permit fault current levels higher than the specified interrupting ratings.

1.19.2 Feeders and Branch Circuits

Feeders to distribution equipment such as panelboards, motor control centers, and switchboards shall be sized to allow the full capacity of the panelboards, motor control centers, and switchboards bus bar amperage rating to be used. Voltage drop shall be taken into account when sizing branch circuits.

1.19.2.1 Transformer Feeders

Sizes for primary and secondary feeders for transformers shall be based on the transformer kVA. This criteria also applies to the service entrance conductors.

1.19.2.2 Neutral Sizing

Use of full size neutrals shall be standard practice. For all applications involving discharge type lighting (fluorescent, HID) or other harmonics generating equipment (inverter, variable frequency drives, other solid state apparatus), the neutral must be treated as a current carrying conductor. In data processing applications including personal computers, the neutral must be sized larger than the phase conductors. Size the

neutral at 133 percent minimum (of the phase conductors) unless a harmonic analysis or field data demonstrates that a smaller size would be adequate. Multi-wire branch circuits with oversized neutrals shall not share a common neutral, but will have an individual neutral for each phase conductor.

1.19.2.3 Derating

Ampacity of conductors is to be derated per NEC Article 310, if more than three current carrying conductors are installed in a raceway. Four wire feeders where neutral is considered a current carrying conductors shall have an additional 80% derating. A maximum of nine current carrying conductors, using NEC designated derating factors, shall be installed in any raceway. When nonlinear loads are service, the neutral must be treated as a phase conductor. If a double size neutral is employed, count it as two line conductors.

1.19.2.4 Parallel Runs

Use of bus duct should be considered in lieu of parallel runs of cable when required ampacity is at or above 800A. Parallel runs of cable shall be limited to a maximum of 4. Equipment grounding conductors in each leg must be sized to carrying the total fault current based on the rating of the upstream overcurrent device.

1.19.3 Nuisance Tripping

For a period of one year after construction, the contractor shall be responsible for correcting problems which may arise from nuisance tripping. Nuisance tripping shall be defined has having breakers or fuses activating under an overload condition while the equipment was being operating within manufacturer parameters. These situations shall be corrected by making changes to the installation at no cost to the Government. These corrections can be increasing the trip setting or ruse size, as long as the increased setting is still at or below setting maximums given in NFPA 70. Any change could impact other items not listed such as conductor sizing and upstream coordination settings.

1.19.4 Installation

The Contractor shall install all system components including Government furnished equipment, and appurtenances in accordance with the manufacturer's instructions and shall furnish all necessary connectors, terminators, interconnections, services, and adjustments required for a complete and operable system. All interior wiring, including low voltage wiring shall be installed in steel conduit. Minimum conduit shall be 1/2 inch. Flexible cords or cord connections shall not be used to supply power to any components, except where specifically allowed in writing by the Government. Grounding shall be installed as necessary to preclude ground loops, noise, and surges from adversely affecting system operation. The installation wiring shall use terminal strips only; wire nuts or crimp terminals shall not be permitted. Devices shall use terminal points, strips or screw terminals for the wiring connections points - pigtail connections are not acceptable. If the manufacturer needs to use special cable e.g. twisted and shielded, then the wire size minimum and insulation voltage rating shall as a minimum be met.

1.20 EXTERIOR GOVERNMENT COMMUNICATION DISTRIBUTION SYSTEM

1.20.1 Communications Ductbank/Manholes

Minimum burial depth shall be 3'-6" below finished grade. Contractor shall either bore or push communications conduits under roadways. Roadways shall NOT be cut for new duct bank crossing. Each manhole shall have mounting hardware to support the cable. The hardware shall be grounded to the grounded conductor if metallic. Non metallic hardware is preferred. The manholes will be grounded in accordance with IEEE C2. All concrete encasements shall include a #6 AWG copper wire in encasement for tracing.

A concrete encased duct bank consisting of two 4" ducts with one duct containing three 1-1/4" innerducts shall be run from Telecommunications Computer Room to a demarcation point indicated by Base Communications. Pull stings shall be installed in the ducts and innerducts.

A 2" conduit shall be run from the Communications Room to a point 10' out from the building for CATV.

Provide pull strings in each duct. Ducts under roadways shall consist of rigid steel conduit.

1.21 BASE COMMUNICATIONS CONTRACTOR

The delineation between the Design/Build Contractor and the Base Communication Contractor (BCC) is described within this Section 01007. The term Base Communication Contractor used in this document refers to another contractor separate from the RFP Design/Build Contractor who will perform that work. The Design/Build Contractor shall note that this work shall be performed concurrently with the construction of the facility and shall require the Design/Build Contractor and the Designer of Record to coordinate with this other contractor and the base communications squadron. In general, the RFP Design/Build Contractor shall provide all power required for the communication/signal equipment, all communication wiring, jacks, outlets, conduit, patch panel, connecting blocks, cable trays, and junction boxes. The junction boxes would include pulling, splice and boxes which shall be used by device such as telephone/data jacks.

1.21.1 Exterior Work

Exterior work consists of the BCC providing and terminating the communication entrance cable. Base Communications contractor provides the inner duct, fiber optic cabling and copper entrance cabling.

1.21.2 Interior Work

1.21.2.1 Telephone

Base Communications contractor provides the entrance telephone cable, the cross connect wiring and the telephone instruments.

1.21.2.2 LAN (Data)

Base Communications contractor performs the cross connecting, but the patch cords are part of this contract. Equipment such as hubs, concentrator, etc., which are portable are provided and installed by the BCC.

1.21.2.3 Public Address System

Base Communications contractors provides Valcom V-2924, the 25 pr cable, the first set of 110 blocks and the cross-connect wiring to the next set of cross-connect blocks.

1.22 WIRING METHODS

Wiring shall conform to the latest edition of NFPA 70 and the requirements of this section. All conductors, including neutrals, shall be color coded.

1.22.1 Power Conductors

Conductors shall be copper only. Aluminum conductors are not allowed. Minimum conductor size shall be #12 AWG Conductors shall be installed in conduits. Power and lighting conductors shall be 600 volt, Type THHN (in dry locations), and THW or THWN (in wet locations). Conductors no. 8 AWG and smaller shall be solid. Conductors no. 6 AWG and larger shall be stranded. Cabling systems such as Mineral-Insulated cables, metallic armored cables and nonmetallic-sheathed cables shall not be allowed on this project.

Most available terminating components and materials are UL approved based on use with 60 degrees C conductor insulation in circuits of 100A or less and 75 degrees C insulation in circuits over 100A. Conductors shall be sized based upon the 60 degree C ampacity column of NEC Table 310-16 for sizes through #1 AWG and the 75 degree C column for #1/0 and larger. Conduit fill will not exceed 40% based on the dimensions of THW conductors, even though thinner insulation is likely to be used.

1.22.2 Communication Conductors

Communication conductors shall be provided per paragraph "INTERIOR ELECTRICAL DISTRIBUTION SYSTEM" of this requirement.

1.22.3 Conduits

Wiring shall consist of insulated conductors installed in rigid zinc-coated steel conduit or electrical metallic tubing. Plastic conduit is allowed only underground or under the floor slab. Raceways shall be concealed within finished walls, ceiling, and floors.

1.23 SPECIFIC USER REQUIREMENTS

ORGANIZATION COMPUTERS, EQUIPMENT, ETC.

21 SMF

· All contracting personnel will be on Peaknet (base network).

· Conference Room - 6 phone lines and 6 LAN lines dispersed around the room.
1. Provide for VTC capability
2. Provide for cable TV by running RG6 Quadshield back to the communications room from outlet.

· Computer Room
1. Presently includes the base communications with rack co-located in the room.
2. Presently has 2 floor standing UPS serving 4 servers and a

tape backup unit. Base had created a small distribution system just for circuits on UPS, receptacles and a panel.
3. Two lab workbenches are present on normal power (no UPS). Two tiered benches are for working on several laptops at once upgrading software etc. and for repair of computers.

· There will be 15-20 stations with network connected printers throughout the contracting work space.

· There will be approx. 5 stations with network connected scanners.

· Typical work station cubicle will contain a monitor, computer, task lights, receptacles, and data outlets.
1. Supervisors, management, admin. personnel will also have a printer at their workstation, approx. 25 of them.

· PA system is required throughout Contracting Area.

· Lighting should accommodate computer monitors (VDC No glare).

· Computer classroom with 30 stations with monitor and computer.

21 SFS/SFA

· Require one SIPRNET outlet.

· Presently have STU III phone, have a STE phone on order.

21 SVS/SVF

· Service's LAN requires copper cabling separate from PeakNet from each workstation back to their server equipment. They are requesting at 12'x12',acoustically sound communication closet to house their servers, a very loud printer (approx. 24"x24"), and a work bench. The work bench will support up to 5 CPU's and 2 monitors.

21 MXG/CC

· Conference Room requires one SIPRNET outlet. Uses simple workstation.

21 SW/MOM

· Have SIPRNET requirements. Need secured conference room

CPTS/FRQ

· No additional infrastructure requirements.
Servers communicate through PeakNet system. This group is currently located and will be staying on the 2nd floor of building 350. Their servers, UPS, racks, etc. are located in an existing communication closet.
The Comm Squadron (21 SCS) shares this space, so it also contains PeakNet, CATV, and telephone equipment/infrastructure. CPTS/FRQ requires storage space for computer equipment (approx. 3'x6'). Although there is plenty of space in the existing and anticipated future equipment of both CPTS/FRQ and 21 SCS, the attempt to store computer equipment in the communication closet has made the space tight and started to infringe on the rack working clearance requirements. Space for a work table would also be useful since they have laptop computers that need to be plugged into the PeakNet monthly. There is no dedicated cooling in this closet and

they have to carefully monitor the space insure the temperatures don't get too high.
POC: Bruce Ellis, 6-4845

PART 2 NOT USED

PART 3 NOT USED

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SECTION 01008

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SECTION 01008

FIRE PROTECTION REQUIREMENTS

PART 1 FIRE PROTECTION REQUIREMENTS

1.1 REFERENCES

The publications listed below form a part of this section to the extent referenced:

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10 (2002) Portable Fire Extinguishers

1.2 GENERAL PARAMETERS

Fire protection shall be based on sound fire protection engineering principles that give safeguards against loss of life and property by fire, consistent with the mission, risk involved, and economical utilization. The latest edition of the following standards and codes in effect and amended as of date of supplier's proposal, and any subsections thereof as applicable, shall govern design and selection of equipment and material supplied:

International Building Code (2000 Edition)
NFPA 101 (Life Safety Code, 2003 Edition)
NFPA 72 (National Fire Alarm Code, 2002 Edition)
NFPA 13 (Installation of Sprinkler Systems, 2002 Edition)
NFPA 10 (2002) Portable Fire Extinguishers
NFPA 14 (2003) Installation of Standpipe, Private Hydrants and Hose Systems
Unified Facilities Criteria (UFC 3-600-01, 2003 Edition)
UL 864 Control Units for Fire-Protective Signaling Systems (1996); Rev. thru Aug. 2001
ASTM E 84 (2003) Surface Burning Characteristics of Building Materials
BFEP(March 2004) Peterson Air Force Base Facilities Excellence Plan (See Attachment 2)

All applicable requirements of the aforementioned codes shall be incorporated into the design. Life Safety Code, NFPA 101 relative to this design shall give special attention to the application of fire codes as they relate to Life Safety. Features of fire protection based on the following shall be included in the design: automatic operating devices; exiting for inhabitants and the protection of egress components; personnel safety in hazardous areas; appropriate ratings of partitions, doors and windows; travel distances; common paths of travel; occupancy types; hazard of occupancies and their contents; isolation from the remainder of the facility; etc.

Applicable requirements of the International Building Code shall also be included in the design. These shall include the following: Types of construction; Fire area limitations; increases to allowable floor areas; separation of structures.

All military construction must comply with the code requirements set/forth in UFC 3-600-01.

1.2.1 Types of Occupancies and List of Hazardous Areas/Essential Equipment

1.2.1.1 Occupancy Classification

This project consists of one building. The building shall be a Business Occupancy in accordance with NFPA 101. According to the International Building Code (IBC), the building shall be classified as "Group B " occupancy in accordance with Chapter 3.

1.2.1.2 Classification of Hazard of Contents

The classification of hazard of contents shall be determined by the portion of each building which has the greatest hazard.

1.2.2 Separation of Structures

1.2.2.1 Exposure Classification

The building construction is a two-story structure with optional Penthouse. The types of non-combustible roof construction options available for each facility shall be determined by the Proposer.

1.2.2.2 Separation Distance in Feet

IBC, Table 602 requires a separation of 5 feet for a one-hour wall, and no requirement if greater than 30 feet.

1.2.3 Fire Fighting Support

The main fire fighting support shall be supplied by an automatic wet pipe sprinkler system. This fire protection and suppression system shall be tied into the building's fire detection and alarm system. The building shall be provided with fire extinguisher cabinets. These shall be located so that not more than 75 feet is required at any point in the facility. The fire extinguisher cabinets shall be of the fully recessed type in all finished areas. See Peterson AFB BFEP for extinguisher cabinet's color requirements.

In addition a zoned fire alarm system shall be provided that covers the various parts of the building, monitoring of the sprinkler system, air handling units, etc..

See subsequent paragraphs of this Fire Protection section for additional information regarding fire suppression, detection, and other aspects of fire fighting support. Fire extinguishers are to be Contractor furnished/Contractor installed.

1.3 FUNCTIONAL AND TECHNICAL REQUIREMENTS

1.3.1 Construction for Fire Resistances of the Building Including Roofs, Walls, and Doors.

1.3.1.1 Building Construction Type

The building shall comply with a minimum Type II-B in accordance with IBC, Table No. 601.

1.3.1.2 Exterior Walls

Exterior walls of the facilities shall be permitted to be non-combustible, non-rated as long as minimum distances from other buildings are maintained.

1.3.1.3 Roof

The building roof covering shall be Factory Mutual Approved or classified by Underwriter's Laboratory as Class A, roof system.

1.3.1.4 Interior Walls

One hour fire resistive walls shall be constructed around stair enclosures, elevators, separate janitor's closets, mechanical rooms, electrical rooms, and communications rooms per NFPA 101, from other parts of the buildings. All penetrations in fire rated walls (conduits, pipes, cable trays...etc.) shall be fireproofed according to their respective wall/floor/ceiling rating (sealed) at each penetration.

1.3.2 Type of Occupancies, Occupant Loads, Exits, and Travel Distances to Exits

1.3.2.1 Occupancies

The facility shall be considered a business occupancy in accordance with NFPA 101, Chapter 38.

1.3.2.2 Occupant Load

For purposes of determining required exits, the occupant load shall be based upon the maximum number of persons intended to occupy that space but not less than that required by NFPA 101.

1.3.2.3 Means of Egress

Not less than two exits shall be accessible from every part of the facility.

1.3.2.4 Travel Distance to Exits

Allowable travel distance limits to exits shall be per NFPA 101, chapter 38.

1.3.2.5 Allowable Floor Area

Allowable floor area limitations shall be in accordance with IBC, Table 503 and Section 506 and 507. Proposer shall determine construction type and apply the applicable portion of this code requirement. However, it is required that the building, be provided with 100% automatic sprinkler coverage.

1.3.2.6 Maximum Building Height

Maximum height limitations are outlined in IBC, Table 503.

1.3.3 Fire Extinguisher Cabinets

Fire extinguisher cabinets shall be provided per NFPA 10 with a travel distance to fire extinguisher cabinets not to exceed 75 feet. Fire

extinguisher cabinets shall be fully-recessed in finished areas, such as administrative, conference, corridors, etc.. Fire extinguishers shall be part of this contract.

1.3.4 Sprinkler Systems

Sprinkler systems shall be provided for 100% coverage and shall be a wet pipe sprinkler system. System design shall be in accordance with NFPA 13 and UFC 3-600-01. Provide post indicator valve (PIV) with tamper switch on water main service to building. Provide horizontal double check backflow preventer on water service inside building. This new addition shall have a new entrance and riser. Every floor shall have a seperate zoned sprinkler system, alarmed accordingly.

The majority of this building is to be designed for Light Hazard, and will be sprinkled in accordance with NFPA 13 and UFC 3-600-01. Include hose stream in accordance with UFC 3-600-01. Note that the area of demand shall be 3,000 square feet. Areas of the building that is not office space shall have a sprinkler density comenserate with the hazard. Plastic piping will not be permitted for the sprinkler system. Provide hose stream in accordance with UFC 3-600-01.

Contractor shall perform fire flow readings and base fire sprinkler design on contractor's results.

1.3.5 Fire Department Connections and Fire Hydrants

Fire Department connections for the sprinkler system(s) shall be provided with suitable all weather access for pumper apparatus within 150 feet, reference UFC 3-600-01. A minimum of one fire hydrant shall be located within 150 feet of the fire department connections. Fire Department Connection (FDC) shall be provided remote(outside) from the facility, location to be coordinated with the User.

1.3.6 Resistance to Interior Finishes and Materials to Flame Spread and Smoke Development

1.3.6.1 Interior Finishes

Interior finish materials on walls, ceilings, and partitions in all exits shall be Class A as defined in NFPA 101. All other areas shall have Class A or B interior finish materials for walls, ceilings, and furnishings.

1.3.6.2 Floor Finishes

Floor finishes shall be Class I or Class II. Carpet and other floor finishes shall have passed the acceptable criteria of ASTM E 84 or equivalent.

1.3.7 Fire Alarm and Detection System

The fire alarm and detection system shall be compatible with and tied into the existing BASE system. The existing fire alarm panel is an Edwards System Technology EST-3. If the existing panel can not be expanded for the addition, a new panel may be connected to the existing panel as a slave. The entire facility shall have automatic fire detectors designed in accordance with NFPA 72 and NFPA 101. Manual pull stations shall be provided and located in accordance with NFPA 101. Supervisory initiating

devices shall be provided and designed in accordance with NFPA 13 and 72. Placement of audio/visual devices shall comply with the Americans with Disabilities Act (ADA), paragraph 4.28 and NFPA 72, Chapter 6. Use the most stringent requirements from ADA or NFPA 72 where conflicts occur. Outside electric bell for sprinkler system(s) shall also be provided with a visual strobe. Fire alarm system shall be addressable to each device. Hybrid systems which have addressable loops are NOT acceptable. The main building fire alarm panel is located on a wall near the main entrance door. All alarms/status conditions for each device shall report/sound/flash local to the facility and also report back to the BASE Fire Department. Reprogramming of the existing fire alarm head end equipment, EST Fire Works, is included in this project.

1.3.7.1 Graphic Annunciator

The existing Graphic Annuciator with a printed and framed graphic map shall be revised. Graphic Annunciator shall show a complete building outline (including the addition) with all areas delineated.

1.3.7.2 NFPA 13 and NFPA 72 Requirements

Provide control modules, smoke detectors, heat detectors, OS&Y tamper switches, PIV tamper switch, and water flow switches as required by NFPA 13 and NFPA 72.

1.3.7.3 Other Requirements

Provide duct detectors, manual pull stations, flow switches, tamper switches, notifications appliances, etc.. The notification appliances shall be with white flashing strobe.

1.3.7.4 Alarm Verification

The system shall be provided with alarm verification features. The alarm verification features shall reduce false alarms due to transient conditions. The alarm/activation delay shall be adjustable from 0 to 60 seconds.

1.3.7.5 Indicating Devices

Evacuation indicating signaling devices shall be provided and designed in accordance with NFPA 101. Evacuation alarms shall be activated by a smoke detector, a manual pull station, or a flow switch.

1.3.7.6 System Design

The fire alarm system shall be a complete, supervised fire alarm reporting system. The system shall be activated into the alarm mode by actuation of any alarm initiating device. The system shall remain in alarm mode until the initiating device is reset and the fire alarm control panel is reset and restored to normal. Other system operational features include, but are not limited to, one person test mode, electrical supervision for circuits used for supervisory signal services (i.e., sprinkler systems, valves, etc.), supervised addressable relays for HVAC shutdown, and battery backup power. Wiring system shall be a looped Class A system.

The Main Fire Alarm Control Panel shall comply with the requirements of UL 864. The control panel and field panels shall be software reprogrammable to enable expansion or modification of the system without replacement of

hardware or firmware. The fire alarm panel shall monitor the fire sprinkler system and other fire protection extinguishing system.

1.4 DESIGN OBJECTIVES AND PROVISIONS

1.4.1 Zoning and Treatment of Each Potential Hazard

1.4.1.1 Walls

All areas where a potential hazard exists greater than that of the primary occupancy, shall be separated from the primary occupancy by walls having not less than 1-hour fire resistive construction.

1.4.1.2 Limiting Fire Spread

Every horizontal opening, and hazardous location as defined by NFPA 101 shall be protected.

1.4.1.3 Fire Alarms and Extinguishing Systems

The facilities shall be provided with a fire suppression system and a detection system as indicated previously.

1.4.2 Provision and Maintenance of an Unobstructed Emergency Egress System.

All corridor widths, clear space requirements relative to exit doors, etc., shall be in accordance with the Uniform Federal Accessibility Standards for unobstructed egress.

1.4.3 Dead Ends

Maximum dead ends shall be as per NFPA 101.

1.4.4 Egress Locations

Egress locations shall be marked with exit signs per NFPA 101.

1.4.5 Outside Exit Doors

Doors for outside exit doors shall swing in the direction of exit travel. Outside exit doors shall be equipped with panic hardware mounted 44 inches above the finish floor and have a minimum clear width of 34 inches to allow for egress.

1.4.6 Required Fire Exits

Required fire exits from the building shall lead to a public way or to a clear safe area at a minimum distance of 75 feet from the building.

1.4.7 Standpipe System

Provide a dry standpipe for each stair. Standpipe to be sized in accordance with NFPA 14. Fire Department connections (FDC) (for standpipe)to be provided remote from building at a location approved by the User. The stairtower standpipes in the new addition shall be tied together and only one FDC is required for these. In the existing building, the new standpipes in each stairtower shall not be interconnected and shall have their own FDC's.

PART 2 NOT USED

PART 3 NOT USED

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SECTION 01009

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SECTION 01009

HEALTH AND SAFETY AND SPECIAL DISPOSAL REQUIREMENTS

PART 1 HEALTH AND SAFETY AND SPECIAL DISPOSAL REQUIREMENTS

1.1 GENERAL

The Contractor shall be responsible for final editing of all required specifications and preparation of plans related to health and safety and to disposal of materials requiring special handling during performance of the work and for ensuring that these specifications and plans are followed.

1.2 REFERENCES

Applicable regulations and guidance include, but are not limited to:

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1926	Safety and Health Regulations for Construction
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 61	National Emissions Standards for Hazardous Air Pollutants
40 CFR 761	Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2003) Safety -- Safety and Health Requirements

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH 84-100	(1984; 3rd Ed, R: 1994) NIOSH Manual of Analytical Methods

1.3 SPECIFICATIONS

The Contractor shall specify all requirements necessary to ensure that all applicable Federal, state, and local safety and health requirements and disposal requirements are followed during demolition and construction work for the project. The edited specifications shall require preparation and submission of an accident prevention plan, including specific information on lead-based paint and asbestos; and submission of qualifications

information for any specially trained individuals or laboratories that will perform work associated with this project.

The following specifications are provided with this package:

Section 01400 SPECIAL SAFETY REQUIREMENTS
This specification is provided partially edited. As more information about the buildings to be demolished becomes available through Contractor surveys, the Contractor shall complete editing of this specification and shall include it in the design. This specification contains safety requirements for the project and also includes specific requirements to be followed if the existing buildings are demolished with lead-based paint and/or asbestos in place.

Section 13280A ASBESTOS ABATEMENT
This specification is provided partially edited and shall be included in the design for any required removal of asbestos-containing materials from existing buildings prior to demolition. As more information about the buildings to be demolished becomes available through Contractor review of existing records and through Contractor survey, the Contractor shall complete editing of this specification.

Additional specifications as appropriate and as described below shall be edited and included in the design.

1.4 LEAD-BASED PAINT

No lead-based paint survey information has been provided for Buildings 365, 391, or 880. The Contractor shall review any available information regarding the presence of lead-based paint in the buildings, determine the need for additional lead-based paint survey, and conduct a survey of the buildings to obtain necessary information regarding the presence of lead-based paint. A lead-based paint survey report shall be provided as part of the 60% design submittal and shall also be submitted to 21 SW CES/CEV, Building 1324. The Contractor shall use this information to determine any need for removal of lead-based paint and/or for health and safety requirements related to lead-based paint during demolition of the buildings.

The design shall ensure that workers performing demolition/removal activities are not exposed to a lead inhalation hazard. For buildings demolished with lead-based paint in place, health and safety requirements shall be identified in Section 01400 SPECIAL SAFETY REQUIREMENTS. If it is determined that removal of lead-based paint prior to demolition is required, these procedures shall be detailed in Section 13282N LEAD IN CONSTRUCTION, along with associated disposal requirements.

For buildings demolished with lead-based paint in place, in accordance with Federal regulations, sampling and analysis of the building wastestream must be performed before debris disposal. Per 40 CFR 260 and 40 CFR 261, the Contractor shall obtain a representative sample of the wastestream and sent it to a laboratory for toxicity characteristic leaching procedure (TCLP) for lead. This sample shall contain a proportionate sample of all waste material associated with demolition of the building, not just the lead-based paint and not just painted surfaces. Results of this analysis shall be provided to the Contracting Officer and to 21 SW CES/CEV, Building 1324, along with any disposal documentation. If the analysis shows that building debris is not hazardous, it can be disposed of as construction debris. These testing and disposal requirements shall be detailed in

Section 02220, DEMOLITION.

1.5 ASBESTOS

Available asbestos survey information for Buildings 365, 391, and 880 has been provided (see attached). Asbestos-containing materials documented in these surveys include: Building 365 - vinyl asbestos floor tile; Building 391 - mastic on acoustical tiles, floor tile mastic, and vinyl asbestos floor tile with associated mastic; and Building 880 - wall plaster, mudded joint packings on water pipe elbows, vinyl asbestos tile, floor tile mastic, and glued-on ceiling tiles. The Contractor shall review available information, determine the need for additional asbestos survey, and if necessary, conduct a survey of the buildings to obtain necessary information regarding the presence of asbestos-containing materials. If additional asbestos survey is performed, an asbestos survey report shall be provided as part of the 60% design submittal and shall also be submitted to 21 SW CES/CEV, Building 1324. The Contractor shall use this information to determine any need for removal of asbestos-containing materials and/or for health and safety requirements related to asbestos-containing materials during demolition of the buildings.

If it is determined that buildings can be demolished with asbestos-containing materials in place (such as vinyl asbestos floor tile in good condition), health and safety requirements shall be identified in Section 01400 SPECIAL SAFETY REQUIREMENTS. Appropriate guidance regarding disposal of building debris containing asbestos shall also be included. If it is determined that removal of asbestos-containing materials prior to demolition is required, these procedures shall be detailed in Section 13280A ASBESTOS ABATEMENT, along with associated disposal requirements. The specifications shall include a requirement to provide a copy of asbestos waste shipment papers to 21 SW CES/CEV, Building 1324.

1.6 FLUORESCENT LIGHT FIXTURES

No information regarding the presence of fluorescent light fixtures or other building components that may contain hazardous materials in the buildings to be demolished has been provided. Ballasts manufactured through 1979 contain polychlorinated biphenyls (PCBs). All fluorescent light tubes and high intensity discharge lamps shall be assumed to contain mercury, unless there is evidence to the contrary. Other building components that may contain mercury include thermostats, thermostat probes, and mercury switches. The Contractor shall perform a walk-through survey of the buildings to check for the presence of these items. Fluorescent light ballasts shall be examined to see if they are labeled "No PCBs."

These fixtures shall be appropriately disposed of or recycled. Disposal/recycling requirements shall be in accordance with Federal and state regulations and any requirements of the base environmental office and shall be detailed in the demolition specification. Ballasts and fluorescent light tubes shall be packaged in accordance with U.S. EPA regulations and shipped (with proper documentation) in accordance with U.S. Department of Transportation regulations. Care shall be taken to ensure that breakage of fixture components and subsequent release of mercury or PCBs does not occur. Fluorescent light tubes shall be handled in accordance with applicable regulations and PCB-containing ballasts shall be handled in accordance with 40 CFR 761. Management of any spill or release that occurs during handling of fixture components and subsequent disposal of the resulting waste is the responsibility of the Contractor and shall be conducted, under applicable regulations, at no additional cost to the

Government.

The Contractor shall be responsible for editing Specification Section 02220 DEMOLITION, to reflect any requirements associated with disposal of materials requiring special handling.

PART 2 NOT USED

PART 3 NOT USED

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SECTION 01040

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05/04

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SECTION 01040

AS-BUILT DRAWINGS
05/04

PART 1 GENERAL

1.1 DEFINITIONS

The definitions listed below form a part of this specification.

1.1.1 Red-Line Drawings

Accepted design drawings marked-up to show actual work performed to include necessary sketches, modification drawings, shop drawings and notes. Green ink is used to indicate work deleted from the contract. Red ink is used for additions and deviations from the contract.

1.1.2 As-Built Drawings

Electronic CADD files developed from the accepted design drawings that include all of the information from the redline drawings and suitable for half-size reproduction.

1.1.3 Black-Line Drawings

Paper drawings reproduced from electronic CADD files or high quality reproducible drawings.

1.1.4 Full-Size Drawings

28 inches x 40 inches nominal size drawings with all details visually readable.

1.1.5 Modification Circle

A circle with a horizontal line through the center. The top half will contain the letter "P" with the bottom half containing the Modification number. The lettering standard will be 1/8-inch (AutoCAD) Romans.shx.

1.1.6 Electronic CADD Files

Electronic CADD files are files saved on CD-ROM in accordance with appropriate CADD standard. The CADD standard will include level on/off status, special characters, line wieghts, font, and size requirements.

1.1.7 Accepted Design Drawings

Construction set of complete design drawings, which have been accepted by the Government, for the construction phase of the contract.

1.2 GENERAL REQUIREMENTS

The work includes creation of electronic CADD files on AutoCADD 2002 for as-built drawings to accurately depict existing conditions of the project. As-Built Drawings will become the permanent record drawings of the

construction. The Contractor is responsible for development of electronic CADD files in accordance with Omaha DistrictCADD standards. Omaha District AutoCADD Standards will be made available to the successful offeror. AutoCADD Standard utilize the National CAD standards with Omaha District refinements concerning file names, layers, colors, line widths, details and symbols. See requirements in this section for a summary of Omaha District file format and font requirements. The Contractor shall be responsible for furnishing the required CAD software. The As-Built drawings shall include all major features of the work and all details to the same level as the accepted design set of drawings. All changes from the accepted design drawings, including but not limited to all deviations, additional information, and modifications to the contract shall be shown on the as-builts. Where accepted design drawings or specifications allow for options, only the option selected and actually constructed shall be shown on the As-Built Drawings. Systems designed or enhanced by the Contractor such as HVAC control system, fire alarm system fire sprinkler system, irrigation sprinkler system, and letters of clarification, shall be accurately and neatly recorded on the As-Built Drawings using the same symbols, terminology, and general quality as the original set of accepted design drawings. All sheets affected by a change shall be revised. The transmittal requirements for the As-built Drawings shall be shown as events on the Contractor prepared project schedule.

1.3 PAYMENT

In accordance with the clause "Payment Under Fixed - Price Construction Contracts", which provides for progress payments on estimates of work accomplished (which meets the standards of quality established under the contract), $(number of drawings in accepted design package x $250 per sheet) will be withheld from payment for the creation of As-Built drawings until the final as-built drawings are delivered to the Contracting Officer (including any necessary revisions and subject to the approval of the Contracting Officer).

The Government will assign the Contractor a performance rating (CCASS for Corps of Engineers projects) upon completion of the project. The timeliness of satisfactory As-Built drawing submittals will be an important factor in determining the assigned rating. An unsatisfactory performance of As-Built drawings creation will be given to the Contractor if the Contractor demonstrates an unwillingness to work with the Government on As-Built drawing creation or the Contractor fails to submit satisfactory Final As-Built drawings within 60 calendar days of turning the completed project over to the Using Service. If satisfactory As-Built drawings are not received within 120 days of turning the project over to the Government, the Government will utilze the funds withheld to complete the As-Builts.

1.4 TRANSMITTAL OF AS-BUILT DRAWINGS

1.4.1 Preliminary As-Built Drawings

The Contractor shall produce Preliminary As-Built Drawings indicating as-built conditions on AutoCADD (Version 2002) with "clouding". The Contractor shall contact Jim Janicek at (402)221-4519 before beginning As-Built preparation. As-Built preparation process is provided in paragraph As-Built Preparation below. Preliminary drawings shall consist of 15 percent of total project drawings. These drawings shall be sheets used for the construction of this project (exludes Cover Sheet, Vicinity Map, Location Plan and Indexes). The As-Built CADD files which include all changes up to the time Preliminary Drawings shall be sent as stated below.

The Contractor shall draw attention to all drawing changes by "clouding" the affected area. This "clouding" shall be accomplished on layer 63 of the drawing file. The Preliminary Drawings shall consist of one (1) set of CADD files on a CD-ROM and one (1) full-size set of the Black-Line Drawings. One (1) set of CADD files on a CD-ROM shall be submitted to the Omaha District Office (ATTN: CENWO-ED-DI, Jim Janicek). In conjunction with this submission, one (1) full-size set of the Black-Line Drawings shall be submitted to the COR. Both documents shall be submitted three (3)weeks prior to the final acceptance inspection unless otherwise directed by the COR. The COR will notify the Contractor in writing of approval / disapproval. The Contractor shall not submit the Final Drawings until he receives the COR's letter approving the Preliminary Drawings.

1.4.2 Final As-Built Drawings

The Contractor shall produce Final As-Built Drawings in AutoCADD (Version 2002) without "clouding". The As-Built preparation process is provided in paragraph As-Built Preparation below. The Final Drawings shall include all changes. The Final Drawings in the form of a CD-ROM shall be submitted to the COR and Omaha District Office (CENWO-ED-DI) no earlier than the day of acceptance of the project and no later than thirty (30) days after the date on the acceptance letter for the Preliminary Drawing unless otherwise directed by the COR. (Note: Final drawings shall not be forwarded to the customer. Corps of Engineers, Omaha District COR will forward to the customer after Quality Review.) Contractor shall submit one (1) set of CADD files on a CD-ROM to the Omaha District Office (ATTN: CENWO-ED-DI, Jim Janicek). Contractor shall send the following documents to the COR:

a) One (1) set of CADD files on CD-ROM (folder name containing as-built files shall be designated "AS-BUILTS" on each CD-ROM). Both CD case and CD-ROM shall contain the name of the project, location, specification number, and contract number, and words "As-Built Record Set"). The folder shall contain drawings, indexes and X-REF files related to all as-builts.

b) All red-lined hard copy drawings prepared by the Contractor during construction.

COR will forward one (1) full-size set of drawings along with CD-ROM to the customer.

1.4.3 As-Built Preparation

Both preliminary and final electronic as-built drawings shall be produced in accordance with the following process for AutoCADD drawings:

1.4.3.1 Not Used

1.4.3.2 For AutoCADD (*DWG) Files

a. When opened, the drawing shall be seen exactly as it should be plotted.
b. The view shall be zoomed to fit the border.
c. All information in the title block shall filled in, including plot scale.
d. The information in the title block shall be correct, including the design file name and the plot scale.
e. All files shall reference an AutoCAD border supplied by the Omaha District placed in the layout at a scale of 1 and at the location (0,0).
f. All unnecessary information outside the border shall be deleted.

g. All files shall be purged.
h. All xrefs shall be included.
i. All fonts used shall be included with the set, even if it is the standard AutoCAD fonts.
j. An ASCII text file shall be provided with the following information: the name and phone number of the person we need to contact if we have problems, and the version of AutoCAD used to create and/or work on the drawings.
k. Both the .ctb file and the .pc3 file shall be supplied.
l. Each sheet/design shall have its own file and file name.
m. All proxy graphics shall be exploded to allow editing with AutoCAD without the use of Autodesk desktop software.
m. Half toning shall be accomplished by using the colors 8, 9, or 250-255 and setting the pen table to plot referenced colors to half tone.

1.5 PROCEDURE

The Contractor shall utilize this CD-ROM to create a set of electronic Cadd files and full-size Red-Line Drawings to fully indicate As-Built conditions. The Red-Line Drawings shall be maintained at the site, in a current condition until the completion of the work and shall be available for review by the COR at all times. All as-built conditions shall be on the Red-Line Drawings within two (2) days after the work activity is completed or shall be entered on the deficiency tracking system (see Section 01451A, CONTRACTOR QUALITY CONTROL). The Contractor shall not convert electronic drawing files from one software language to another (i.e. Microstation to AutoCADD or AutoCADD to Microstation).

1.6 TITLE BLOCKS

The contract number and the specification number (if available) shall be shown on all sheets. "RECORD DRAWING" shall be added below the title block on all sheets. All modifications to the contract shall be posted in ascending order. The top line of the revision box shall state "REVISED TO SHOW AS-BUILT CONDITIONS" and dated. All modifications to all plans, sections, or details, shall have a modification number placed in the revision box under column entitled "Symbol". The statement "GENERAL REVISIONS" may be used when applicable. The date to be added in the revision box for modifications is found in Block 3 of Form SF-30. Cover Sheet will have Contract Award Set changed to As-Built Record Set with month & year completed. Month and year completed will also go in the date box in the title block. There will be no separate dates.

1.7 PROCEDURES FOR POSTING MODIFICATION CHANGES TO DRAWINGS

Follow directions in the modification for posting descriptive changes.
A Modification Circle shall be place at the location of each deletion.
The highest modification number on the sheet should be shown in the modification circle in the "DATE" and "DRAWING CODE" boxes of the title block.
For all new details or sections that are added to a drawing, place a Modification Circle by the detail or section title.

For changes to a drawing, place a Modification Circle by the title of the affected plan, section or detail titles (each location).

For changes to schedules on drawings, a Modification Circle shall be placed either by the schedule heading or by the change in the schedule.
The Modification Circle size shall be 1/2-inch diameter unless the area where circle is to be placed is crowded. Use smaller size circle for crowded areas.

1.8 WORD ABBREVIATIONS

Abbreviations shown on the abbreviation sheet shall be used to describe all work items. Additional word abbreviations, not found on the abbreviation sheet but necessary to describe the work, shall be properly identified and incorporated with the other standard word abbreviations.

1.9 LEGEND SHEETS

Symbols, which conflict with those on the original accepted design legend sheet, shall not be used. Additional symbols, necessary to depict any additional work items, shall be properly identified and added to the legend sheet or supplemental legend. Those projects that do not have legend sheets may use supplemental legends on each sheet where symbol is shown.

1.10 CONTRACTOR SHOP DRAWINGS

Contractor shop drawings,which supersede data on the accepted design plans and/or additional drawings, prepared by the Contractor, shall be incorporated into the As-Built Drawings. Design plans prepared by Contractor shall include the designer's name on the As-Built Drawings.

1.11 INDEXING OF DRAWINGS

If drawings are added to the portfolio of drawings to depict as-built conditions, the index of drawings shall be revised accordingly.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 GENERAL

As-Built drawings shall include as-built information to the same level of detail as shown on the original details, unless otherwise specified. The Contractor shall provide any additional full-size drawings as required to display all the details.

3.2 SITE WORK

3.2.1 Utilities

All utilities shall be shown whether active, inactive, shown on the original accepted design drawings, or found on-site. The type of utility, location, general direction, size, material make-up and depth shall be shown. The location and description of any utility line or other installations of any kind known to exist within the construction area shall be shown. The location shall include dimensions to permanent features.

3.2.2 Structures

Structures above and below ground shall be shown. The size, material

make-up, location, height, and/or depth shall be shown. Manholes shall show rim elevation and invert elevations as applicable. Power poles shall show electrical equipment and voltage rating.

3.2.3 Grades

Grade or alignment of roads, structures, or utilities shall be corrected if any changes were made from the contract drawings. Elevations shall be corrected if changes were made in site grading.

3.3 STRUCTURAL

3.3.1 Steel/Concrete

Shop drawings that deviate from the accepted design drawings shall be incorporated in the As-Built Drawings.

3.4 MECHANICAL

3.4.1 Ductwork

Ductwork shall be shown to reflect actual installation and duct size. Ductwork routing changes shall be shown.

3.4.2 Plumbing

Piping and fixtures shall be shown to reflect the type of material, size and the route or location.

3.5 ELECTRICAL

3.5.1 PANELS

All accepted design drawing panel schedules shall be revised to show as-built conditions. Home-run circuit designation on electrical drawings shall accurately correspond to the as-built panel schedules.

3.5.2 Controls

All control diagrams in accepted design drawings shall be revised to reflect as-built conditions, and setpoints.

-- End of Section --

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SECTION 01200

WARRANTY OF CONSTRUCTION AND DESIGN

5/00; Rev 02/02

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SECTION 01200

WARRANTY OF CONSTRUCTION AND DESIGN
5/00; Rev 02/02

PART 1 GENERAL

1.1 WARRANTY OF CONSTRUCTION

(a) Foremost and in addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (i) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

(b) This warranty shall continue for a period of 1 year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the Government takes possession.

(c) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Government-owned or controlled real or personal property, when that damage is the result of--

(1) The Contractor's failure to conform to contract requirements; or

(2) Any defect of equipment, material, workmanship, or design furnished by the Contractor.

(d) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause.

(e) The Contractor's warranty with respect to work restored, repaired or replaced will run for 1 year from the date of restoration, repair or replacement. This provision applies equally to all items restored, repaired, or replaced under paragraph (c) and (d) above.

(f) The Government will notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage. Repair work necessary to correct a warranty condition which arises to threaten the health or safety of personnel, the physical safety of property or equipment, or which impairs operations, habitability of living spaces, etc., will be performed by the Contractor on an immediate basis as directed verbally by the Government. Written verification will follow verbal instruction.

(g) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of verbal or written notice, the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

(h) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall--

(1) Obtain all warranties that would be given in normal commercial practice;

(2) Require all warranties to be executed, in writing, for the benefit of the Government, if directed by the Contracting Officer; and

(3) Enforce all warranties for the benefit of the Government, if directed by the Contracting Officer.

(i) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the Government may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.

(j) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Government nor for the repair of any damage that results from any defect in Government-furnished material or design.

(k) This warranty shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

(l) The Prime Contractor shall designate a representative to attend and chair warranty meetings that will be held each month at the project site for the duration of the warranty period, with government and subcontractor personnel as necessary. The meeting shall review past warranty corrections and response times, open warranty items, up-coming scheduled corrections, site investigations, and other issues.

1.2 ADDITIONAL WARRANTY REQUIREMENTS

1.2.1 Performance Bond

(a) It is understood that the Contractor's Performance Bond will remain effective for one (1) year from the date of acceptance.

(b) If either the Contractor or his representative doesn't diligently pursue warranty work to completion, the contractor and surety will be liable for all costs. The Government, at its option, will either have the work performed by others or require the surety to have it done. Both direct and administrative costs will be reimbursable to the Government.

1.2.2 Pre-Warranty Conference

(a) Prior to contract completion and at a time designated by the Contracting Officer or his authorized representative, the Contractor shall meet with the Contracting Officer or his authorized representative to develop a mutual understanding with respect to the requirements of the Paragraph: WARRANTY OF CONSTRUCTION. Communication procedures for Contractor notification of warranty defects, priorities with respect to the type of defect and other

details deemed necessary by the Contracting Officer or his authorized representative for the execution of the construction warranty shall be established/reviewed at this meeting.

(b) In connection with these requirements and at the time of the Contractor's quality control completion inspection, the Contractor will furnish the name, telephone number and address of the service representative which is authorized to initiate and pursue warranty work action on behalf of the Contractor and surety. This single point of contact will be located within the local service area of the warranted construction, will be continuously available, and will be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any Contractual responsibilities in connection with the paragraph: WARRANTY OF CONSTRUCTION.

(c) Local service area is defined as the area in which the contractor or his representative can meet the response times as described in paragraph 1.2.4 and in any event shall not exceed 200 miles radius of the construction site.

1.2.3 Equipment Warranty Identification

The Contractor shall provide warranty identification tags on all mechanical and electrical equipment installed under this contract. Tags and installation shall be in accordance with the requirements of Paragraph: EQUIPMENT WARRANTY IDENTIFICATION TAGS.

1.2.4 Warranty Service Calls

The Contractor or his local service representative will respond to the site, to a call within the time periods as follows: Four (4) hours for Heating, Air Conditioning, Refrigeration, Air Supply and Distribution, Critical Electrical service Systems and Food Service Equipment and Twenty-Four (24) hours For All Other Systems.

1.2.5 Equipment Warranty Booklet

At or before 30 days prior to final inspection and acceptance of the work, the Contractor shall submit the data mentioned as follows:

The Contractor shall provided a Booklet, which consists of a listing of all equipment items (see paragraphs a. and b. below) which are specified to be guaranteed along with the warranty papers for each piece of equipment. Three (3) legible bound copies of the booklet shall be submitted for approval and shall be indexed alphabetically by equipment type. For each specific guaranteed item, the name, address, and telephone number shall be shown on the list for the subcontractor who installed equipment, equipment supplier or distributor, and equipment manufacturer. Completion date of the guarantee period shall correspond to the applicable specification requirements for each guaranteed item. The names of service representatives that will make warranty calls along with the day, night, weekend and holiday contacts for response to a call within the time period specified shall also be identified.

a. For Equipment in Place: The equipment list shall show unit retail value and nameplate data including model number, size, manufacturer, etc. This would include capital equipment and other nonexpendable supplies of a movable nature that are not affixed as an integral part of the facility and

may be removed without destroying or reducing the usefulness of the facility. Some examples are spare parts, special tools, manufacturing equipment, maintenance equipment, instruments, installed under this contract.

b. For Installed Building Equipment: The equipment list shall show unit retail value and nameplate data including model number, size, manufacturer, etc. This would include items of equipment and furnishings (including material for installation thereof), which are required to make the facility usable and are affixed as a permanent part of the structure. Some examples are plumbing fixtures, laboratory counters and cabinets, kitchen equipment, mechanical equipment, electrical equipment, and fire protection systems installed under this contract.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330SUBMITTAL PROCEDURES:

SD-11 Closeout Submittals

Equipment Warranty Booklet

1.4 EQUIPMENT WARRANTY IDENTIFICATIONS TAGS

1.4.1 GENERAL REQUIREMENTS

The Contractor shall provide warranty identification tags on all Contractor and government furnished equipment which is Contractor installed.

1.4.1.1 Tags and Information

The tags and information shall be similar in format and size to the exhibits provided by this specification, and shall be suitable for interior and exterior locations, resistant to solvents, abrasion, and to fading caused by sunlight, precipitation, etc. These tags shall have a permanent pressure- sensitive adhesive back, and shall be installed in a position that is easily (or most easily) noticeable. If the equipment surface is not suitable for adhesive back, Contractor shall submit his alternative to the Contracting Officer's Authorized Representative for review and approval. Contractor furnished equipment that has differing warranties on its components will have each component tagged.

1.4.1.2 Tags for Warranted Equipment

The tag for his equipment shall be similar to the following:

```
+-------------------------------------------+
|            EQUIPMENT WARRANTY             |
|                                           |
|      CONTRACTOR FURNISHED EQUIPMENT       |
|                                           |
|                                           |
| MFG----------------MODEL NO.-----------  |
|                                           |
| SERIAL NO.------------------------------ |
```

```
|                                          |
| CONTRACT NO.---------------------------- |
|                                          |
| CONTRACTOR NAME------------------------- |
|                                          |
| CONTRACTOR ADDRESS---------------------- |
|                                          |
| CONTRACTOR TELEPHONE-------------------- |
|                                          |
| CONTRACTOR WARRANTY EXPIRES------------- |
|                                          |
| IN CASE OF WARRANTY ACTION FIRST CONTACT |
|                                          |
|     [DEH] [BCE] AT [TELEPHONE NUMBER]    |
|                                          |
+------------------------------------------+
```

```
+-------------------------------------------------+
|                                                 |
|                EQUIPMENT WARRANTY               |
|                                                 |
|          GOVERNMENT FURNISHED EQUIPMENT         |
|                                                 |
|  MFG ________________  MODEL NO._______________ |
|                                                 |
|  SERIAL NO. ___________________________________ |
|                                                 |
|  CONTRACT NO. _________________________________ |
|                                                 |
|  DATE EQUIP PLACED IN SERVICE ________________  |
|                                                 |
+-------------------------------------------------+
```

1.4.1.3 Exclusion to Providing Tags

If the manufacturer's name (MFG), model number and serial number are on the manufacturer's equipment data plate and this data plate is easily found and fully legible, this information need not be duplicated on the equipment warranty tag. The Contractor's warranty expiration date and the final manufacturer's warranty expiration date will be determined as specified by the Paragraph "WARRANTY OF CONSTRUCTION".

1.4.2 EXECUTION

The Contractor will complete the required information on each tag and install these tags on the equipment by the time of and as a condition of final acceptance of the equipment. The Contractor shall be responsible for scheduling acceptance inspection with the Contracting Officer (verbal and written notification required). If this inspection is delayed by the Contractor, the Contractor shall, at his own expense, update the in-service and warranty expiration dates on these tags.

1.4.3 Equipment Warranty Tag Replacement

Under the terms of this contract, the Contractor's warranty with respect to work repaired or replaced shall run for one year from the date of repair or replacement. Such activity shall include a data warranty identification tag on the repaired or replaced equipment. The tag shall be furnished and

installed by the Contractor, and shall be similar to the original tag, except that it should include the scope of repair and that the contractor's warranty expiration date will be one year from the date of acceptance of the repair or replacement. In the case of repair, the repair only will be covered by the extended warranty. In the case of replacement of a component, the component only will be covered by the extended warranty. In these cases, the original tags will not be removed, but an additional tag will be installed for the repair or component replacement.

1.5 WARRANTY OF DESIGN

(a) Foremost and in addition to any other warranties in this contract, the Contractor warrants that the design shall be performed in accordance with the Contract requirements. Design and design related construction not conforming to the Contract requirements shall be corrected at no additional cost to the Government. The standard of care for design is defined in paragraph (b) of Section 00800 SPECIAL CONTRACT REQUIREMENTS "RESPONSIBILITY OF THE CONTRACTOR FOR DESIGN".

(b) The period of this warranty shall commence upon final completion and the Government's acceptance of the work, or in the case of the Government's beneficial occupancy of all or part of the work for its convenience, prior to final completion and acceptance, at the time of such occupancy.

(c) This design warranty shall be effective from the above event through the Statue of Limitations and Statute of Repose, as applicable to the state that the project is located in.

(d) The rights and remedies of the Government provided for under this clause are in addition to any other rights and remedies provided in this contract or by law.

PART 2 NOT USED

PART 3 NOT USED

-- End of Section --

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SECTION 01320A

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05/02; Omaha Rev. 01/04

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SECTION 01320A

PROJECT SCHEDULE
05/02; Omaha Rev. 01/04

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of the specification to the extent referenced. The publications are referenced in the text by basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

ER 1-1-11	(1995) Progress, Schedules, and Network Analysis Systems

1.2 QUALIFICATIONS

The Contractor shall designate an authorized representative who shall be responsible for the preparation of all required project schedule reports.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

Pursuant to the Contract Clause, SCHEDULE FOR CONSTRUCTION CONTRACTS, a Project Schedule as described below shall be prepared. The scheduling of design and construction shall be the responsibility of the Contractor. Contractor management personnel shall actively participate in its development. Designers, Subcontractors and suppliers working on the project shall also contribute in developing and maintaining an accurate Project Schedule. The approved Project Schedule shall be used to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis of all progress payments. The scheduler shall be a direct employee of the prime contractor and have a minimum of 2 years experience in scheduling.

3.2 BASIS FOR PAYMENT

The schedule shall be the basis for measuring Contractor progress. Lack of an approved schedule or scheduling personnel will result in an inability of the Contracting Officer to evaluate Contractor's progress for the purposes of payment. Failure of the Contractor to provide all information, as specified below, shall result in the disapproval of the entire Project Schedule submission and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. In the case where Project Schedule revisions have been directed by the Contracting Officer and those revisions have not been included in the Project Schedule, the Contracting Officer may hold retainage up to the maximum allowed by contract, each payment period, until revisions to the Project Schedule have

been made.

3.3 PROJECT SCHEDULE

The computer software system utilized by the Contractor to produce the Project Schedule shall be capable of providing all requirements of this specification. Failure of the Contractor to meet the requirements of this specification shall result in the disapproval of the schedule. Manual methods used to produce any required information shall require approval by the Contracting Officer.

3.3.1 Use of the Critical Path Method

The Critical Path Method (CPM) of network calculation shall be used to generate the Project Schedule. The Contractor shall provide the Project Schedule in the Precedence Diagram Method (PDM).

3.3.2 Level of Detail Required

The Project Schedule shall include an appropriate level of detail. Failure to develop or update the Project Schedule or provide data to the Contracting Officer at the appropriate level of detail, as specified by the Contracting Officer, shall result in the disapproval of the schedule. The Contracting Officer will use, but is not limited to, the following conditions to determine the appropriate level of detail to be used in the Project Schedule:

3.3.2.1 Activity Durations

Contractor submissions shall follow the direction of the Contracting Officer regarding reasonable activity durations. Reasonable durations are those that allow the progress of activities to be accurately determined between payment periods (usually less than 2 percent of all non-procurement activities' Original Durations are greater than 20 days).

3.3.2.2 Design and Permit Activities

Design and permitting activities, including necessary conferences and follow-up actions and design package submission dates, shall be integrated into the schedule.

3.3.2.3 Procurement Activities

Tasks related to the procurement of long lead materials or equipment shall be included as separate activities in the project schedule. Long lead materials and equipment are those materials that have a procurement cycle of over 90 days. Examples of procurement process activities include, but are not limited to: submittals, approvals, procurement, fabrication, and delivery.

3.3.2.4 Critical Activities

The following activities shall be listed as separate line activities on the Contractor's project schedule:

a. Submission and approval of mechanical/electrical layout drawings.

b. Submission and approval of O & M manuals.

c. Submission and approval of as-built drawings.

d. Submission and approval of 1354 data and installed equipment lists.

e. Submission and approval of testing and air balance (TAB).

f. Submission of TAB specialist design review report.

g. Submission and approval of fire protection specialist.

h. Submission and approval of testing and balancing of HVAC plus commissioning plans and data.

i. Air and water balance dates.

j. HVAC commissioning dates.

k. Controls testing plan.

l. Controls testing.

m. Performance Verification testing.

n. Other systems testing, if required.

o. Prefinal inspection.

p. Correction of punchlist from prefinal inspection.

q. Final inspection.

3.3.2.5 Government Activities

Government and other agency activities that could impact progress shall be shown. These activities include, but are not limited to: approvals, design reviews, environmental permit approvals by State regulators, inspections, utility tie-in, Government Furnished Equipment (GFE) and Notice to Proceed (NTP) for phasing requirements.

3.3.2.6 Responsibility

All activities shall be identified in the project schedule by the party responsible to perform the work. Responsibility includes, but is not limited to, the subcontracting firm, contractor work force, or government agency performing a given task. Activities shall not belong to more than one responsible party. The responsible party for each activity shall be identified by the Responsibility Code.

3.3.2.7 Work Areas

All activities shall be identified in the project schedule by the work area in which the activity occurs. Activities shall not be allowed to cover more than one work area. The work area of each activity shall be identified by the Work Area Code.

3.3.2.8 Modification or Claim Number

Any activity that is added or changed by contract modification or used to

justify claimed time shall be identified by a mod or claim code that changed the activity. Activities shall not belong to more than one modification or claim item. The modification or claim number of each activity shall be identified by the Mod or Claim Number. Whenever possible, changes shall be added to the schedule by adding new activities. Existing activities shall not normally be changed to reflect modifications.

3.3.2.9 Bid Item

All activities shall be identified in the project schedule by the Bid Item to which the activity belongs. An activity shall not contain work in more than one bid item. The bid item for each appropriate activity shall be identified by the Bid Item Code.

3.3.2.10 Phase of Work

All activities shall be identified in the project schedule by the phases of work in which the activity occurs. Activities shall not contain work in more than one phase of work. The project phase of each activity shall be by the unique Phase of Work Code.

3.3.2.11 Category of Work

All Activities shall be identified in the project schedule according to the category of work which best describes the activity. Category of work refers, but is not limited, to the procurement chain of activities including such items as designs, design package submissions design reviews, review conferences, permits, submittals, approvals, procurement, fabrication, delivery, installation, start-up, and testing. The category of work for each activity shall be identified by the Category of Work Code.

3.3.2.12 Feature of Work

All activities shall be identified in the project schedule according to the feature of work to which the activity belongs. Feature of work refers, but is not limited to, a work breakdown structure for the project. The feature of work for each activity shall be identified by the Feature of Work Code.

3.3.3 Scheduled Project Completion

The schedule interval shall extend from NTP to the contract completion date.

3.3.3.1 Project Start Date

The schedule shall start no earlier than the date on which the NTP was acknowledged. The Contractor shall include as the first activity in the project schedule an activity called "Start Project". The "Start Project" activity shall have an "ES" constraint date equal to the date that the NTP was acknowledged, and a zero day duration.

3.3.3.2 Constraint of Last Activity

Completion of the last activity in the schedule shall be constrained by the contract completion date. Calculation on project updates shall be such that if the early finish of the last activity falls after the contract completion date, then the float calculation shall reflect a negative float on the critical path. The Contractor shall include as the last activity in the project schedule an activity called "End Project". The "End Project"

activity shall have an "LF" constraint date equal to the completion date for the project, and a zero day duration.

3.3.3.3 Early Project Completion

In the event the project schedule shows completion of the project prior to the contract completion date, the Contractor shall identify those activities that have been accelerated and/or those activities that are scheduled in parallel to support the Contractor's "early" completion. Contractor shall specifically address each of the activities noted in the narrative report at every project schedule update period to assist the Contracting Officer in evaluating the Contractor's ability to actually complete prior to the contract period.

3.3.4 Interim Completion Dates

Contractually specified interim completion dates shall also be constrained to show negative float if the early finish date of the last activity in that phase falls after the interim completion date.

3.3.4.1 Start Phase

The Contractor shall include as the first activity for a project phase an activity called "Start Phase X" where "X" refers to the phase of work. The "Start Phase X" activity shall have an "ES" constraint date equal to the date on which the NTP was acknowledged, and a zero day duration.

3.3.4.2 End Phase

The Contractor shall include as the last activity in a project phase an activity called "End Phase X" where "X" refers to the phase of work. The "End Phase X" activity shall have an "LF" constraint date equal to the completion date for the project, and a zero day duration.

3.3.4.3 Phase X

The Contractor shall include a hammock type activity for each project phase called "Phase X" where "X" refers to the phase of work. The "Phase X" activity shall be logically tied to the earliest and latest activities in the phase.

3.3.5 Default Progress Data Disallowed

Actual Start and Finish dates shall not be automatically updated by default mechanisms that may be included in CPM scheduling software systems. Actual Start and Finish dates on the CPM schedule shall match those dates provided from Contractor Quality Control Reports. Failure of the Contractor to document the Actual Start and Finish dates on the Daily Quality Control report for every in-progress or completed activity, and failure to ensure that the data contained on the Daily Quality Control reports is the sole basis for schedule updating shall result in the disapproval of the Contractor's schedule and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. Updating of the percent complete and the remaining duration of any activity shall be independent functions. Program features which calculate one of these parameters from the other shall be disabled.

3.3.6 Out-of-Sequence Progress

Activities that have posted progress without all preceding logic being satisfied (Out-of-Sequence Progress) will be allowed only on a case-by-case approval of the Contracting Officer. The Contractor shall propose logic corrections to eliminate all out of sequence progress or justify not changing the sequencing for approval prior to submitting an updated project schedule.

3.3.7 Negative Lags

Lag durations contained in the project schedule shall not have a negative value.

3.4 PROJECT SCHEDULE SUBMISSIONS

The Contractor shall provide the submissions as described below. The data disk, reports, and network diagrams required for each submission are contained in paragraph SUBMISSION REQUIREMENTS.

3.4.1 Preliminary Project Schedule Submission

The Preliminary Project Schedule, defining the Contractor's planned operations for the first 60 calendar days shall be submitted for approval within 20 calendar days after the NTP is acknowledged. The approved preliminary schedule shall be used for payment purposes not to exceed 60 calendar days after NTP.

3.4.2 Initial Project Schedule Submission

The Initial Project Schedule shall be submitted for approval within 40 calendar days after NTP. The schedule shall provide a reasonable sequence of activities which represent work through the entire project and shall be at a reasonable level of detail.

3.4.3 Monthly Schedule Updates

Based on the result of progress meetings, specified in "Monthly Progress Meetings," the Contractor shall submit monthly schedule updates. These submissions shall enable the Contracting Officer to assess Contractor's progress. If the Contractor fails or refuses to furnish the information and project schedule data, which in the judgement of the Contracting Officer or authorized representative is necessary for verifying the Contractor's progress, the Contractor shall be deemed not to have provided an estimate upon which progress payment may be made.

3.4.4 Standard Activity Coding Dictionary

The Contractor shall use the activity coding structure defined in the Standard Data Exchange Format (SDEF) in ER 1-1-11, Appendix A. This exact structure is mandatory, even if some fields are not used.

3.5 SUBMISSION REQUIREMENTS

The following items shall be submitted by the Contractor for the preliminary submission, initial submission, and every monthly project schedule update throughout the life of the project:

3.5.1 Data Disks

Two data disks containing the project schedule shall be provided. Data on the disks shall adhere to the SDEF format specified in ER 1-1-11, Appendix A.

3.5.1.1 File Medium

Required data shall be submitted on 3.5 disks, formatted to hold 1.44 MB of data, compatible with Microsoft Windows 95/98 operating systems, unless otherwise approved by the Contracting Officer.

3.5.1.2 Disk Label

A permanent exterior label shall be affixed to each disk submitted. The label shall indicate the type of schedule (Preliminary, Initial, Update, or Change), full contract number, project name, project location, data date, name and telephone number or person responsible for the schedule.

3.5.1.3 File Name

Each file submitted shall have a name related to either the schedule data date, project name, or contract number. The Contractor shall develop a naming convention that will ensure that the names of the files submitted are unique. The Contractor shall submit the file naming convention to the Contracting Officer for approval.

3.5.2 Narrative Report

A Narrative Report shall be provided with the preliminary, initial, and each update of the project schedule. This report shall be provided as the basis of the Contractor's progress payment request. The Narrative Report shall include: a description of activities along the 2 most critical paths, a description of current and anticipated problem areas or delaying factors and their impact, and an explanation of corrective actions taken or required to be taken. The narrative report is expected to relay to the Government, the Contractor's thorough analysis of the schedule output and its plans to compensate for any problems, either current or potential, which are revealed through that analysis.

3.5.3 Approved Changes Verification

Only project schedule changes that have been previously approved by the Contracting Officer shall be included in the schedule submission. The Narrative Report shall specifically reference, on an activity by activity basis, all changes made since the previous period and relate each change to documented, approved schedule changes.

3.5.4 Schedule Reports

The format for each activity for the schedule reports listed below shall contain: Activity Numbers, Activity Description, Original Duration, Remaining Duration, Early Start Date, Early Finish Date, Late Start Date, Late Finish Date, Total Float. Actual Start and Actual Finish Dates shall be printed for those activities in progress or completed.

3.5.4.1 Activity Report

A list of all activities sorted according to activity number.

3.5.4.2 Logic Report

A list of Preceding and Succeeding activities for every activity in ascending order by activity number. Preceeding and succeeding activities shall include all information listed above in paragraph Schedule Reports. A blank line shall be left between each activity grouping.

3.5.4.3 Total Float Report

A list of all incomplete activities sorted in ascending order of total float. Activities which have the same amount of total float shall be listed in ascending order of Early Start Dates. Completed activities shall not be shown on this report.

3.5.4.4 Earnings Report

A compilation of the Contractor's Total Earnings on the project from the NTP until the most recent Monthly Progress Meeting. This report shall reflect the Earnings of specific activities based on the agreements made in the field and approved between the Contractor and Contracting Officer at the most recent Monthly Progress Meeting. Provided that the Contractor has provided a complete schedule update, this report shall serve as the basis of determining Contractor Payment. Activities shall be grouped by bid item and sorted by activity numbers. This report shall: sum all activities in a bid item and provide a bid item percent; and complete and sum all bid items to provide a total project percent complete. The printed report shall contain, for each activity: the Activity Number, Activity Description, Original Budgeted Amount, Total Quantity, Quantity to Date, Percent Complete (based on cost), and Earnings to Date.

3.5.5 Network Diagram

The network diagram shall be required on the initial schedule submission and on monthly schedule update submissions. The network diagram shall depict and display the order and interdependence of activities and the sequence in which the work is to be accomplished. The Contracting Officer will use, but is not limited to, the following conditions to review compliance with this paragraph:

3.5.5.1 Continuous Flow

Diagrams shall show a continuous flow from left to right with no arrows from right to left. The activity number, description, duration, and estimated earned value shall be shown on the diagram.

3.5.5.2 Project Milestone Dates

Dates shall be shown on the diagram for start of project, any contract required interim completion dates, and contract completion dates.

3.5.5.3 Critical Path

The critical path shall be clearly shown.

3.5.5.4 Banding

Activities shall be grouped to assist in the understanding of the activity sequence. Typically, this flow will group activities by category of work,

work area and/or responsibility.

3.5.5.5 S-Curves

Earnings curves showing projected early and late earnings and earnings to date.

3.6 PERIODIC PROGRESS MEETINGS

Progress meetings to discuss payment shall include a monthly onsite meeting or other regular intervals mutually agreed to at the preconstruction conference. During this meeting the Contractor shall describe, on an activity by activity basis, all proposed revisions and adjustments to the project schedule required to reflect the current status of the project. The Contracting Officer will approve activity progress, proposed revisions, and adjustments as appropriate.

3.6.1 Meeting Attendance

The Contractor's Project Manager and Scheduler shall attend the regular progress meeting.

3.6.2 Update Submission Following Progress Meeting

A complete update of the project schedule containing all approved progress, revisions, and adjustments, based on the regular progress meeting, shall be submitted not later than 4 working days after the monthly progress meeting.

3.6.3 Progress Meeting Contents

Update information, including Actual Start Dates, Actual Finish Dates, Remaining Durations, and Cost-to-Date shall be subject to the approval of the Contracting Officer. As a minimum, the Contractor shall address the following items on an activity by activity basis during each progress meeting.

3.6.3.1 Start and Finish Dates

The Actual Start and Actual Finish dates for each activity currently in-progress or completed.

3.6.3.2 Time Completion

The estimated Remaining Duration for each activity in-progress. Time-based progress calculations shall be based on Remaining Duration for each activity.

3.6.3.3 Cost Completion

The earnings for each activity started. Payment will be based on earnings for each in-progress or completed activity. Payment for individual activities will not be made for work that contains quality defects. A portion of the overall project amount may be retained based on delays of activities.

3.6.3.4 Logic Changes

All logic changes pertaining to NTP on change orders, change orders to be incorporated into the schedule, contractor proposed changes in work

sequence, corrections to schedule logic for out-of-sequence progress, lag durations, and other changes that have been made pursuant to contract provisions shall be specifically identified and discussed.

3.6.3.5 Other Changes

Other changes required due to delays in completion of any activity or group of activities include: 1) delays beyond the Contractor's control, such as strikes and unusual weather. 2) delays encountered due to submittals, Government Activities, deliveries or work stoppages which make re-planning the work necessary. 3) Changes required to correct a schedule which does not represent the actual or planned prosecution and progress of the work.

3.7 REQUESTS FOR TIME EXTENSIONS

In the event the Contractor requests an extension of the contract completion date, or any interim milestone date, the Contractor shall furnish the following for a determination as to whether or not the Contractor is entitled to an extension of time under the provisions of the contract: justification, project schedule data, and supporting evidence as the Contracting Officer may deem necessary. Submission of proof of delay, based on revised activity logic, duration, and costs (updated to the specific date that the delay occurred) is obligatory to any approvals.

3.7.1 Justification of Delay

The project schedule shall clearly display that the Contractor has used, in full, all the float time available for the work involved with this request. The Contracting Officer's determination as to the number of allowable days of contract extension shall be based upon the project schedule updates in effect for the time period in question, and other factual information. Actual delays that are found to be caused by the Contractor's own actions, which result in the extension of the schedule, will not be a cause for a time extension to the contract completion date.

3.7.2 Submission Requirements

The Contractor shall submit a justification for each request for a change in the contract completion date of under 2 weeks based upon the most recent schedule update at the time of the NTP or constructive direction issued for the change. Such a request shall be in accordance with the requirements of other appropriate Contract Clauses and shall include, as a minimum:

a. A list of affected activities, with their associated project schedule activity number.

b. A brief explanation of the causes of the change.

c. An analysis of the overall impact of the changes proposed.

d. A sub-network of the affected area.

Activities impacted in each justification for change shall be identified by a unique activity code contained in the required data file.

3.7.3 Additional Submission Requirements

For any requested time extension of over 2 weeks, the Contracting Officer may request an interim update with revised activities for a specific change

request. The Contractor shall provide this disk within 4 days of the Contracting Officer's request.

3.8 DIRECTED CHANGES

If the NTP is issued for changes prior to settlement of price and/or time, the Contractor shall submit proposed schedule revisions to the Contracting Officer within 2 weeks of the NTP being issued. The proposed revisions to the schedule will be approved by the Contracting Officer prior to inclusion of those changes within the project schedule. If the Contractor fails to submit the proposed revisions, the Contracting Officer may furnish the Contractor with suggested revisions to the project schedule. The Contractor shall include these revisions in the project schedule until revisions are submitted, and final changes and impacts have been negotiated. If the Contractor has any objections to the revisions furnished by the Contracting Officer, the Contractor shall advise the Contracting Officer within 2 weeks of receipt of the revisions. Regardless of the objections, the Contractor shall continue to update the schedule with the Contracting Officer's revisions until a mutual agreement in the revisions is reached. If the Contractor fails to submit alternative revisions within 2 weeks of receipt of the Contracting Officer's proposed revisions, the Contractor will be deemed to have concurred with the Contracting Officer's proposed revisions. The proposed revisions will then be the basis for an equitable adjustment for performance of the work.

3.9 OWNERSHIP OF FLOAT

Float available in the schedule, at any time, shall not be considered for the exclusive use of either the Government or the Contractor.

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SECTION 01330

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09/01; Omaha Update 01/04

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SECTION 01330

SUBMITTAL PROCEDURES
09/01; Omaha Update 01/04

PART 1 GENERAL

Attachments: Submittal Register
ENG Form 4025, Transmittal Form

1.1 SUMMARY

This section includes administrative and procedural requirements for construction submittals presented by the Contractor after 100% corrected plans and specifications have been accepted by the government. This section also includes requirements for developing, submitting and maintaining a "Submittal Register".

1.2 CONTRACTOR RESPONSIBILITIES

The Contractor is responsible for total management of his work including approval, scheduling, control, and certification of all submittals. The submittal management system provided in these specifications is intended to be a complete system for the Contractor to use to control the quality of materials, equipment and workmanship provided by manufacturers, fabricators, suppliers and subcontractors. The Contractor shall review each submittal for contract compliance. The Submittal Register (ENG Form 4288) will be utilized to log and monitor all submittal activities. No construction or installation activities shall be performed prior to required approvals and Government compliance reviews of applicable submittals. The Contractor shall perform a check to assure that all materials and/or equipment have been tested, submitted and approved during the preparatory phase of quality control inspections. The Contractor shall coordinate all submittals with the Contractor's Designer (A-E). Approval by the Contractor's Designer means that the submittal is in compliance with the Construction Set design submittal.

1.3 SUBMITTAL IDENTIFICATION (SD)

Submittals required are identified by SD numbers and titles as follows:

SD-01 Preconstruction Submittals

Tabular lists showing location, features, or other pertinent information regarding products, materials, equipment, or components to be used in the work.

In addition, the following items are included:

Work plan
Quality control plan
Permits

SD-02 Shop Drawings

Submittals which graphically show relationship of various components of the work, schematic diagrams of systems, details of fabrication, layouts of particular elements, connections, and other relational aspects of the work.

SD-03 Product Data

Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials or equipment for some portion of the work.

Samples of warranty language when the contract requires extended product warranties.

SD-04 Samples

Samples, including both fabricated and unfabricated physical examples of materials, products, and units of work as complete units or as portions of units of work.

Physical examples of materials, equipment or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged. Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project.

Field samples and mock-ups constructed on the project site establish standards by which the ensuring work can be judged. Includes assemblies or portions of assemblies which are to be incorporated into the project and those which will be removed at conclusion of the work.

SD-05 Design Data

Calculations, mix designs, analyses or other data pertaining to a part of work.

SD-06 Test Reports

Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accordance with specified requirements. (Testing must have been within three years of date of contract award for the project.)

Report which includes findings of a test required to be performed by the contractor on an actual portion of the work or prototype prepared for the project before shipment to job site.

Report which includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.

Investigation reports

Daily checklists

Final acceptance test and operational test procedure

SD-07 Certificates

A document, required of the Contractor, or through the Contractor, from a supplier, installer, manufacturer, or other lower tier Contractor, the purpose of which is to confirm the quality or orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel, qualifications, or other verifications of quality.

Statement signed by an official authorized to certify on behalf of the manufacturer of a product, system or material, attesting that the product, system or material meets specified requirements. The statement must be dated after the award of the contract, must state the Contractor's name and address, must name the project and location, and must list the specific requirements which are being certified.

Confined space entry permits.

SD-08 Manufacturer's Instructions

Preprinted material describing installation of a product, system or material, including special notices and material safety data sheets, if any, concerning impedances, hazards, and safety precautions.

SD-09 Manufacturer's Field Reports

Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

Factory test reports.

SD-10 Operation and Maintenance Data

Data intended to be incorporated in operations and maintenance manuals.

SD-11 Closeout Submittals

Documentation to record compliance with technical or administrative requirements or to establish an administrative mechanism.

In addition, the following items are included:

As-built drawings
Special warranties
Posted operating instructions
Training plan

1.4 SUBMITTAL CLASSIFICATION

Unless directed otherwise, the words "Government Approval" associated with "G"-designated submittals shall be interpreted in the context of the below defined submittal types. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," all G-DO and G-AO submittals are considered to be "shop drawings".

Submittals are classified as follows:

1.4.1 Government Reviewed Design During Construction Submittals (G-DO)

"G-DO" submittals are those that involve 1)extensions of design for design

work performed by the Construction Contractor not previously included in the completed design Construction drawings and require a conformance review by the Government, and 2) "Revisions to the Accepted Design" and require acceptance by the Government in accordance with the below paragraph titled "Supplemental Design Submittals".

These submittals must be reviewed and approved by the Contractor's Designer of the responsible design organization and Contractor's QC System Manager, prior to submittal to the Government for conformance review. Conformance review only checks for compliance with the RFP solicitation requirements. Conformance review of "G-DO" submittals or lack thereof by the Government does not relieve the Contractor of its responsibility for the design and construction. Government review will not include development of design calculations or other means of determining adequacy of design. The Contractor and his designer retains the sole responsibility for adequacy of design.

The below listed "G-DO" submittals require a conformance review by the Government, unless previously included in completed design.

G-DO Type submittals:

1. Fire Suppression Systems defined in sections 13930, 13935, and other sections related to fire suppression that are required by the contract.

SD-02 Shop Drawings:
   Shop Drawings
SD-03 Product Data:
   Fire Protection Related Submittals
   Sway Bracing
   Materials and Equipment
   Hydraulic Calculations
   Spare Parts
   Fire Protection Specialist

2. Fire Detection Systems defined in sections 13850, 13851, and other sections related to fire detection that are required by the contract.

SD-02 Shop Drawings:
   Fire Alarm Reporting System
SD-03 Product Data:
   Storage Batteries
   Voltage Drop
   Special Tools and Spare Parts
   Technical Data and Computer Software

3. HVAC Controls defined in sections 15950, 15951, and other sections related to HVAC controls that are required by the contract.

SD-02 Shop Drawings:
   HVAC Control System
SD-03 Product Data:
   Service Organizations
   Equipment Compliance Booklet

1.4.2 Government Reviewed Construction Submittals ("G-AO")

"G-AO" submittals are those that need to be reviewed for conformance to the contract by either the Area or Resident Office (as directed) and other

items as designated by the Contracting Officer's Representative. All "G-AO" submittals shall be reviewed and approved by the Contractor's Quality Control Representative and the Contractor's Designer prior to submittal to the Government. Conformance review only checks for compliance with the RFP solicitation requirements. Conformance review of "G-AO" submittals or lack thereof by the Government does not relieve the Contractor of its responsibility for the design and construction. Typical G-AO submittals are listed below.

· All Testing, Adjusting, and Balancing (TAB) submittals
· All System type testing procedures and acceptance reports (e.g., Fire Detection, Fire Protection, Security/Communication Systems, etc.)
· All O&M Manuals
· Other final operational type submittals such as Spare Parts Data, Framed Instructions, Warranty Information, etc.
· Training plans and schedules for Systems Training

1.4.3 Information Only (FIO)

All "FIO" submittals shall be reviewed and approved by the Contractor's Quality Control Representative and the Contractor's Designer prior to submittal to the Government. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above. The Contracting Officer has the option to perform a compliance review any submittal, but is not obligated to do so.

Listed below are typical examples of FIO submittals. This list is not all inclusive of all FIO submittals.

1. Structural steel
2. Lawn irrigation systems
3. Concrete reinforcement
4. Millwork/casework
5. Masonry reinforcement
6. Interior signage
7. Cathodic protection
8. Asbestos abatement layouts
9. Security systems
10. Interior / Exterior Finishes
11. Furniture Systems
12. Pavement Concrete mix designs (special use - non routine, e.g., Airfield Paving)
13. Asphalt mix designs (special use - non routine, e.g., Airfield Paving)
14. Finish samples for major finishes

NOTE: "FIO" IS ANY SUBMITTAL ITEM THAT DOES NOT HAVE A "G-DO" OR "G-AO" CLASSIFICATION.

1.4.4 Administrative Submittals

The submittal items listed below are not to be included on the Submittal Register (as discussed below). Unless directed otherwise by the Contracting Officer, the following administrative submittals shall be submitted to the Area or Resident (as directed) Office, for acceptance, via a Serial Letter: Quality Control Plans (Section 01451A CONTRACTOR QUALITY CONTROL), Accident Prevention Plans (Section 01400 SPECIAL SAFETY REQUIREMENTS, Revisions to Environmental Protection Plans (Section 01355A

ENVIRONMENTAL PROTECTION) and other submittals as directed by the Contracting Officer. Format for the Serial Letter shall be as directed by the Area or Resident Office.

1.4.5 Supplemental Design Submittals

If revisions to the accepted design (Construction Set) become necessary, the contractor shall submit a supplemental design package and the revisions will be considered a "Variation". The Contractor shall submit this Supplemental Design Package as a construction submittal in accordance with the below paragraph titled "Variations".

1.5 GOVERNMENT REVIEWED SUBMITTALS

The Contracting Officer's review of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information appear to meet the Solicitation requirements. Government Review will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the Design and CQC requirements of this contract is responsible for design, compliance with design criteria required in the solicitation, dimensions, all design extensions, such as the design of adequate connections and details, etc. and the satisfactory construction of all work. After submittals have been reviewed for conformance or approval, as applicable, by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless the procedures outlined in the below paragraph "Variations" are followed.

1.6 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer, obtain the Contractor's Designer approval and Government review, or approval, when applicable, and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. Any submittal found to contain errors or unapproved variations from the solicitation or accepted proposal, shall be resubmitted. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause "Changes" shall be given promptly to the Contracting Officer.

1.7 WITHHOLDING OF PAYMENT

No Payment for materials incorporated in the work will be made if all required Designer or Contractor Quality Control Representative approvals or required Government conformance reviews, or appprovals, as applicable, have not been obtained. No payment will be made for any materials incorporated in the work for any conformance review submittals or information only submittals found to contain errors or deviations from the Solicitation or Accepted Proposal.

1.8 GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready

determination of compliance with contract requirements. The Contractor's Quality Control (CQC) System Manager and the Designer shall check, approve and stamp, sign, and date each item, indicating action taken. Proposed variations from the contract requirements or accepted 100% corrected design shall be proposed as per the direction in the below paragraph "Variations".

Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring conformance review or approval by the Government shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

1.9 SUBMITTAL REGISTER AND ENG FORM 4288 (RMS) SUBMITTAL REGISTER

The Contractor's Designer(s) shall develop a complete list of required construction submittals as part of the 100% Corrected Design Documents as outlined in RFP Section 01332, DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES. Additionally, using the Government's Resident Management System (RMS) software, the Government will generate from the design SpecsIntact file, a ENG Form 4288 Submittal Register for govenrment use in tracking the construction submittals. The Contractor shall use the Government-generated submittal register from RMS to track submittal requirements. The Contractor shall maintain a ENG Form 4288 (RMS) for the project in accordance with the attached ENG Form 4288 (RMS) Instructions.

The Contractor will be furnished one (1) set of ENG Forms 4288 (RMS) at the preconstruction conference on which will be listed each item of equipment and material of each type for which fabricators' drawings, and/or related descriptive data, test reports, samples, spare parts lists, O&M manuals, or other types of submittals are required by the completed project specifications. The Contractor shall complete the appropriate columns as indicated on the attached ENG Form 4288 (RMS) Instructions and return to the Contracting Officer for acceptance within 20 calendar days after the preconstruction conference. Upon acceptance of the ENG Form 4288 (RMS) by the Contracting Officer, the ENG Form 4288 (RMS) will serve as a scheduling document for submittals and will be used to control submittal actions throughout the contract period. The ENG Form 4288 (RMS) ACTIVITY NO. is filled in when a network analysis system is a contract requirement. The TRANSMITTAL NO. shall be left blank and used later to record the respective transmittal number corresponding to those listed on the transmittal form entitled: "TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE" (ENG Form 4025). The approved ENG Form 4288 (RMS) will become the scheduling document and will be used to control submittals throughout the life of the contract. The submittal register and the progress schedules shall be coordinated. Updates to the submittal register showing the Contractor action codes and actual dates shall be submitted monthly or until all submittals have been satisfactorily completed. When the progress schedule is revised, the ENG Form 4288 (RMS) shall also be revised and both submitted for approval.

1.10 SCHEDULING

Submittals covering component items forming a system or items that are

interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 20 calendar days exclusive of mailing time) shall be allowed and shown on the register for conformance reviews by the Contracting Officer for submittals requiring Government review and for submittals which vary from the solicitation or accepted 100% corrected design. No delay damages or time extensions will be allowed for time lost in late submittals.

1.11 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting all submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

1.12 SUBMITTAL PROCEDURES

Submittals shall be made as follows:

1.12.1 "G-DO" Submittals

All "G-DO" submittals shall be reviewed and approved by the Contractor's Quality Control Representative and Contractor's Designer prior to submittal to the Government. A conformance review is required by the Government on all "G-DO" submittals, prior to construction of the related items.

Except as noted below, all items listed as "G-DO" Submittals in the various sections or on the Submittal Register shall be submitted in seven (7) copies. All seven (7) copies shall be mailed directly to the addressee shown below using the transmittal form. Additionally, one (1) copy of the transmittal form shall be submitted to the Area Engineer.

Technical Reviewer
Engineering Division (DO)
Attn: CENWO-ED-DI
U.S. Army Engineer District, Omaha
106 South 15th Street
Omaha, NE 68102-1618

Items not to be submitted in multiples, such as samples and test cylinders, shall be submitted to the Area or Resident Engineer (as directed), accompanied by seven (7) copies of the transmittal form.

Each required submittal, which is in the form of a drawing, shall be submitted as seven (7) prints of the drawing. Drawing prints shall be either blue or black line permanent-type prints on a white background or blueprint and shall be sufficiently clear and suitable for making legible copies.

Catalog cuts and other descriptive data which have more than one model, size, or type or which shows optional equipment shall be clearly marked to show the model, size, or type and all optional equipment which is provided. Submittals on component items forming a system or that are interrelated shall be submitted at one time as a single submittal in order to

demonstrate that the items have been properly coordinated and will function as a unit.

An additional copy of all submittals related to fire protection/detection systems shall be submitted concurrently to the Base Civil Engineering or Post DPW Office. The mailing address for these submittals shall be obtained at the preconstruction conference.

1.12.2 "G-AO" and FIO Submittals

Except as noted below, data for all items listed as "G-AO" Submittals in the various sections shall be submitted in five (5) copies. All five copies shall be submitted to the Area Engineer for solicitation conformance review using the transmittal form. Items not to be submitted in multiples, such as samples and test cylinders, shall be submitted to the Area or Resident Engineer (as directed) accompanied by five (5) copies of the transmittal form.

Except as noted below, data for all items listed as "FIO" Submittals in the various sections shall be submitted in three (3) copies. All three copies shall be submitted to the Area Engineer using the transmittal form. Items not to be submitted in multiples, such as samples and test cylinders, shall be submitted to the Area or Resident Engineer (as directed) accompanied by three (3) copies of the transmittal form.

All "G-AO" and "FIO" submittals shall be reviewed and approved by the Contractor's Quality Control Representative and Contractor's Designer prior to submittal to the Government. A completed Government conformance review is required on all "G-AO" submittals, prior to construction of the related items.

The Government has the option to review any For Information Only submittals.

1.12.3 Certificates of Compliance

Each certificate shall be signed by an official authorized to certify in behalf of the manufacturing company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from furnishing satisfactory material, if, after tests are performed on selected samples, the material is found not to meet the specific requirements.

1.12.4 Purchase Orders

Copies of purchase orders shall be furnished to the Contracting Officer when the Contractor requests assistance for expediting deliveries of equipment or materials, or when requested by the Contracting Officer for the purpose of quality assurance review. Each purchase order issued by the Contractor or his subcontractors for materials and equipment to be incorporated into the project shall (1) be clearly identified with the applicable DA contract number, (2) carry an identifying number, (3) be in sufficient detail to identify the material being purchased, (4) indicate a definite delivery date, and (5) display the DMS priority rating, if applicable.

1.12.5 Operation and Maintenance Instructions and/or Manuals

Where required by various technical sections, operations and maintenance instructions and/or manuals with parts lists included shall be provided by the Contractor in quintuplicate, unless otherwise specified, and shall be assembled in three-ring binders with index and tabbed section divider and having a cover indicating the contents by equipment or system name and project title and shall be submitted to the Area Engineer for approval (after approval by the Contractor's Quality Control Representative), 90 days prior to final tests of mechanical and electrical systems, unless otherwise specified. Each operation and maintenance manual shall contain a copy of all warranties. If field testing requires these copies to be revised, they shall be updated and resubmitted for review within 10 calendar days after completion of tests. The Operations and Maintenance Instructions and/or Manuals shall be shown as a separate activity on the Contractor prepared construction schedule bar chart or network analysis system. In additon, one reproducible unfolded copy of all wiring and control diagrams and approved system layout drawings shall be submitted with the O&M Manuals.

1.12.6 Interior/Exterior Finish Sample and Data

All submittals regarding color boards (Section 09915 COLOR SCHEDULE) for interior finish samples and data shall be submitted concurrently and all submittals for exterior finish samples and data shall be submitted concurrently. These color boards are in addition to the samples required under the specfic technical specifications listed as "samples".

1.13 VARIATIONS

1.13.1 Necessity and Documentation of Variations

If revisions to the accepted design (Construction Set) become necessary, the contractor shall submit a supplemental design package using the "Supplemental Design Certification and Transmittal Form" that was included in the Request For Proposal, Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES. The revisions will be considered a "Variation" and the list of deviations from the accepted design shall be outlined on the Design Certification form. Variations from the Construction Set must be approved by the Contractor's Designer, and Contractor's Quality Control Representative and accepted by the Contracting Officer. The contractor shall set forth in writing the reason for any variations and clearly annotate such variations on the supplemental design. The narrative shall include documentation of the nature and features of the variation and why the variation is desirable and beneficial to the Government. The supplemental design submittal shall include drawings, specifications, design analysis and calculations necessary to establish that the proposed revision satisfies the contract requirements.

1.13.2 Submittal Procedure for Variations

The Contractor shall submit this Supplemental Design Package as a construction submittal, type G-DO as previously outlined herein, and shall check the "Variation" column (column 'h') of ENG Form 4025-R. The contractor shall distribute this submittal package (ENG Form 4025-R, completed Supplemental Design Certification, and supporting documentation) as a construction submittal and submit this package with the following identification:

Specification Section: 01451A, Contractor Quality Control
Item Number (column 'a'): *insert appropriate number of design revision*
Description of Item (column 'b'): "Revision to Accepted Design - *State topic*"

Because management of the design is a Quality Control issue and may affect numerous technical guide specifications, these items shall be submitted as a new submittal item under Section 01451A CONTRACTOR QUALITY CONTROL.

For example, "Item 3: Revision to Accepted Design - Louvers", would be the third revision to the accepted design and relates to "Louvers".

1.13.3 Rights and Responsibilities Associated with Variations

When submitting a variation for acceptance, the Contractor warrants that the contract has been reviewed to establish that the variation, if incorporated, will be compatible with other elements of the work. The Contractor shall take actions and bear the additional costs, including review costs by the Government, necessary due to the proposed variation. In addition to the submittal review period allowed elsewhere herein, the Contractor shall allow an additional ten (10) working days for consideration by the Government. The Government reserves the right to rescind inadvertent action codes of submittals containing unnoted variations that have not been submitted as a Supplemental Design Submittal with the accompanying Supplemental Design Certification.

1.14 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

1.15 FINAL COPY OF "G-DO" AND "G-AO" SUBMITTALS

Upon completion of review of submittals requiring Government acceptance, conformance review, or approval, the submittals will be identified as having received satisfactory review by being so stamped and dated.

1.15.1 "G-DO" Submittals

Two (2) copies of "G-DO" submittals, for acceptance and/or conformance review by the Government, will be returned to the Contractor, except for samples, test cylinders, and O&M manuals for which two (2) copies of the transmittal form only will be returned to the Contractor. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract.

1.15.2 "G-AO" Submittals

Two (2) copies of "G-AO" submittals for conformance review will be returned to the Contractor except for samples, test cylinders, and O&M manuals for which two (2) copies of the transmittal form only will be returned to the Contractor.

1.16 FINAL COPY OF INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of

the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

1.17 STAMPS

Stamps used by the Contractor's Designer and the Contractor's designated Quality Control person on the submittal data to certify that the submittal meets contract requirements shall be similar to the following (use two stamps for submittals reviewed by both):

CONTRACTOR

(Firm Name)

_____ Approved

_____ Approved with corrections as noted on submittal data and/or attached sheets(s).

SIGNATURE: _____

TITLE: _____

DATE: _____

INSTRUCTIONS
ENG FORM 4288 (RMS)

1. The Contractor shall utilize the ENG Form 4288 (RMS) generated by the Government Resident Management System (RMS) software for tracking construction submittals. The Government will furnish the Contractor a hard copy of the ENG Form 4288 (RMS) at the preconstruction conference. Listed below are the items included on the ENG Form 4288 (RMS) and parties responsible for completing the information required on the ENG Form 4288 (RMS) submittal register. The subparagraph headings below do not correspond to the Submittal Register column headings included in this solicitation.

a. Activity Number: will be provided by the Contractor from his Network Analysis, if required, and when a network analysis is accepted.

b1. Transmittal Number: will be provided by the Contractor on ENG Form 4025 for each transmittal at the time of submission of items to the Government.

b2. Item Number: will be provided by the Government on the ENG From 4288 (RMS) Submittal Register to be given to the Contractor at the Preconstruction Conference.

c. Specification Paragraph Number: will be provided by the Contractor from the Submittal Register from column entitled "Specification Paragraph Number".

d. Description of Submittal: will be provided by the Contractor from the Submittal Register from column entitled "Description of Item Submitted".

e. Type of Submittal: will be provided by the Contractor from the Submittal Register from column entitled "Type of Submittal" or "Description of Item Submitted".

f. Classification: will be provided by the Contractor from the Submittal Register from column entitled "Classification". Classification will be GA (Government Approval) or FIO (For Information Only).

g. Reviewer - Office/Name: will be provided by the Contractor from the Submittal Register from column entitled "Classification" or "Reviewer".

h. Contractor Schedule Dates: the Contractor will provide schedule dates for

"Submit Needed By" (Date the Contractor expects to submit an item. It is the Contractors responsibility to calculate the lead time needed for the government approval. Note if resubmittal is required it is the Contractors responsibility to make all adjustments necessary to meet the contract completion date.)

"Approval Needed By" (date the Contractor can receive approval and still obtain the material by need date.), and

"Material Needed By" (date that the material is needed at the site. If there is a network analysis it should reflect that date on the analysis.)

i. Contractor Action: Includes the following items: "Code" and "Submit to the Corps". These items will be completed by the Contractor and/or

Contractor's Designer. The action codes will be one of the following:

A - Approved as submitted.
B - Approved, except as noted.
G - Other (specify)

j. Government Action: This item includes a Government Action "Code" and "Date" and is reserved for Government use. The Government reserves the right to review any submittal for contract compliance. Receipt of an Action Code "F - Receipt Acknowledged" or failure of the Contractor to receive an Action Code by the Government, does not mean that the submittal is in compliance with the contract requirements. For this design-build soclicitaion, unless noted otherwise by the Contracting Officer, the Action Codes for this form, when used by the Government, will be one of the following:

A - Reviewed for conformance. No except taken
B - Reviewed for conformance. Exceptions as noted.
C - Reviewed for conformance. Exceptions as noted. Refer to attached ____ sheet resubmission required.
D - Will be returned by separate correspondence.
E - Reviewed. Does not comply (See Attached). Resubmission required.
F - Receipt Acknowledged.
Fx - Receipt acknowledged, does not comply as noted with contract requirements.
G - Other (specify).

2. Reviewer Abbreviation code will be as follows;

G-DO - Approved by Contractor's Designer, Contractor's Quality Control Representative and Acceptance or Conformance Review by the Government, as applicable. Approval by the Contractor's Designer means that the submittal complies with Construction Set design submittal or meets the requirements of a "Variation".

G-AO - Approved by Contracor's Quality Control Representative and Designer and conformance review by the Government.

For Information Only - All other submittals without a G-AO or G-DO abbreviation code, Approved by Contractors Quality Control Representative and/or Designer. The Government reserves the right review any submittal for conformance with the solicitation.

INSTRUCTIONS
ENG FORM 4025

1. DATE at the top of form will be the date submitted to the DOR which is to be completed by the Contractor.

2. TRANSMITTAL NO. Each new transmittal (i.e. G-DO, G-AO or FIO) shall be numbered consecutively for each specification section in the space provided in "Transmittal No.". This number will be the identifying symbol for each submittal. Example: "15400A-001", "15895A-001" "15895A-002", "16415A-001", etc. For each new submittal or for a resubmittal, the appropriate box must be marked. Resubmittals or supplemental submittals must be designated by their original sequential number followed by an ".1", ".2", etc. for each sequential resubmittal. Example: "15895A-001.1" (previous submittal No. 15895A-001). This will clearly annotate the resubmittal or supplemental submittals as related to the previous submittal.

3. TO: Box will contain the name and address of the office which will review the submittal (as designated by the Contracting Officer).

4. FROM: Box will be the name and address of the Contractor. Contractor is to complete this box.

5. CONTRACT NO. box will contain the Contractors construction contract number (e.g., W9128F-XX-C-XXXX).

6. CHECK ONE box

a. CHECK ONE box (for transmittal/ retransmittal) will be completed by the Contractor with one box marked. If a resubmittal is provided last transmittal number will be added.

b. CHECK ONE box will be completed by the Contractor with one box marked for the submittal type.

7. SPECIFICATION SECTION NO. box will be completed by the Contractor. The number will be the five digit number found in the specifications. No more than one section will be covered with each transmittal. **No more than one section will be covered with each transmittal.**

8. PROJECT TITLE AND LOCATION box will be completed by the Contractor.

9. Column a, will be completed by the Contractor and will contain a different number for each item submitted in that transmittal. **The item numbers will match the item numbers provided by the Government on the ENG Form 4288 (RMS) Submittal Register. Additional items shall only be submitted if requested by or coordinated with the Contracting Officer's Representative as necessary.**

10. Column b, will be completed by the Contractor. The description of each item on this form will match the descriptions provided on the ENG Form 4288 (RMS) Submittal Register. The Contractor shall submit each submittal register item all at once on one transmittal if possible. If a submittal register item can not be submitted all at once Contractor should note that in the remarks box.

11. Column c, will be completed by the Contractor. The information will be

the appropriate submittal description number as described in this Section or shown on the submittal register (e.g. SD-01, SD-02, etc.).

12. Column d, will be completed by the Contractor. The number of copies will be determined by the Contractor after review of submittal register for the classification of the item and after review of paragraph: SUBMITTAL PROCEDURES of this Section.

13. Column e, will be completed by the Contractor. The Contractor shall state all applicable paragraph numbers.

14. Column f, will be completed by the Contractor. The Contractor shall state all applicable drawing sheet numbers.

15. Column g, will be completed by the Contractor and/or Contractor's Designer. **Any transmittal without a Contractor action code may be returned by the Government without Government action. The Contractor QC must demonstrate that a review has been conducted by the Contractor.** The action codes will be one of the following:

A - Approved as submitted.
B - Approved, except as noted.
G - Other (specify)

16. Column h, will be completely by the Contractor. A check shall be placed in this column when a submittal is not in accordance with the plans and specifications also, a written statement to that effect shall be included in the space provided for "Remarks".

17. Column i, is reserved for Government use and may or may not be provided. For this design-build soclicitaion, unless noted otherwise by the Contracting Officer, the Action Codes for this form, when used by the Government, will be one of the following:

A - Reviewed for conformance. No except taken.
B - Reviewed for conformance. Exceptions as noted.
C - Reviewed for conformance. Exceptions as noted. Refer to attached ____ sheet resubmission required.
D - Will be returned by separate correspondence.
E - Reviewed. Does not comply (See Attached). Resubmission required.
F - Receipt Acknowledged.
Fx - Receipt acknowledged, does not comply as noted with contract requirements.
G - Other (specify).

18. REMARKS box: **Provide any information related to Variations. Also, provide any and all remarks that explain any deviations in descriptions, item numbers, additional or supplemental submittal items, etc. It is imperative to clearly communicate what is included on the transmittal and these pertinent 'remarks' can facilitate the review of the transmittal.**

19. Contractor Quality Control Manager must provide name and sign all Eng Form 4025 certifying conformance. **In the space for the name and signature, also include a phone number where the CQC Manager may be reached.**

20. Section II will be completed by the Contractor, unless approval is required by the Government.

See reverse side of ENG Form 4025 for additional instructions.

-- End of Section --

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SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
ADAL MISSION SUPPORT FACILITY. PETERSON AFB, CO

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG# RAPH	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY					MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		00800	SD-02 Shop Drawings															
			Equipment Room Drawings	1.27	G AO													
		01200	SD-11 Closeout Submittals															
			Equipment Warranty Booklet	1.2.5														
		15951	SD-03 Product Data															
			Equipment Compliance Booklet		G DO													
			Commissioning Procedures		G AO													
			Performance Verification Test		G AO													
			Procedures															
			Training Course Requirements	3.6.1	G AO													
			Service Organizations		G DO													
			SD-02 Shop Drawings															
			HVAC Control System		G DO													
			SD-06 Test Reports															
			Commissioning Report		G AO													
			Performance Verification Test		G AO													
			Report															
			SD-10 Operation and Maintenance															
			Data															
			Operation Manual		G AO													
			Maintenance and Repair Manual		G AO													

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TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE *(Read instructions on the reverse side prior to initiating this form)*	DATE	TRANSMITTAL NO.

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS *(This section will be initiated by the contractor)*

TO:	FROM:	CONTRACT NO.	CHECK ONE: ☐ THIS IS A NEW TRANSMITTAL ☐ THIS IS A RESUBMITTAL OF TRANSMITTAL _____
SPECIFICATION SEC. NO. *(Cover only one section with each transmittal)*	PROJECT TITLE AND LOCATION		CHECK ONE: THIS TRANSMITTAL IS FOR ☐ FIO ☐ GOV'T. APPROVAL

ITEM NO. *a.*	DESCRIPTION OF ITEM SUBMITTED *(Type size, model number/etc.)* *b.*	MFG OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. *(See instruction no. 8)* *c.*	NO. OF COPIES *d.*	CONTRACT REFERENCE DOCUMENT		FOR CONTRACTOR USE CODE *g.*	VARIATION *(See instruction No. 6)* *h.*	FOR CE USE CODE *i.*
				SPEC. PARA. NO. *e.*	DRAWING SHEET NO. *f.*			

REMARKS

I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as other wise stated.

_____

NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED *(List by Item No.)*	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.

2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.

3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288-R for each entry on this form.

4. Submittals requiring expeditious handling will be submitted on a separate form.

5. Separate transmittal form will be used for submittals under separate sections of the specifications.

6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".

7. Form is self-transmittal, letter of transmittal is not required.

8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.

9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

A -- Approved as submitted.

B -- Approved, except as noted on drawings.

C -- Approved, except as noted on drawings. Refer to attached sheet resubmission required.

D -- Will be returned by separate correspondence.

E -- Disapproved (See attached).

F -- Receipt acknowledged.

FX -- Receipt acknowledged, does not comply as noted with contract requirements.

G -- Other *(Specify)*

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01332

DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES

11/02; Rev 01/04

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SECTION 01332

DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES
11/02; Rev 01/04

PART 1 GENERAL

Attachments: Attachment A, Design Certification and Transmittal Letter
Attachment B, Supplemental Design Certification And Transmittal Form
Attachment C, Sample Submittal Paragraph
DD Form 1354 - Transfer and Acceptance of Military Real Property
Instructions for Preparation of DD Form 1354

1.1 SUMMARY

a. Design

This section includes general requirements for developing and submitting a design including preparation of drawings, specifications, design analyses and other design deliverables conforming to the requirements contained in this section. Distribution requirements for design deliverables is also covered in this section. See Section 01336 60 PERCENT DESIGN REQUIRMENTS and Section 01338 100 PERCENT DESIGN REQUIREMENTS for specific requirements.

b. Construction

This section includes distribution requirements for the construction set of design deliverables and distribution requirements for DD Form 1354 and as-built drawings. Included also are the construction submittal classifications for use in editing the technical guide specifications and instructions on revisions to accepted design during construction.

1.2 REFERENCES

The references listed below form a part of this specification to the extent referenced.

1.2.1 THE CONSTRUCTION SPECIFICATIONS INSTITUTE (CSI)

CSI Masterformat Master List of Section Titles and Numbers

1.2.2 OMAHA DISTRICT CADD STANDARDS MANUAL

(a) Omaha District AutoCADD Standards will be made available to the successful offeror. AutoCADD Standard utilize the National CAD standards with Omaha District refinements concerning file names, layers, colors, line widths, details and symbols. See Section 01040 AS-BUILT DRAWINGS for a summary of Omaha District file format and font requirements. The Contractor shall be responsible for furnishing the required CAD software.

(b) Corps of Engineers Civil Standards.

Corps of Engineers Civil Standards (Adobe Acrobat .pdf format) are included on the solicitation CD-ROM and is located under the folder "CADDSTD"

file: civilstd.pdf

AutoCADD Civil Standards are available at:

ftp://aecadd@ftp.nwo.usace.army.mil/ae/ under folder labeled "Standard Drawings". This ftp is password protected. The successful offeror will be given access rights to this ftp site.

1.2.3 WEB SITES

In addition to the web sites listed in this section, other RFP Sections may list web sites where design criteria references used in this solicitation package may be found.

NOTE: FOR ITEMS (a), (b), AND (c) BELOW, REFERENCES TO RECEIVING APPROVAL FROM OTHER GOVERNMENT AGENCIES FOR ALTERNATIVE DESIGNS ARE NOT APPLICABLE TO THIS PROJECT. THE CONTRACTOR IS THE DESIGNER WHEN READING THESE DOCUMENTS.

ALL ITEMS LISTED BELOW ARE CONSIDERED TO BE A PART OF THE RFP SOLICITATION DOCUMENT (AS APPLICABLE) AND THE RESULTANT CONTRACT.

(a) TECHNICAL MANUALS (TM), TECHNICAL INSTRUCTIONS (TI), AIR FORCE MANUALS (AFM), ENGINEERING TECHNICAL LETTERS (ETL), ARMY ARCHITECTURAL AND ENGINEERING DESIGN CRITERIA (AEI), SUSTAINABLE DESIGN DOCUMENTS, AND MILITARY HANDBOOKS (MIL HNDBK) can be obtained from the National Institute of Building Sciences Construction Criteria Base (CCB) on CD-ROM. Contact the CCB directly at (202) 289-7800 for an order form or obtain an order form at the following internet address: http://www.ccb.org/ccbsubscribe/Subsmain.asp. There is a regular annual subscription fee to the CCB (Price is noted on internet address, currently $700 per year). The CCB is available on CD-ROM or DVD. Selected references are also available for downloading in Acrobat .pdf file format at the following internet address:

http://www.hnd.usace.army.mil/techinfo.

Additional web sites are as follows:

(1) TECHNICAL MANUALS, ETL's, ETC.:

www.usace.army.mil/inet/usace-docs

Click on "Information", then the desired publication.

(2) AIR FORCE DESIGN CRITERIA:

http://afpubs.hq.af.mil

(3) UNIFIED FACILITIES GUIDE SPECIFICAITONS (UFGS)

This includes UFGS sections referenced, but not provided in the solicitation and other UFGS sections required in developing the project specifications. Unless noted otherwise these Guide sections are located on the CD-ROM issued with solicitation (Specsintact files under a directory labeled "Guides" An Index of available UFGS sections is included in Attachment No. 3 of this RFP.

Specsintact software is available on the CCB referred to paragraph (a) above or may be downloaded at the following internet address:

http://si.ksc.nasa.gov/specsintact/software/software.htm

SI Version 4.0 (Version SI4.1.0.615) or later shall be used. The new unified submittal format shall be selected for file format. A copy of the software (SI Version 4.1) has been included on the CD-ROM issued with this solicitation. See folder: "Software", file "si.exe".

1.3 NOT USED

1.4 DEFINITIONS

1.4.1 Contractor

Firm or company to whom award was made to design and construct the ADAL Mission Support Facility, located at Peterson AFB, Colorado.

1.4.2 Design

Documents or deliverables, as defined in this section, prepared by or under the direct supervision of registered professional architects and engineers and proposed by the Contractor to meet the requirements of this solicitation.

1.4.3 Design Drawings

Documentation showing in graphic and quantitative form the extent, design, location, relationships, and dimensions of the construction to be provided by the Contractor. (Note: Shop Drawings, as defined in Section 01330, "Submittals Procedures" are not to be provided until after design drawings are determined satisfactory for construction.)

1.4.4 Designer

Architects and Engineers (A-E) associated with the Contractor who are responsible for (1) preparing the design documents, (2) checking construction submittals, considered extensions of design (A-E), for compliance with the prepared Construction set design documents and (3) have the qualifications and experience specified herein.

1.4.5 Request for Proposal (RFP)

Documents furnished to prospective offerors containing proposal information and specifying criteria and project requirements for design and construction of a ADAL Mission Support Facility located at Peterson AFB, Colorado. The documents include this specification, attachments, and the RFP drawings.

1.5 QUALITY ASSURANCE

1.5.1 Construction Personnel Experience

The Contruction Personnel experience shall be as submitted per the requirements of Section 00110 PROPOSAL INSTRUCTIONS, SUBMISSION

REQUIREMENTS AND EVALUATION. If, because of reasons beyond the control of the construction firm, the named individuals are not able to fulfill this obligation, replacement personnel with similar skills and experience shall be presented for acceptance by the Contracting Officer. The Contractor shall obtain the Contracting Officer's wrtitten consent before making any substitution for these designated personnel.

1.5.2 Designer Qualifications and Experience

The designer qualifications and experience shall be as submitted per the requirements of Section 00110 PROPOSAL INSTRUCTIONS, SUBMISSION REQUIREMENTS AND EVALUATION. If, because of reasons beyond the control of the design team, the named individuals are not able to fulfill this obligation, replacement personnel with similar education and experience shall be presented for acceptance by the Contracting Officer. The Contractor shall obtain the Contracting Officer's wrtitten consent before making any substitution for these designated personnel.

1.6 SUBMISSION OF DESIGN DRAWINGS, SPECIFICATIONS AND DESIGN ANALYSES

1.6.1 Design Certification

Within each design submittal, the Contractor shall certify that all items submitted in the design documents (after construction award) comply with Division 1 specifications and mandatory requirements of the UFGS and designated CEGS. The criteria specified in this RFP are binding contract criteria and in case of any conflict, after award, between the RFP criteria and Contractor's submittals, the RFP criteria will govern unless there is a written and signed agreement between the Contracting Officer and the Contractor waiving a specific requirement. The Contractor shall present with the letter of transmittal for each design submittal (including the 100% corrected design (backcheck) submittal) a certification that the submittal (plans, specifications, design analysis, etc.) complies with the requirements stated above, similar to that shown at Attachment A of this section.

1.6.2 Deviations

Deviations from the RFP technical requirements shall be identified in the letter of transmittal and design certification letter. Deviations from the RFP technical requirements will be considered and accepted by the Contracting Officer, if the changes results in a significant improvement to the project or it exceeds the minimum RFP technical requirements.

1.6.3 Field Inspection

The Contractor shall verify field conditions which are significant to design, by field inspection, researching and obtaining all necessary existing facility as-built drawings and reproducing them for his own use as necessary, and discussing status with knowledgeable personnel. The information shall be reflected in the design documents.

1.6.4 Drawings

1.6.4.1 Software Requirements

All design drawings shall be done by the Contractor using AutoCAD 2002 .dwg file format. Format shall conform to the Omaha District CADD Standards and the Omaha District CADD Design File and Sheet Naming Conventions. See

Omaha District CADD Standards requirements listed above.

1.6.4.2 RFP Drawings

The drawings furnished with this solicitation will be furnished to the Contractor in AutoCAD 2002 .dwg file format. See Section 00800 SPECIAL CONTRACT REQUIREMENTS for when the RFP Drawings will be made available.

1.6.5 Design Documents

Design documents, as required by the 60 percent and 100 percent design submittals stated hereafter, shall include construction drawings, specifications, design analysis, and other design deliverables for categories such as, but not limited to, architectural, interior design, structural, mechanical, electrical, grading, drainage, paving, and outside utility services. Specifications shall be in sufficient detail to fully describe and demonstrate the quality of materials, the installation and performance of equipment, and the quality of workmanship. Detailing and installation of all equipment and materials shall comply with the manufacturer's recommendations. The design analysis shall be for each discipline of work and shall include all features with the necessary calculations, tables, methods and sources used in determining equipment and material sizes and capacities, and shall provide sufficient information to support the design.

1.6.6 Design Reviews

A minimum of two design reviews during design will be held at Peterson AFB at the 60 percent and the 100 percent completion stages of the final design. A backcheck review will be made on the Corrected 100 percent design. Once that the Corrected 100 percent design is reviewed and determined to be satisfactory for the purpose of beginning construction, the Contractor shall prepare and distribute sets of documents for construction. The Contractor shall attend the design reviews, visit the site and make other trips as necessary during the design to accomplish the work.

1.6.7 Document Packaging

The 60 percent design submittal includes the 60 percent complete site and utility design and building design. These documents shall be packaged and stamped "For Review Only - 60% Design"; and each sheet of the drawings shall also be stamped. The 100 percent design submittal includes 100 percent complete site and utility design and building design and shall be stamped "For Review Only -100% Design", and each sheet of the drawings shall also be stamped. The backcheck design submittal(s) after the Government review of the 100 percent complete site and utility design and building design shall be stamped "100% Corrected Design"; and each sheet of the drawings shall also be stamped. The 100% Corrected Design submittal is for making corrections resulting from review comments and for preparing the final project documents. No additional time for completion of the contract will be granted to the Contractor due to insufficient design submittals. See paragraph 3.7.6 "Government Design Review and Acceptance" for additional requirements.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 DRAWINGS

Prepare, organize, and present drawings in the format specified herein. Provide drawings complete, accurate and explicit enough to show compliance with the RFP requirements and to permit construction. Drawings illustrating systems proposed to meet the requirements of the RFP performance specifications shall reflect proper detailing for each such system to assure appropriate use, proper fit, compatibility of components and coordination with the design analysis and specifications required by this section. Coordinate drawings to ensure there are no conflicts between design disciplines and between drawings and specifications. For specific drawing requirements, see Sections 01336 60 PERCENT DESIGN REQUIREMENTS and 01338 100 PERCENT DESIGN REQUIREMENTS. The following subparagraphs cover general drawing requirements.

3.1.1 Drawings Format

Full size drawings are considered 28 inches x 40 inches. Half-size drawings are considered 14 inches x 20 inches. Title block shall be as indicated in the Omaha District CADD Standards Manual. Recommended drawing scales are specified in Sections 01336 60 PERCENT DESIGN REQUIREMENTS and 01338 100 PERCENT DESIGN REQUIREMENTS. The Cover Sheet of the Contractor prepared drawings shall bear the stamp or seal and signature of the registered architect or appropriate engineer responsible for the work and proposed to meet the RFP requirements. Drawing code numbers for the design and construction drawings shall be as follows:

AF 141-31-01

3.1.2 Drawings Sequence

Arrange drawings by design discipline in accordance with Omaha District CADD Standards Manual.

3.1.3 Drawings Required

As a minimum, the Contractor shall prepare and submit the following design drawings:

a. Title Sheet, Index of Drawings, Legend and Abbreviations and Soil Borings.

b. Civil Drawings

c. Utility Drawings (Water Supply, Wastewater, Gas, and Electrical)

d. Architectural Drawings

e. Interior Design Drawings

f. Structural Drawings

g. Mechanical Drawings

h. Plumbing drawings

i. Electrical Drawings

j. Fire Protection Drawings

3.2 SPECIFICATIONS

3.2.1 Project Specificaitons

3.2.1.1 General Requirements

The Contractor shall develop project specifications utilizing the Division 1 Specifications furnished with this RFP; unedited Unified Facilities Guide Specifications (UFGS); designated specification sections furnished with this RFP; and the development of additional project specifications not covered by UFGS. Guide specifications are located on the CD-ROM issued with this solicitaton.

The Contractor shall utilize Specsintact software.

Minimum and recommended hardware requirements are as follows:

MINIMUM REQUIREMENTS	RECOMMENDED REQUIREMENTS
486 (Windows 95/98/ME/NT/2000) Pentium NT/2000	Pentium 133 - Windows 95/98/ME Pentium 266 NT/2000
16MB RAM (Windows 95/98) 32MB RAM (Windows NT/ME) 64MB RAM (Windows 2000)	32MB RAM (Windows 95/98) 64MB RAM (Windows NT/ME) 128MB RAM (Windows 2000)
24MB (local) 56MB (Network) Free Hard Drive Space	50 MB (local) 75 MB (Network) Free Hard Drive Space
SVGA Monitor	SVGA Monitor with 800 x 600 resolution
3 1/2 inch 1.44 MB floppy drive	3 1/2 inch 1.44 MB floppy drive
CD ROM Drive	CD ROM Drive
Laser Printer	Laser Printer

Note: Additional Hard Drive space is required for storing project specifications and masters.

3.2.1.2 Technical Specifications

The Contractor shall be required to use unedited UFGS and designated unedited CEGS sections for developing project specifications. Specification paragraphs and subparagraphs shall not be rewritten to lessen the quality of the original technical specification sections, unless directed otherwise. The technical guide specifications describe the type and quality of material and installation normally acceptable for [Corps of Engineers] Construction, and often represent specific agreement between the Government and the applicable industry. The provision of the technical guide specification should not be changed without justification. Justifications and identification for additional materials shall be identified in the design analysis under the appropriate design discipline. Designer notes shall not appear in any design submittals. Only bracketed

choices and inapplicable items shall be marked for deletion. These items shall be removed in corrected 100 percent specifications submittal. The Contractor shall complete the editing of all options in these specifications. Where designer notes are provided, the Contractor shall edit the choice in accordance with the recommendations and guidance of the Notes, except where specific guidance has been provided with this RFP (i.e. submittal paragraph). See additional requirements in Sections 01336 60 PERCENT DESIGN REQUIREMENTS and 01338 100 PERCENT DESIGN REQUIREMENTS.

3.2.1.3 Editing Technical Specifications (Designated CEGS or UFGS)

(1) Incorporating Established RFP Requirements into Guide Specifications

Where specific requirements in regards to materials, methods and end function requirements are provided in the edited RFP Division 1 Sections provided in this RFP, the unedited Unified Facilities Guide Specifications (UFGS) and designated unedited CEGS (Omaha) shall be edited to reflect these requirements. Variations to these requirements will not be permitted, unless authorized as a design deviation by the Contracting Officer.

(2) Requirements of Guide Specifications Not Established By RFP Requirements

Where specific direction has not been provided in regards to materials, methods and end function requirements, the final requirements will be a result of the completed design by the Contractor.

The applicable unedited UFGS and designated CEGS (Omaha) Sections, Divisions 2 through 16, provide requirements for a variety of materials and systems. Deleting applicable requirements from these specifications will not be permitted, unless accepted as a design deviation by the Contracting Officer.

(3) ADDITIONS: If the specifications of the UFGS or designated CEGS does not cover a feature that is in the project, new sentences and/or paragraphs shall be inserted in the proper locations to adequately cover the feature of work. Additions shall not lesson the quality of materials indicated by the specifications. If a new material is added, it shall be properly referenced in "Applicable Publications," "MATERIALS," "SUBMITTAL," "TESTS," and "INSTALLATION" paragraphs, as applicable.

(4) DELETION OF INAPPLICABLE TEXT MATERIAL, AS NECESSARY, TO TAILOR THE SPECIFICATIONS TO FIT THE PROJECT: After deletion has been made to all inapplicable paragraphs, subparagraphs, choices, and schedules from the body of the specifications (including but not limited to the correction of lists in "Submittals," "Tests," and "Installation" paragraphs), delete all nonapplicable references listed in the preceding "APPLICABLE PUBLICATIONS" and "MATERIALS" paragraphs. Deletions shall not lesson the quality of materials indicated by the specifications.

(5) Do not remove any special code markings for submittals, references, tests or section references, unless the text is not required.

(6) REFERENCES TO SPECIFICATION SECTIONS. The Contractor shall be

responsible for coordinating section references, along with the technical requirements, to specific specification sections (number and title) within the project specifications. Section references (title and number) shall be revised to reflect the titles and numbers of specification sections used.

(7) REFERENCES. The Contractor shall be responsible for coordinating references or publications referenced in the text of each specfications with those references listed at the beginning of each section. See paragraph: Reports below. The Specsintact Software removes references or publications not referenced in the text from the Reference Article, when printing from the Jobs menu.

(8) SUBMITTALS. Each section of the specifications includes a submittal paragraph which lists all applicable Contractor submittals. Submittals shall be properly marked as outlined in the SpecsIntact documentation and in this section. These codings are used for automatic generation of the Submittal Register in the SpecsIntact Software. These codings must NOT be deleted from the text, unless the submittal is not required. The Submittal Item text between the coding shall be identical (word for word, including punctuation and spacing) to the paragraph text in the reference paragraph(s). Text may be either upper or lower case letters. An example of a submittal paragraph is provided in Attachment C, "Sample Submittal Paragraph".

During this design phase, the Contractor's Designer(s) shall develop a complete list of required construction submittals in each technical specification. The list is to be used in preparing the Submittal Register for approval by the Contracting Officer Representative (COR). The example Submittal Register furnished with this Solicitation was created using SpecsIntact Software. The Contractor shall replace this example Submittal Register with the actual submittal register developed from the completed design specifications. This list is not all inclusive and additional submittals may be required as directed by the COR. Both the attached sample and the Contractor-generated submittal registers identify only the submittal section, type of submittal, description of item submitted, paragraph number related to submittal item (section submittal paragraph if none listed), submittal classification (G or FIO), and submittal reviewer identifier (DO or AO). See the below discussion on submittal classifications for additional information.

See Section 01330 SUBMITTAL PROCEDURES, for complete instructions related to submittal descriptions, classifications, numbers, and submittal process. Unless directed otherwise by the Contracting Officer, the words "Government Approval" associated with "G" designated submittals shall be interpreted as defined herein and in section 01330 SUBMITTAL PROCEDURES.

Submittal Classifications defined in Section 01330 are G-DO, G-AO, and FIO. One of these designations shall be used for all submittal requirements. For each submittal requirement in the Guide specification, designers shall indicate a submittal type (G-DO, G-AO, or FIO) or shall delete the requirement for the submittal if it is not required. The references to "G-AE" and "G-PO" submittal types in the designer notes of the technical guide specifications shall be disregarded and submittals shall be designated G-DO, G-AO, or FIO as determined by the Designer in accordance with the instructions in this section and Section 01330 SUBMITTAL PROCEDURES. There shall be no

"G-AE" or "G-PO" submittals in the submittal register.

To designate a submittal item as FIO, mark the semi-colon following the submittal item and also the submittal tags up to the Item tag for deletion (i.e. "; [ ], [ ]"). Designers shall identify submittal classifications for all required submittals.

(9) USE OF UFGS SECTIONS

UFGS sections are joint effort of the U.S. Army Corps of Engineers (USACE), the Naval Facilities Engineering Command (NAVFAC) and the Airforce Civil Engineer Support Agency (AFCESA). Unless directed to otherwise, use UFGS sections. Available UFGS sections include sections that have a 5 digit section number with either the letters "A" or "N" following the section number or no letter following the section number. The letters designate the specification proponent ("A" is for USACE and "N" is for NAVFAC). The Contractor shall use sections with the letter "A" following the section number or sections with no letter following the section number. Sections with the letter "N" following the section number shall not be used unless there is no other available section, the solicitation directs the use of these sections or the available sections do not meet the solicitation requirements. Do not use Division 1 Sections that have the letter "N" following the section number. Where UFGS sections include tailoring options for both Army and Navy, use the Army tailoring option. Where conflicts exist that cannot be resolved, the Contracting Officer shall be contacted to resolve the issue.

3.2.1.4 Developing Additional Project Specifications

If the need should arise for developing project specifications on materials/items not covered in by the UFGS or desginated CEGS, the Contractor shall develop specifications utilizing commercial Construction Specifications Institute (CSI), 16 Division, 3 Part Section Format. These specifications shall conform to the applicable criteria requirements indicated in the [task order or] solicitation. For these specification sections, write at the Mediumscope level of detail as described in CSI Masterformat. Use Mediumscope level section numbers and titles as identified in CSI Masterformat. Adjust section numbers which conflict with the specifications used in the Project Specifications. Each of these developed specification sections shall be in the same format as the CSI format specifications included in the UFGS (including the submittal paragraph). Commercially available guide specifications such as "SpecText" published by The Construction Specifications Institute and "MasterSpec" published by The American Institute of Architects or Unified Facilities Guide Specifications (UFGS) may be used, subject to the format, coding and submittal paragraph requirements. References to the "Architect/Engineer" and the "Owner" shall be changed to refer to the "Government" or "Contracting Officer," as appropriate. The specifications shall clearly identify, where appropriate, the specific products chosen to meet the requirements of the specifications (manufacturers' brand names and model numbers or similar product information). The Contractor shall be responsible for coordinating references, along with the technical requirements, to specific specification sections (number and title) within the project specifications. Section references (title and number) shall be revised to reflect the titles and numbers of specification sections used.

3.2.1.5 Division 00, 01 and 15 Sections

Include Division 0 and 1 specifications sections (00800 SPECIAL CONTRACT REQUIREMENTS, 01040 AS-BUILT DRAWINGS, 01200 WARRANTY OF CONSTRUCTION, 01320A PROJECT SCHEDULE, 01330 SUBMITTAL PROCEDURES, 01355 ENVIRONMENT PROTECTION, 01451A CONTRACTOR QUALITY CONTROL, 01565 (FEDERAL FACILITIES COLORADO) NPDES PERMIT REQUIREMENTS FOR STORM WATER DISCHARGES), 01670 RECYCLED/RECOVERED MATERIALS, 01781 OPERATION AND MAINTENANCE DATA and 15951 DIRECT DIGITAL CONTROL FOR HVAC contained in the RFP as part of the project specifications without change. Copies of these sections and other Division 1 specifications included with the RFP will be furnished (upon request) to the successful offeror in Specsintact. Any other Division 1 Specifications required by the Contract shall be the responsibility of the Contractor. No other Division 1 Specifications willl be required, unless specified otherwise in this solicitation or required by the Contractor.

3.2.2 Format for Project Specifications

Submit the project specification, including a Cover page and Table of Contents, printed with a word processor (Using Specintact software) using good quality white paper. For the 60 percent and 100 percent design submittals, editing of the CEGS and UFGS shall be shown as indicated in the Specsintact documentation for text deletions and for text insertions. The corrected 100 percent specifications with review comments incorporated shall be cleaned up (markings for insertion and deletion removed) and submitted in both hard copy and on magnetic media (A Microsoft Windows compatible CD-ROM and compatible with the "Specsintact " micro computer software package.). The Cover page and attachments to specification sections shall be prepared in a Microsoft Word (compatible with Microsoft Word 2000) format. Carbon copies are not acceptable.

Format shall be as outlined in the Specsintact documentation.

Each specification section shall include a Section Table of Contents which is combined with the page numbering of the specification section.

The Cover page shall be similar to the RFP Cover page and shall include:

a. Project title, Project Number, activity and location

b. Construction contract number

c. Construction Contractor's name and address

d. Design firm's name and address

e. Names of design team members (Designers of record) responsible for each Contractor prepared technical discipline of the project specification

f. Name and signature of a Principal of the design firm

The Table of Contents shall list the 16 Divisions contained in CSI format and the specification section numbers and titles contained in the project specification.

3.2.3 Reports

The Contractor shall submit the following Specsintact reports with the 100

percent and Corrected 100 percent design submittals: Address Verification, Reference Verification, Section Verification, Bracket Verification, Submittal Verification, Submittal Register and any other reports requested by the Contracting Officer. References shall be reconciled when printing reports. The reports to be submitted for review shall be after the Contractor has corrected the errors generated by these reports. From the errors generated by the reference verification reports, fix only those errors where there is a discrepancy with the issue date of a publication (i.e., NFPA 70, revise to the latest code requirement). Address, Reference and Submittal Reconcilation shall be completed prior to submittal of the 100 percent design.

3.2.4 Construction Submittals

All construction submittals shall be in accordance with Section 01330, "SUBMITTAL PROCEDURES".

Construction submittal types and products, including the submittal description numbers and data package numbers, shall be included in the specification sections, where required. When appropriate, use specific product terms instead of the generic product terms contained in the specifications sections (e.g., asphalt shingles, built-up roofing, EPDM single ply, etc. vs roof covering; concrete masonry units, brick, metal siding, etc. vs exterior skin; mineral fiber board, block, batt or blanket, polystyrene, polyurethane, polyisocyanurate board vs insulation).

3.2.4.1 Submittals Register (Form)

Prepare and maintain a Submittals Register. The Submittal Register (ENG Form 4288 "Submittal Register" shall be prepared using Specsintact Software. Additional instructions for completing the form are contained in Section 01330, "SUBMITTAL PROCEDURES."

Fill in columns "c" through "f" and submit with the 100 percent design submittal. The Submittal Register will be returned to the Contractor along with the reviewed and accepted design.

Resubmit the Submittal Register as a construction submittal as required in Section 01330, "SUBMITTAL PROCEDURES." The Contracor shall provide an electronic copy of the accepted submittal register (navy4288.txt file), generated by the Specsintact software, three (3) working days prior to the pre-construction conference. Remaining columns will be filled in at the appropriate time and by the appropriate authorities during construction.

3.3 DESIGN ANALYSES

Prepare design analyses (basis of design and calculations) for each design discipline. Specific requirements relative to the technical content to be provided are specified herein and in Section 01336 60 PERCENT DESIGN SUBMITTALS and Section 01338 100 PERCENT DESIGN SUBMITTALS. The design analyses shall include a basis of design and calculations for each discipline. The design analyses shall be a presentation of facts to demonstrate that the concept of the project is fully understood and that the design is based on sound engineering. The design analysis for each discipline shall include:

a. A basis of design consisting of:

(1) An introductory description of the project concept which

addresses the salient points of the design;

(2) An orderly and comprehensive documentation of criteria, rationale, assumptions and reasoning for system selection.

b. Calculations required to support the design.

c. Project Engineering Considerations and Instructions (ECI) for Final Design Analysis.

The Contractor shall not make reference to the RFP solicitation to avoid stating the requirements for the basis for design.

3.3.1 Format

The design analysis shall include: a cover page indicating the stage of design "PRELIMINARY DESIGN ANALYSIS": for 60 percent design submittal and "FINAL DESIGN ANALYSIS" for 100 percent design submittal, the project title "ADAL MISSION SUPPORT FACILITY, PDC NO. TDKA 033002", fiscal year and program funding "FY 04 MCAFR", location "PETERSON AFB, COLORADO", who prepared the design analysis "Prepared By:" followed by Name of AE and Construction Contractor, location of AE and Construction Contractor Office involved with the design, and construction contract number; table of contents; and tabbed separations for each part of design analysis for quick reference. The cover sheet shall indicate the volume number and total number of volumes for the project. Provide a cover sheet for each volume. Submit design analyses prepared on 8 1/2 by 11 inch white paper. The design analysis for all disciplines shall be bound in one volume, excluding calculations. Multiple volumes for individual disciplines, appropriately numbered, may be provided, when required. For Electronic media requirements, see the NOTES for the Construction Set Distribution (paragraph 3.7.1.6). Narratives shall be provided in decimal paragraph numbering system (i.e. 1, 1.1, 1.1.1, 1.1.1.1 etc.). Narratives shall be an original document that does not copy the text from the RFP document sections, unless directed otherwise and shall be written in the same tense (Past or Present) for the entire design analysis. Each part of the design analysis shall include part number and page numbering (consecutive page numbering for each part). Organize design analysis narrative into the following parts, as follows:

3.3.1.1 Part 1 - General Description.

This part will provide statements of purpose, authority and applicable criteria. A description of the project and a summary of the economic factors influencing the choice of the civil, architectural, structural, mechanical, electrical, fire safety, water supply and wastewater disposal systems used in the project shall be provided along with an indication of how initial and life costs were considered.

a. Purpose. Include the following statement under the heading of "PURPOSE":

"The purpose of this project is to to provide adequate space for functions on base being relocated from substandard buildings scheduled for demolition, to consolidate several scattered base organizations into a single workplace to support the consolidation of functions within the Mission Support Group and to provide adequate force protection for all personnel and assets."

b. Authority. Provide the following authorization statement under the heading "AUTHORITY" for the project:

"The preparation of design documents was authorized by Design Directive dated 8 December 2003 ."

c. Applicable Criteria. Provide a list of the general criteria that pertains to all disciplines used in the design. Specific criteria used in a particular engineering/architectural discipline shall be listed in the text of the appropriate discipline in Part 2 of the design analysis. Such criteria shall be referenced accordingly.

d. Project Description. Provide a description of the project and summary of economic factors influencing the choice of materials and systems used in the project.

3.3.1.2 Part 2 - Design Requirements and Provisions.

This part of the design analysis shall provide statements of factors considered and provided in the design along with supporting justification of design decisions and design calculations. Include narratives for each of the following areas or disciplines. See Sections 01336 60 PERCENT DESIGN REQUIREMENTS and 01338 100 PERCENT DESIGN REQUIREMENTS for specific requirements.

a. Civil

b. Water Supply and Wastewater

c. Architectural

d. Interior Design

e. Structural

f. Mechanical

g. Electrical

h. Fire Protection

i. Environmental Protection, Compliance and Permits

j. Health and Safety

k. Sustainable Design

3.3.2 Calculations

All calculations shall be placed in separate appendix volume(s). Calculations shall include a cover page similar to the design analysis narrative cover page, a table of contents, index page and a summary of criteria for each appendix on the first pages and the project title, and location identified on every page of the calculations. All calculation pages shall be clearly legible and photo-ready. Each discipline which requires calculations shall be consecutively numbered (Example: A-1, A-2, A-3 etc. for Water Supply and Wastewater Calculations and B-1, B-2, B-3, etc. for Structural Calculations) and the date. Cite criteria from which the calculations, rationale, and formulae are extracted by publication

number, title, edition and page number. The cover page and each page of calculations shall also include the names of the persons originating and checking the calculations. The person checking the calculations shall be a registered professional engineer other than the originator. In addition, the signature and seal of the appropriate registered professional engineer responsible for the work shall appear on the cover page of the calculations for each discipline. Each appendix index page shall list subtopics (e.g. for Structural - Loads, Materials, References, Wind Analysis, Footing Design, Wall Design, Column Design, etc.) with pages numbers where each of these subtopics can be found in the calculations.

Computer printouts shall be consecutively page numbered and identified similar to the calculations. Identify the computer program name, source, and version. All schematic models used for computer input shall be provided.

3.3.3 Engineering Considerations and Instructions (ECI) for Field Personnel

3.3.3.1 Separate Appendix

Under a separate appendix in the Final Design Analysis, the Design-Build Contractor shall include the following items:

a. Features critical to the quality of the final construction product requiring special attention.

b. Submittals requiring special attention during construction.

c. Special user requirements or instructions.

d. Assumed field conditions, pertinent significant aspects, or critical phases of the project used as a basis of project design.

3.3.3.2 Format

Format for ECI's shall include the following information:

"ENGINEERING CONSIDERATIONS AND INSTRUCTIONS

Project Name:_____

Location: _____

Designer Name:_____ Phone:_____

Discipline:_____

Design-Build designers have prepared the following engineering considerations and instructions (ECI). These ECI's should be followed during the construction of the above project. If you have any questions, contact the appropriate Design-Build designer."

3.3.3.3 Distribution of ECI's

In addition to including ECI's in a separate appendix of the final design analysis and after acceptance of the 100 percent corrected design and prior to the start of construction, the design-build Contractor shall e-mail a copy of the ECI's to the appropriate U.S. Army Corps of Engineer's Field representative for his consideration with a copy also sent to the

appropriate individual in following office(s): CENWO-CD-QR and CENWO-PM-M. The Government will provide the names and e-mail addresses to the design-build Contractor at either the pre-design or pre-construction conference.

3.3.4 Requests for Information, Meeting Minutes and Comments

Copies of Requests for Information (RFI) made by the Contractor to the Government shall be included as an appendix to the design analysis. An index of each RFI, which documents the RFI number, the date RFI given to Government, the date the RFI is answered and the Action Response provided by the Government.

A copy of all meeting minutes and design review comments (if any) with action responses shall be included as an appendix to the design analysis.

Appendices for RFI's and Meeting Minutes and design review comments shall have page numbering that follows the same format as for Calculations listed above.

3.4 DESIGN CERTIFICATION

The Contractor shall provide certification signed by an officer of the Contractor's company attesting that the drawings, specifications and design analyses prepared for the construction of the facility meet the requirements of the RFP. The certification shall accompany the submission of the design documents along with names and disciplines for the designers of record. This design certification shall include a list of deviations (variations) from the solicitation or accepted final design. Prepare the design certification and transmittal letter in the format shown on Attachment A or Attachment B included at the end of this section.

3.5 60 PERCENT DESIGN SUBMITTALS

See Section 01336 60 PERCENT DESIGN REQUIREMENTS.

3.6 100 PERCENT DESIGN SUBMITTALS

See Section 01338 100 PERCENT DESIGN REQUIREMENTS.

3.7 REVIEW BY GOVERNMENT AGENCIES

3.7.1 Distribution of Design Documents for Conformance Review

(a) Government agencies shall receive review documents thirty (30) days prior to review conferences. The documents will be in their then-present "on-board" design status (except for the 100% design submittal). Agencies reviewing documents, and in the quantities indicated, are listed below. All documents must contain an index of contents. Work shall continue during the review period between the 60% design submission and the 60% design review conference. Work shall be 100% complete when the 100% design is submitted. Design work shall not continue during the review period between the 100% design submission and the 100% design review conference. All submittals shall be transmitted by **express mail.** Originals of transmittal letters should be sent to the Omaha District and copies should accompany each mail package. Transmittal letters shall indicate distribution by use of the "ATTN" code shown in the address. Design document set shall include the items listed below. Some of the Construction submittals are also listed. Design submittals shall be submitted as a complete package. The

distribution listed below also applies to all design reviews and design package accepted for construction.

(b) If the Government requires more time than the thirty (30) days given, prior to either of the review conferences, the Contractor will be granted an extension of time equal to the number of calendar days of delay.

(c) The Government requires fourteen (14) days to review 100 Percent Corrected Design submittals after receipt of these documents. If the Government requires more than the days given, the Contractor will be granted an extension of time equal to the number of calendar days of delay.

3.7.1.1 Design Submittal Items

The submittal items listed below are intended to identify the different design submittals required throughout the design process and select submittals required during and at the completion of Construction. Each submittal item has an Abbreviation, which will be used in conjunction with the number of required copies. See paragraphs 3.7.1.3 through 3.7.1.7 for required copies for distribution.

SUBMITTAL ITEM - **ABBREVIATION**

Design Analysis Narrative - **DANar**
Design Analysis Calculations - **DACalcs**
Specifications - **Specs**
Specification Error Reports - **SpecER**
Submittal Register - **SubReg**
Drawings (1/2 size) - **Dwg-1/2**
Drawings (Full size) - Dwg-full
Meeting Minutes with Annotated Comments and Other Attachments - **MMin**
As-Built Drawings - **Asblt**
Electronic Media Drawings - **EMDwg**
Electronic Media Specifications - **EMSpecs**
Electronic Media Design Analysis - **EMDA**
Design Certification Letter - **DCLet**
Color Board - **ColBd**
Furniture Design Package - **FDP**
DD Form 1354 - Transfer and Acceptance of Military Real Property - **DD1354**
Environmental Protection Plan - **EP Plan**
Engineering Considerations and Instructions - **ECI**
Backcheck Review Comments - **Brvw Cmnts**
Leadership in Energy and Environmental Design Summary Documentation - **LEED**

3.7.1.2 Activity Distribution Addresses

U.S. Army Corps of Engineers, Omaha District
Engineering Division
Attn: CENWO-PM-M (Mike Armstrong)
106 South 15th Street
Omaha, NE 68102-1618

U.S. Army Corps of Engineers, Omaha District
Construction Division
Attn: CENWO-CD-QT(Ronald Stubbe)
U.S. Army Engineer District, Omaha
106 South 15th Street
Omaha, NE 68102-1618

U.S. Army Corps of Engineers
Rocky Mountain Area Engineering Office
Attn: CENWO-CD-RM (Robert Michaels)
1050 South Academy Boulevard, Suite 100
Colorado Springs, Co 80910

U.S Army Corps of Engineers
Air Force Project Resident Office
Attn: CENWO-CD-RM-A (Paul Jendzejec)
c/o Rocky Mountain Area Engineering Office
1050 South Academy Boulevard, Suite 100
Colorado Springs, Co 80910

21 Civil Engineering Squadron
ATTN: 21 CES/CECC(Rob Dixon)
580 Goodfellow Street
Peterson AFB, CO 80914-2370

Headquarters Air Force Space Command
ATTN: HQ, ASPC/CEPC (Ray Van Horn)
Federal Building
1520 Williamette Avenue
Colorado Springs, CO 80909-4554

3.7.1.3 60 Percent Design Distribution

See paragraphs above explaining Submittal Abbreviation Codes and Activity Distribution Addresses. The number of copies required for each submittal item are listed below.

Activity / Submittal Item	CENWO-PM-M	CENWO-CD-QT	CENWO-CD-RM	CENWO-CD-RM-A
DANar-	10	2	3	2
DACalcs-	10	2	3	2
Specs-*(1)	10	2	3	2
Dwg-1/2-	10	2	3	2
MMin-*(2)	10	2	3	2
EMDwg-	1*(3)	-	-	-
DCLet-	10	2	3	2
ColBd-	1	-	-	1
ColBd Photos-	2	1	1	1
EP Plan	1	-	1	2
CID-*(4)	1	-	-	-
LEED	4	2	3	2
CD (Acrobat)-*5	4	1	1	1

Activity / Submittal Item	AFSPC/CEPC	21 CES/CECC
DANar-	1	12
DACalcs-	1	12
Specs-*(1)	1	12
Dwg-1/2-	1	12

MMin-*(2)	1	12
EMDwg-	-	-
DCLet-	1	12
ColBd-	-	2
ColBd Photos	-	2
CID-*(4)	1	1
EP Plan	-	4
LEED	1	4
CD (Acrobat)-*5	1	10

*60 PERCENT SUBMITTAL NOTES:

Specific submittal requirements are identified in Sections 01332 and 01336.

*(1) Copy shall show deletions and insertions (Revisions On) for all UFGS and designated CEGS specifications submitted. Process and Print Options for each section furnished shall include the following minimum requirements: Under "Sections" Print/Process Sections and Renumber Paragraphs boxes are checked; Under "Reports" a Section Table of Contents (Include Without Scope and Combine sections and section tables of contents); Under "Options" Section Dates shown, Units of Measure as english, Tags are Hidden, Notes are hidden, Revisions are shown, Start Page Numbering with "1", and Restart for each section box is checked; and Under "Header/Footer" jobtitle and jobname as a Header and Section number and Page number as a footer (similar to format shown on this section of the RFP).
*(2) To be submitted after Review Conference per requirements of this section.
*(3) Electronic Media Drawings:

Fifteen (15) percent of all drawings (exludes Cover Sheet, Vicinity Map, Location Plan and Indexes), representative of all design disciplines, shall be submitted in Microstation AutoCAD 2002) on CD-ROM to verify that the CADD standards being specified are complied with.

*(4) Furniture Design (CID) shall be in accordance with the AFCEE Interior Design Requirements (for 35 percent design). See Section 01004 INTERIOR DESIGN for additional information.

*(5) See Paragraph 3.7.1.8 Design Submittal CD-ROM for Adobe Acrobat files to submit. Design Analysis Calculations shall be included with the design analysis narrative and shall be scanned and saved in Adobe Acrobat 5.0. The design analysis and calculations shall utilize bookmarks for each chapter of the design analysis and each appendix or calculations.

3.7.1.4 100 Percent Design Distribution

See paragraphs above explaining Submittal Abbreviation Codes and Activity Distribution Addresses. The number of copies required for each submittal item are listed below.

Activity	CENWO-PM-M	CENWO-CD-QT	CENWO-CD-RM	CENWO-CD-RM-A
Submittal Item				
DANar-	10	2	3	2
DACalcs-	10	2	3	2

Specs-*(1)	10	2	3	2
SpecER	1	1	-	-
SubReg	2	2	-	2
Dwg-1/2-	10	2	3	2
MMin-*(2)	10	2	3	2
EMDwg-	1*(3)	-	-	-
DCLet-	10	2	-	2
ColBd-	1	-	-	1
ColBd Photos-	1	1	1	1
CID-*(4)	1	-	-	-
EP Plan	1	-	1	2
LEED	4	2	3	2
CD (Acrobat)-*5	4	1	1	2

Activity Submittal Item	AFSPC/CEPC	21 CES/CECC
DANar-	1	12
DACalcs-	1	12
Specs-*(1)	1	12
Dwg-1/2-	1	12
MMin-*(2)	1	12
EMDwg-	-	-
DCLet-	1	12
ColBd-	-	2
ColBd Photos	-	2
FDP-*(4)	1	1
EP Plan	1	4
LEED	1	4
CD (Acrobat)-*5	1	10

*100 PERCENT SUBMITTAL NOTES:

Specific Submittal requirements are addressed in Section 01332 and 01338.

*(1) Copy shall show deletions and insertions (Revisions On) for all UFGS and designated CEGS specifications submitted. Process and Print Options for each section furnished shall include the following minimum requirements: Under "Sections" Reconcile References, Print/Process Sections and Renumber Paragraphs boxes are checked; Under "Reports" a Section Table of Contents (Include Without Scope and Combine sections and section tables of contents), and Reference Verification, Submittal Verification, Reference Verification, Submittal Verification, Bracket Verification, Section Verification and Submittal Register boxes are checked; Under "Options" Section Dates shown, Units of Measure as english, Tags are Hidden, Notes are hidden, Revisions are shown, Start Page Numbering with "1", and Restart for each section box is checked; and Under "Header/Footer" jobtitle and jobname as a Header and Section number and Page number as a footer (similar to format shown on this section of the RFP).
*(2) To be submitted after Review Conference per requirements of this section.
*(3) Electronic Media Drawings:

Fifteen (15) percent of all drawings (exludes Cover Sheet, Vicinity Map, Location Plan and Indexes), representative of all design disciplines, shall be submitted in Microstation AutoCAD 2002) on CD-ROM to verify that the CADD standards being specified are complied with.

*(4) Color boards shall show actual color samples of all proposed exterior and interior finishes. Furniture Design (CID) shall be in accordance with the AFCEE Interior Design Requirements (for 60 percent design). See Section 01004 INTERIOR DESIGN for additional information.
*(5) See Paragraph 3.7.1.8 Design Submittal CD-ROM for Adobe Acrobat files to submit. Design Analysis Calculations shall be included with the design analysis narrative and shall be scanned and saved in Adobe Acrobat 5.0. The design analysis and calculations shall utilize bookmarks for each chapter of the design analysis and each appendix or calculations.

3.7.1.5 100 Percent Corrected Design Distribution

See paragraphs above explaining Submittal Abbreviation Codes and Activity Distribution Addresses. The number of copies required for each submittal item are listed below.

Activity / Submittal Item	CENWO-PM-M	CENWO-CD-QT	CENWO-CD-RM	CENWO-CD-RM-A
DANar-	10	2	3	2
DACalcs-	10	2	3	2
Specs-*(1)	10	2	3	2
SpecER	1	1	-	-
SubReg	2	2	2	2
Dwg-1/2-	10	2	3	2
MMin-*(2)	10	2	3	2
EMDwg-	1*(2)	-	-	-
DCLet-	10	2	3	2
ColBd-*(3)	1	-	-	1
ColBd Photos-*3	1	1	1	1
CID-*(4)	1	-	-	-
EP Plan	1	-	1	2
LEED	4	2	3	2
CD (Acrobat)-*5	4	1	1	2
ECI-	10	2	3	2

Activity / Submittal Item	AFSPC/CEPC	21 CES/CECC
DANar-	1	12
DACalcs-	1	12
Specs-*(1)	1	12
Dwg-1/2-	1	12
MMin-*(2)	1	12
EMDwg-	-	-
DCLet-	1	12
ColBd-	-	2
ColBd Photos	-	2
CID-*(4)	1	1
EP Plan	1	4
LEED	1	4

CD (Acrobat)-*5	1	10
ECI-	1	4

*100 PERCENT CORRECTED SUBMITTAL NOTES:

Specific Submittal requirements are addressed in Section 01332 and 01338.

*(1) Copy shall show revisions executed (deletions removed and insertions markings removed) for all specification sections submitted. Process and Print Options for each section furnished shall include the following minimum requirements: Under "Sections" Reconcile References and Addresses, Print/Process Sections and Renumber Paragraphs boxes are checked; Under "Reports" a Section Table of Contents (Include Without Scope and Combine sections and section tables of contents), and Reference Verification, Submittal Verification, Reference Verification, Submittal Verification, Bracket Verification, Section Verification and Submittal Register boxes are checked; Under "Options" Section Dates shown, Units of Measure as english, Tags are Hidden, Notes are hidden, Revisions are hidden, Start Page Numbering with "1", and Restart for each section box is checked; and Under "Header/Footer" jobtitle and jobname as a Header and Section number and Page number as a footer (similar to format shown on this section of the RFP).
*(2) Electronic Media Drawings (AutoCAD 2002) on CD-ROM shall be submitted to verify that the CADD standards being specified are complied with.

*(3) Color Boards are not required if there are no changes from the previous design submittal and if only minor changes are required, submit applicable coded samples (with tape ready for application) and corrected color legend. If major changes to the color board are required, resubmit the Color boards with actual color samples of all proposed exterior and interior finishes and revised corrected color legend. Provide replacement Color Board Photos, as required.
*(4) Furniture Design (CID) shall be in accordance with the AFCEE Interior Design Requirements (for 100 percent design). See Section 01004 INTERIOR DESIGN for additional information.
*(5) See Paragraph 3.7.1.8 Design Submittal CD-ROM for Adobe Acrobat files to submit. Design Analysis Calculations shall be included with the design analysis narrative and shall be scanned and saved in Adobe Acrobat 5.0. The design analysis and calculations shall utilize bookmarks for each chapter of the design analysis and each appendix or calculations.

3.7.1.6 Construction Set Distribution

See paragraphs above explaining Submittal Abbreviation Codes and Activity Distribution Addresses. The number of copies required for each submittal item are listed below.

Activity Submittal Item	CENWO-PM-M	CENWO-CD-QT	CENWO-CD-RM	CENWO-CD-RM-A
DANar-	10	2	3	2
DACalcs-	10	2	3	2
Specs-*(1)	10	2	3	2
SpecER	1	1	-	-
SubReg	2	2	2	2
Dwg-1/2-	10	2	3	2
Dwg Full-	-	-	1*(2)	2*(2)

EMDwg-*(3)	1	-	-	-
EMSpecs-*(3)	4	-	-	-
EMDA-*(3)	4	-	-	-
DCLet-	10	2	3	2
ColBd-*(5)	1	-	-	1*(5)
ColBd Photos-*(5)	1	1	1	1
CID- *(6)	1	-	-	-
CD (Acrobat)-*7	4	1	1	2
Brvw-	10	2	3	2
ECI-	4	2	3	2

Activity	AFSPC/CEPC	21 CES/CECC
Submittal Item		
DANar-	1	12
DACalcs-	1	12
Specs-*(1)	1	12
Dwg-1/2-	1	12
Dwg Full-	-	1*(2)
MMin-*(2)	1	12
EMDwg-	-	-
DCLet-	1	12
ColBd-	-	2 *(5)
ColBd Photos	-	2 *(5)
FDP- *(6)	1	1
Brvw	1	12
CD (Acrobat)-*7	1	10
ECI-	1	4

*CONSTRUCTION SET SUBMITTAL NOTES:

Specific Submittal requirements are addressed in Section 01332 and 01338.

*(1) Copy shall shall be the same as the 100 pecent Corrected submittal and incorporate any additional comments made to 100 percent corrected design submittal.
*(2) Each drawing sheet shall be stamped (P.E.) by the appropriate Designer.
*(3) Electronic Media Drawings (AutoCAD 2002), Electronic Media Specifications (Specsintact), and Electronic Media Design Analysis (MS Word (compatible with MS Word 2000).
Electronic Media shall be on CD-ROM (Recordable compact disk with minimum 650 megabyte capacity)
*(4) In addition, the Contractor shall e-mail the designated offices a copy of the ECI per requirements stated in this section.
*(5) See Note (3) above for 100 Percent Corrected Design submittal for all indicated offices, except for CENWO-CD-RM, where a complete color board and Color Board Photos, which reflects all changes made through accepted 100 Percent Corrected Design, shall be submitted.
*(6) Revisions to the Furniture Design (CID) shall be submitted.
*(7) See Paragraph 3.7.1.8 Design Submittal CD-ROM for Adobe Acrobat files to submit. Design Analysis Calculations shall be included with the design analysis narrative and shall be scanned and saved in Adobe Acrobat 5.0. The design analysis and calculations shall utilize bookmarks for each chapter of the design analysis and each appendix or calculations.

3.7.1.7 As-Built Submittals

See paragraphs above explaining Submittal Abbreviation Codes and Activity Distribution Addresses. The number of copies required for each submittal item are listed below.

Activity	CENWO-PM-M	CENWO-CD-QT	CENWO-CD-RM	CENWO-CD-RM-A
Submittal Item				
Asblt-	*	-	-	-
DD1354-	1	1	1	1

Activity	AFSPC/CEPC	21 CES/CECC
Submittal Item		
Asblt-	-	*
DD1354-	1	1

*NOTES for As-Built Submittals:

*See Section 01040 AS-BUILT DRAWINGS for requirements.

3.7.1.8 Design Submittal CD-ROM

n addition to hardcopy media, the design-build Contractor shall provide a CD-ROM consisting of design analysis, design analysis calculations and appendices, drawings, specifications, submittal register, design certification letter, and engineering considerations and instructions on CD-ROM in an Adobe Acrobat 5.0.pdf format. Each CD-ROM shall utilize bookmarks with titles. Each design submittal item and submittal item components shall be made easy to find (i.e. each specification section, chapters and appendices of design analysis, and each submittal item)

3.7.2 Review Comments:

For each design review submittal, the Contractor will be furnished comments from Omaha District and other agencies involved in the review process approximately 21 days after receipt, unless indicated otherwise. Review conference for the 60 Percent and 100 Percent Design submittals will be held approximately 30 days after receipt. If the Contractor disagrees technically with any comment or comments and does not intend to comply with the comment, he/she shall clearly outline, with justification reasons for noncompliance at the design review conference in order that the comments can be resolved. Annotated comments, including the disposition of all comments shall be furnished in writing by the Contractor within five (5) days of the review conference and shall be recorded in the Contractor prepared Meeting Minutes described in paragraph 3.7.6.1. The written documentation shall be forwarded in the same quantities to the distribution list shown in paragraph: "Distribution of Design Documents for Conformance Review" above.

The Government will review the 100% Backcheck Review Documents for a period of fourteen (14) days after receipt of the documents. After this review, a formal letter will be sent to the Contractor allowing him to commence

construction or rejecting the submittal.

Any backcheck review comments made by the indicated Government agencies to the 100 percenct Corrected Design Submittals shall be resolved prior to distribution of Construction Set documents. The Contractor shall furnish copies of Annotated backcheck review comments indicating disposition of all comments with the Construction document set.

3.7.3 Using Automated Review Management System:

Conference and post conference action: Government personnel, from the above Government Agencies, will present review comments for discussion and resolution. Copies of comments, annotated with comment action agreed on, will be made available to all parties before the conference adjourns. Unresolved problems will be resolved by immediate follow-on action at the end of conferences. Valid comments will be incorporated. After receipt of final corrected design documents upon incorporation of all backcheck comments (as many backchecks as are deemed necessary by the Government will be conducted), the Omaha District will recommend acceptance to proceed with construction. The Government intends to utilize the Dr. Checks review system, which is available at: http://65.204.17.188/projnet/home/version1/index.cfm, for processing review comments and responses. Access rights will be provided to the Design-Build Contractor after contract award. The Government, however, reserves the right to not accept design document submittals and withhold design payments, if comments are of too great a significance. In this case, every effort shall be made during follow-up action between the Contractor and the Omaha District to resolve conflicts and problems such that documents can be fully accepted. However, if final submittal(s) are incomplete or deficient, requiring correction by the Contractor and resubmittal for review, the cost of rehandling and reviewing will be deducted from payment due the Contractor at the rate of $1000.00(for each design discipline requiring resubmittal) per submittal. "Design Disciplines" in this paragraph consist of Architectural, Structural, Interior Design, Mechanical, Electrical, Civil/Site work, and Fire Protection.

3.7.4 Delays

Delays caused by the Contractor in completion of the 60 percent design, the 100 percent design or the 100 percent corrected design will not be considered as valid reason to delay completion of the entire design. The Government may not be held liable for delays caused by re-submittal efforts caused by designs submitted, which are rejected by the reviewers.

3.7.5 Reproduction (For Construction):

Upon the Government's completion of the review of the 100% Corrected Design submittal, the Contractor shall reproduce copies of the design documents (accepted for the purposes of beginning construction), subject to the incorporation of the Corrected 100% design review comments. The Cover Sheet of the Contractor prepared drawings shall bear the stamp or seal and signature of the registered architect or appropriate engineer responsible for the work and proposed to meet the RFP requirements. The date on each drawing shall reflect the month and year that the drawings were cleared for the purposes of beginning construction. The Cover Sheet of the drawings, Cover Sheet of the Specifications, and Cover Sheet of the Design Analysis shall include the date that the design documents were cleared for the purposes of beginning construction. The Contractor shall provide corrected 100 percent specifications in both hard copy and electronic media

(Specsintact Software Version as noted above or later). Distribution shall be as indicated above. The originals will be retained by the Contractor for recording of as-built conditions. Upon completion of the project, the accepted design documents corrected to reflect as-built conditions shall be supplied to the Government. See Section 01040 AS-BUILT DRAWINGS for as-built drawing requirements.

3.7.6 Government Design Review and Acceptance

3.7.6.1 Design Review Conference and Post-Design Review Conference Action:

All design review conferences shall be held on Peterson AFB. Government personnel will forward review comments to the Contractor for discussion and resolution prior to the design review conference. Copies of comments, annotated with comment action agreed on, will be made available to all parties before the design review conference adjourns. Unresolved problems will be resolved by immediate follow-on action at end of conferences. Valid comments will be incorporated. Upon satisfactory Government review of the 100 percent corrected design documents, the Omaha District will formally provide Government acceptance necessary to initiate construction. The Government, however, reserves the right to not accept design document submittals and to withhold design payments, if comments are of too great a significance. In this case, every effort shall be made during follow-up action between the Contractor and the Omaha District to resolve conflicts and problems such that documents can be fully accepted. However, if final submittal(s) are incomplete or deficient, requiring correction by the Contractor and resubmittal for review, the cost of rehandling and reviewing will be deducted from payment due the Contractor at the rate of $1000.00 (for each design discipline requiring resubmittal) per submittal. The Contractor shall submit to the Contracting Officer within [five (5)] calendar days, two two (2) copies of meeting minutes summarizing major decision points and issues which requires resolution and the action office. Annotated comments shall be attached to these minutes.

3.7.6.2 Complete Design Documents

The Contractor shall submit complete design documents in the same quantity and to the same offices listed above in paragraph "**Distribution of Design Documents for Conformance Review"**, for each corrected 100 percent design submittal (one or more) until the Government is satisfied that all review comments have been addressed and resolved.

3.7.6.3 Accuracy and Completeness of Design

Reviews by the Government of the design documents shall not be construed to be an endorsement of the accuracy or completeness of the design. Design deficiencies or omissions in the accepted design shall be the responsibility of the Contractor.

3.7.6.4 Responses to Review Comments

In responding to review comments presented by the Government, the Contractor's designer shall state how and where comments were addressed.

3.7.7 DD Form 1354, Transfer and Acceptance of Military Real Property

The Contractor shall provide, for acceptance, a completed DD Form 1354 "Transfer and Acceptance of Military Real Property" (Copy attached at the end of this section) with the 100 percent corrected design documents. DD

Form 1354 shall be filled out in accordance with attached Instructions for Preparation of DD Form 1354 and Army Pamphlet 415-28 "Guide to Army Real Property Codes" (Copy dated 10/03/2003 is available at the following website: http://www.usapa.army.mil/usapa_home.asp (Under "Offical Publications", "Army Administrative Publications", Search for "415-28" or or on solicitation CD-ROM in an Adobe Acrobat .pdf format under UFGS specification folder labeled "GUIDES", file name "p415_28.pdf".) The number of copies of the completed DD Form 1354 is noted above.

3.8 REVISIONS TO THE ACCEPTED DESIGN

3.8.1 Minimization of Design Revisions

The accepted design will be used by all parties involved in construction and in administration of the contract. Therefore, it is imperative that the design documents be kept up to date and an effective system of making and distributing changes be implemented. Since changes to the design increase risk of construction errors and deplete available administrative resources, every effort shall be made to minimize revisions to the accepted design. One of the measures of the Contractor's effectiveness of management will be how well the goal of minimizing changes to the accepted design is met. The use of effective quality control during design, and utilization of experienced and capable designers are some of the means that are expected to be used to accomplish this goal.

3.8.2 Supplemental Design Package and Certification

If revisions to the accepted design (Construction Set) become necessary, the Contractor shall submit a Supplmental Design Package using Attachment B "Supplemental Design Certification and Transmittal Form" attached at the end of this specification section. This Supplemental Design Package shall be submitted as a "G-DO" construction submittal in accordance with Section 01330 SUBMITTAL PROCEDURES. The revisions will be considered a "Variation" and the list of deviations from the accepted design shall be identified on the Supplemental Design Certification and Transmittal For and on the constuction submittal form ENG Form 4025-R. Variations from the Construction Set must be approved by the Contractor's Designer and Contractor's Quality Control Representative and accepted by the Contracting Officer as conforming with the RFP before construction of items affected by these revisions can commence. The Contractor shall comply with all the requirements of paragraph "VARIATIONS" of Section 01330 SUBMITTAL PROCEDURES in preparation of the Supplemental Design Package.

Attachment A - DESIGN CERTIFICATION AND TRANSMITTAL LETTER

[Contractor's Letterhead]

[Date: _____]
[Contract No. _____]

[Reviewing Component Address]

Subj: DESIGN CERTIFICATION AND TRANSMITTAL LETTER
[Project Title _____]
[Project Location _____]
[Contract No. _____]

Gentlemen

Enclosed are the following documents, which I hereby certify are in compliance with the RFP requirements of the subject construction contract and can be used to commence construction subject to Government Conformance Review:

1. Design Drawings

2. Project Specification

3. Design Analysis

   a. Civil
   b. Water Supply and Wastewater Collection
   c. Architectural
   d. Interior Design
   e. Structural
   f. Mechanical
   g. Fire Protection
   h. Electrical
   i. Environmental Protection, Compliance and Permits
   j. Health and Safety
   k. Sustainable Design

4. Submittals Register

5. All other Design Deliverables

6. Deviations (List of Deviations with Justification Attached)

[Typed Name and Signature of an
Officer of the Contractor's Company]

Copy to:
[As standard with the Contractor]

Attachment B - SUPPLEMENTAL DESIGN CERTIFICATION AND TRANSMITTAL FORM

[Contractor's Letterhead]

[Date: _____]
[Contract No. _____]

[Reviewing Component Address]

Subj: SUPPLEMENTAL DESIGN CERTIFICATION AND TRANSMITTAL FORM
[Project Title _____]
[Project Location _____]
[Contract No. _____]

Gentlemen

The supplemental design items listed below and the attached documents, unless identified otherwise, I hereby certify are in compliance with the RFP requirements of the subject construction contract and are compatible with other elements of work, subject to Government conformance review:

1. Nature and Features of the Design Variation(s):

2. Why the each Design Variation is desirable and Beneficial to the Government:

3. List of any additional Deviations from the RFP:

4. List of Specific Documents Supporting Design Variation(s):

a. Design Drawings

(1) Sketches:
(2) Reissued Drawings:
(3) Descriptive Changes:

b. Project Specification

(1) Reissued or New Sections:
(2) Descriptive Changes:

c. Design Analysis

(1) Reissued Pages:
(2) Reissued or New Calculations:

d. Any other Design Deliverable:

[Typed Name and Signature of an Officer of the Contractor's Company]

Copy to:

[As standard with the Contractor]

ATTACHMENT C SAMPLE SUBMITTAL PARAGRAPH

The below listing is an example of a typical submittal paragraph as it may appear within the technical guide specifications and with the appropriate text for the submittal review designations, G-DO, G-AO, or FIO (blank).

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Fire Sprinkler Design Drawings; G-DO

SD-03 Product Data

Meters

Regulators

SD-08 Manufacturer's Instructions

Dielectric Unions

Pressure Reducing Valves

SD-10 Operation and Maintenance Data

Wet Pipe Sprinkler System; G-AO

-- End of Section --

TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY

Form Approved
OMB No. 0704-0188

PAGE OF PAGES

The public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to the Department of Defense, Executive Services and Communications Directorate (0704-0188). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE ABOVE ORGANIZATION.

1. FROM *(Installation/Activity/District and ZIP Code)*	2. DATE PREPARED *(YYYYMMDD)*	3. PROJECT/JOB NUMBER	4. SERIAL NUMBER
5. TO *(Installation/Activity/Service, ZIP Code & INSNO)*	6. SITE/INSNO/ NAME	7. CONTRACT NUMBER(S)	8. DRAWING NUMBER(S)

9. TRANSACTION DETAILS

a. ☐ NEW CONST. ☐ EXISTING FAC. ☐ CAPITAL IMP. ☐ OTHER *(Specify)*

b. ☐ PHYS. COM. AVAIL. ☐ BENF/O ☐ PARTIAL BOD ☐ FINANCIAL COM. ☐ OTHER *(Specify)*

c. ☐ DRAFT ☐ FINAL ☐ INTERIM

d. EFFECTIVE DATE *(YYYYMMDD)*

10. ITEM NO.	11. FACILITY NO.	12. CATEGORY CODE	13. CATCODE DESCRIPTION	14. TYPE	AREA 15. UNIT OF MEAS 1	AREA 16. TOTAL QUANTITY UM 1	OTHER 17. UNIT OF MEAS 2	OTHER 18. TOTAL QUANTITY UM 2	19. COST	20. FUND SOURCE	21. FUND ORG	22. INTER-EST CODE	23. ITEM REMARKS

24. STATEMENT OF COMPLETION. The facilities listed hereon are in accordance with maps, drawings, and specifications and change orders approved by the authorized representative of the using agency except for the deficiencies listed on the reverse side.

a. TRANSFERRED BY *(Typed Name and Signature)*

b. DATE SIGNED *(YYYYMMDD)*

c. TITLE *(Area Engr./Base Engr./DPW)*

25.a. ACCEPTED BY *(Typed Name and Signature)*

b. DATE SIGNED *(YYYYMMDD)*

c. TITLE *(DPW/RPAO)*

26. PROPERTY VOUCHER NUMBER

Reset

27. CONSTRUCTION DEFICIENCIES *(attach blank sheet for continuations)*	28. PROJECT REMARKS *(attach blank sheet for continuations)*

INSTRUCTIONS

GENERAL. This form has been designed and issued for use in connection with the transfer of military real property between the military departments and to or from other government agencies. It supersedes ENG Forms 290 and 290B (formerly used by the Army and Air Force) and NAVDOCKS Form 2317 (formerly used by the Navy).

Existing instructions issued by the military departments relative to the preparation of DD Form 1354 are applicable to this revised form to the extent that the various items and columns on the superseded forms have been retained. The military departments may promulgate additional instructions, as appropriate.

For detailed instructions on how to fill out this form, please refer to Unified Facilities Criteria (UFC) 1-300-08, dated 17 December 2003.

SPECIFIC DATA ITEMS.

1. **From.** Name and address of the transferring agency.

2. **Date Prepared.** Date of actual preparation. Enter all dates in YYYYMMDD format (Example: March 31, 2004 = 20040331).

3. **Project/Job Number.** Project number on a DD Form 1391 or Individual Job Order Number.

4. **Serial Number.** Sequential serial number assigned by the preparing organization (e.g., 2004-0001).

5. **To.** Name and address of the receiving installation, activity, and service of the Real Property Accountable Officer (RPAO).

6. **Site/INSNO and Name.** Site or installation number and site name where the constructed facility is located.

7. **Contract Number(s).** Contract number(s) for this project.

8. **Drawing Number(s).** Drawing number(s) or CAD identifier(s) for project components.

9. **Transaction Details.**
   a. Type of Transaction. Mark (X) only one box.
   b. When/Event. When or event causing preparation of DD Form 1354. X only one box.
   c. Version. Draft, interim, or final DD Form 1354. X only one box.
   d. Effective Date. Effective date for transaction; start date for depreciation.

10. **Item Number.** Use a separate item number for each facility, no item number for additional usages.

11. **Facility Number.** Unique facility number identified in Real Property Inventory.

12. **Category Code.** The category code describes the facility usage.

13. **Catcode Description.** The category code name which describes the facility usage.

14. **Type.** Type of construction: P for Permanent; S for Semipermanent; T for Temporary.

15. **Area: Unit of Meas 1.** Area unit of measure; use SF, SY, AC only.

16. **Total Quantity UM 1.** The total area for the measure identified in Item 15. Use negative numbers for demolition.

17. **Other: Unit of Meas 2.** Unit of Measure 2 is the capacity or other measurement unit (e.g., LF, MB, EA, etc.).

18. **Total Quantity UM 2.** The total capacity/other for the measure identified in Item 17.

19. **Cost.** Cost for each facility; for capital improvements to existing facilities, show amount of increase only.

20. **Fund Source.** Enter the Fund Source Code for this item, i.e., 01-MILCON, 02-BRAC, 03-O&M, etc.

21. **Funding Organization.** Enter the code for the organization responsible for replacing this facility at the end of its useful life, i.e., 00-Army Active, 01-Army Reserve, 02-Army National Guard, etc.

22. **Interest Code.** Enter the code that reflects government interest or ownership in the facility, i.e., 01-Owned by DoD, 02-Owned by Federal Government (non-DoD), etc.

23. **Item Remarks.** Remarks pertaining only to the item number identified in Item 10; show cost sharing.

24. **Statement of Completion.** Typed name, signature, title, and date of signature by the responsible transferring individual or agent.

25. **Accepted By.** Typed name, signature, title, and date of signature by the RPAO or accepting official.

26. **Property Voucher Number.** Next sequential number assigned by the RPAO in voucher register.

27. **Construction Deficiencies.** List construction deficiencies in project during contractor turnover inspection.

28. **Project Remarks.** Project level remarks, continuation of blocks, and used to explain "other" entries in Item 9.

Reset

INSTRUCTIONS FOR PREPARATION OF DD FORM 1354

Purpose. This table provides the procedures for completing DD Form 1354 (Transfer and Acceptance of Military Real Property) by all responsible parties.

Detailed Instructions. The Contractor shall complete only the shaded Specific Data Items listed below on DD Form 1354.

SPECIFIC DATA ITEMS

1. From. Name and address of the transferring agency.

2. Date Prepared. Date of actual preparation. Enter all dates in YYYYMMDD format (Example: March 31, 2004 = 20040331).

3. Project/Job Number. Project number on a DD Form 1391 or Individual Job Order Number.

4. Serial Number. Sequential serial number assigned by the preparing organization (e.g., 2004-0001).

5. To. Name and address of the receiving installation, activity, and service of the Real Property Accountable Officer (RPAO).

6. Site/INSNO and Name. Site or installation number and site name where the constructed facility is located.

7. Contract Number(s). Contract number(s) for this project.

8. Drawing Number(s). Drawing number(s) or CAD identifier(s) for project components.

9. Transaction Details.
a. Type of Transaction. Mark (X) only one box.
b. When/Event. When or event causing preparation of DD Form 1354. X only one box.
c. Version. Draft, interim, or final DD Form 1354. X only one box.
d. Effective Date. Effective date for transaction; start date for depreciation.

10. Item Number. Use a separate item number for each facility, no item number for additional usages.

11. Facility Number. Unique facility number identified in Real Property Inventory.

12. Category Code. The category code describes the facility usage.

13. Catcode Description. The category code name which describes the facility usage.

14. Type. Type of construction: P for Permanent; S for Semipermanent; T for Temporary.

15. Area: Unit of Meas 1. Area unit of measure; use SF, SY, AC only.

16. Total Quantity UM 1. The total area for the measure identified in Item 15. Use negative numbers for demolition.

17. Other: Unit of Meas 2. Unit of Measure 2 is the capacity or other measurement unit (e.g., LF, MB, EA, etc.).

18. Total Quantity UM 2. The total capacity/other for the measure identified in Item 17.

19. Cost. Cost for each facility; for capital improvements to existing facilities, show amount of increase only.

20. Fund Source. Enter the Fund Source Code for this item, i.e., 01-MILCON, 02-BRAC, 03-O&M, etc.

21. Funding Organization. Enter the code for the organization responsible for replacing this facility at the end of its useful life, i.e., 00-Army Active, 01-Army Reserve, 02-Army National Guard, etc.

22. Interest Code. Enter the code that reflects government interest or ownership in the facility, i.e., 01-Owned by DoD, 02-Owned by Federal Government (non-DoD), etc.

23. Item Remarks. Remarks pertaining only to the item number identified in Item 10; show cost sharing.

24. Statement of Completion. Typed name, signature, title, and date of signature by the responsible transferring individual or agent.

25. Accepted By. Typed name, signature, title, and date of signature by the RPAO or accepting official.

26. Property Voucher Number. Next sequential number assigned by the RPAO in voucher register.

27. Construction Deficiencies. List construction deficiencies in project during contractor turnover inspection.

28. Project Remarks. Project level remarks, continuation of blocks, and used to explain "other" entries in Item 9.

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SECTION 01336

60 PERCENT DESIGN REQUIREMENTS

PART 1 60 PERCENT DESIGN SUBMITTALS

Attachments: Fire Code Analysis and Handicapped Checklist

For general submittal requirements, See Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES.

1.1 SITE PLANNING

1.1.1 Drawings

1.1.1.1 Location Plan and Vicinity Map

A vicinity map consists of a small scale drawing of the project location, similar to a road map. A Location Plan consists of a small scale drawing showing the Government property or reservation limit with the construction project site shown. The drawing shall show the facility approved Contractor Access and Haul Routes.

1.1.1.2 Survey Plan

The information depicting existing conditions used to generate site drawings shall be shown on this drawing. An engineering survey of the site will be presented to the Contractor selected as a result of this RFP process. Any additional survey information required by the Contractor for design above that shown in the prepared engineering survey shall be procured and paid for by the Contractor. The scale of the survey plan shall match that of the site plan.

1.1.1.3 Removal Plan

The removal plan will show the existing physical features and condition of the site before construction. This information should include the field survey to show all above and below ground utilities; buildings, drives, roads and parking areas, walks, and vegetation; and such facilities as retaining walls, underground storage tanks, foundations, etc. Each physical feature to be removed shall be as indicated on the standard legend sheet, a legend on the removal plan, and properly noted: to be removed, to remain, or to be relocated. No existing or proposed contours shall be shown on this plan. The scale of the removal plan shall match that of the site plan.

1.1.1.4 Site Plan

The site plan shall show all the site layout information necessary to field locate the building, service drives, walks, and all other appurtenances to be constructed on the project. All site related work to be constructed will be located by dimensions. The site plan will identify all site related items such as: curbs, pavements, walks, courtyards, bollards, trash enclosures, chiller units, electrical transformers locations, etc. in accordance with a standard legend sheet or with additional legends or

notes. Site plans shall be at a scale of 1" = 30'. No existing or proposed contours shall be shown on this plan. The site plan, prior to adding the dimensions, should serve as the base sheet to the other plans, such as: survey plan, removal plan, utilities plan, grading and drainage plan and landscape plan. The site plan shall show all existing physical features and utilities within and adjacent to the work site that will remain after the proposed construction has been completed. Whenever the site plan occupies more than one sheet of drawings, a key plan shall be included. Additional plans showing specific areas of the site in smaller scales can be included if more detail is necessary.

1.1.1.5 Construction Sequencing Plan

The construction sequencing plan shall show the construction limits, temporary construction zone fence and gate locations, storage areas, staging areas, etc. The scale shall be appropriate to the information provided. Any specific construction phasing and security concerns shall be included in these plans.

1.1.1.6 Site Furnishing Details

The Contractor shall provide designs and details as necessary for site furnishings and accessories.

1.1.1.7 Landscape Plan

A landscape plan is included in the drawing set to serve as a guide in preparing the final contract drawings. A detailed landscape plan showing trees, shrubs, ground cover, AT/FP boulders and bollards, seeded and sodded areas, shall be prepared by the Contractor. The landscape plan shall be prepared by a fully qualified, experienced professional Landscape Architect. The Contractor shall specify types of plant materials that are locally grown, commercially available and acclimated to the project environment. The landscape plan shall include a plant materials schedule or listing. This schedule shall include botanical names, common names, key, size and the method of transplanting. The Landscape Plan shall also show all unsurfaced ground areas disturbed by construction within the project limits with these areas shown to be seeded, sodded, or mulched as required. The scale of the landscape plan shall match that of the site plan.

1.1.1.8 Landscape Details

The Contractor shall verify the methods of planting to meet the project site/installation requirements and provide the necessary landscape details to perform the contract design work. Details shall reflect local practices and conditions for installation. The Contractor shall provide designs and details as necessary for other required site furnishings and accessories.

1.1.1.9 Sprinkler Irrigation Systems

A list of applicable criteria and/or design standards shall be provided. This shall also include precipitation rates, allowable pipe material and preliminary calculations of total flow and pressure requirements. A narrative description of the system including special requirements and trickle systems shall be provided.

1.1.2 Specifications

Provide a listing by title and number of all Technical Specifications proposed for use in the final site design.

1.1.3 Design Analysis Narrative

Design analysis shall include the following:

1.1.3.1 Design References

Design references used in preparing the site design.

1.1.3.2 Basis, Specific Goals, Objectives and Priorities For Site Design

The design analysis should give the basis, specific goals, objectives and priorities for site design of the project. Identify, explain and document use of design criteria and how the design meets goals, objectives and priorities. Identify the preferred site development concept. Document pollution prevention measures and other environmental considerations made during design. The 60 percent design analysis must be approved and accepted before Final Design.

1.2 CIVIL

1.2.1 Drawings

1.2.1.1 Grading and Drainage Plan

A preliminary grading and drainage plan shall be provided at the same scale as the site plan. Tentative new and existing grading contours shall be indicated at 1 foot contour intervals. Indicate finished floor elevation of the new building. Plans shall show layout of the new and existing storm drainage systems. Uniform grades shall be labeled using slope arrows. Provide spot elevations at building corners, access drives, sidewalks, changes in grade, etc. Provide location and description of benchmarks and indicate vertical and horizontal datums.

1.2.1.2 Grading Sections

Provide grading sections through the site showing finished and existing grades, pavement sections in detail, slope percentage, ditches, etc.

1.2.1.3 Typical Pavement Sections

Provide typical pavement sections and details showing interface between new and existing pavements and new pavements of different sections.

1.2.2 Specifications

Provide a listing by title and number of all Technical Specifications proposed for use in the final Civil design.

1.2.3 Design Analysis Narrative

Design analysis shall include the following:

1.2.3.1 References

Design references used in preparing the civil design.

1.2.3.2 Grading

A narrative of the grading design and criteria used.

1.2.3.3 Pavements

A narrative of the pavement design and criteria used.

1.2.3.4 Drainage

A narrative of the drainage design and criteria used. Include information on the storm drain pipe materials selected and their ability to withstand earth dead loads and live loads that will be imposed.

1.2.3.5 Basis, Specific Goals, Objectives and Priorities For Civil Design

The design analysis should give the basis for the Civil design and should establish specific goals, objectives and priorities for Civil design of the project. Identify, explain and document use of design criteria and how the design meets goals, objectives and priorities. Identify the preferred site development concept. Document pollution prevention measures and other environmental considerations made during design. The 60 percent Design Analysis must be approved and accepted before Final Design.

1.2.4 Design Analysis Calculations

1.2.4.1 Storm Drainage System Calculations

Storm Drainage System Calculations shall include the following:

a. Drainage area map showing boundaries of each drainage area and respective drain inlet or culvert.

b. Storm run-off calculations for each drainage area.

c. Preliminary storm drain pipe sizing calculations.

1.3 GEOTECHNICAL

See Structural Design Requirements.

1.4 WATER SUPPLY AND WASTEWATER

1.4.1 Drawings

1.4.1.1 Water Distribution and Sewage Collection Systems Plan (including building services)

Provide all existing utilities and above ground features which may pose as an obstacle (i.e., water, sewer, gas, electrical, etc.) on the basic site plan layout. Exclude siting notes and dimensions from the plan. Provide all proposed new water and sewer lines with preliminary sizes. This shall include all new service lines up to the 5 feet building line. Show the proposed locations of all new manholes, fire hydrants, valves (including PIV's), connection points and etc.

1.4.2 Specifications

Specifications shall be coordinated with the plans and include all items. Provide a listing of specifications to be provided. Provide a complete copy of special sections to cover those subjects for which no UFGS guide specifications are used or available.

1.4.3 Design Analysis Narrative

Design analysis shall include the following:

1.4.3.1 References

Provide design references used in preparing the water and wastewater design.

1.4.3.2 Water Supply and Distribution Systems

A narrative of the water supply and distribution systems design and applicable criteria used shall be provided. Include calculations for the peak and average domestic demands, the fire flow required and the available flow and residual pressures. A description of the water distribution system, a listing of allowable piping materials, hydrant flow test data and preliminary calculations necessary to support equipment, piping sizes, fire and domestic demands, headloss, etc., shall be provided.

1.4.3.3 Wastewater and Sewers

Based on existing information the sanitary sewer system in the vicinity of the proposed facility is assumed to be adequate to carry the flows expected to be generated by the new facility. A narrative of the wastewater supply design and applicable criteria used shall be provided. Include the preliminary calculations used to design the average and peak contributing flows. Field verify the available capacity and full flow capacity of the existing system to ensure that it will be adequate for the flows generated by the new facility. Include the available capacity and full flow capacity in the design analysis. Preliminary calculations necessary to support equipment and piping sizes and a listing of allowable piping materials shall be provided.

1.5 ARCHITECTURAL

1.5.1 Drawings

Sixty percent architectural drawing submittal shall be a complete set of architectural drawings without large scale details. All other drawings shall be complete except referencing of the large scale details.

1.5.1.1 Floor Plans

Provide a double line Composite Floor Plan of the entire building, drawn at the largest scale practicable to include the entire building on a single sheet. This building is of a size that will require the floor plans to be divided into multiple areas. See paragraph on Drawing Scales for plan scale requirements. Floor plans shall essentially be complete with the exception of large scale detail referencing. Floor plans shall be scaled double-line drawings showing the functional arrangement, pocheing, location of all openings and plumbing fixtures, all section cuts, wall types, all notes and leaders, all general notes, and all dimensions shall be

completed. The plans shall indicate door swings, door numbers and window type; door and window schedules are required. A north arrow shall be shown on each floor plan. Enlarged toilet and stair plans shall also be included. The first composite plan sheet shall include a gross area tabulation comparing the actual square meters with the authorized square meters of the facility. Architect-Engineer suggestions for plan improvement shall be fully shown and justified. Include the following:

Overall, control, and door/ window opening dimensioning.
Match lines for combining individual portions of floor plans.
Room names and numbers.
Structural column or bay indicators.
Wall and building section cuts.
Door swings and door numbers.
Window types.
Area in square meters.
General notes.

Also provide a Key Plan at a uniform location on all Floor Plan sheets which shows the interrelationships between the building portions. This key plan will be scaled, and oriented in the same manner as the floor plan for all plan type drawings of all disciplines. When dimensioning, use arrowheads, not dots or slashes. Where major structural elements are included as parts of architectural detailing, do not indicate sizes. These elements should all be fully defined as part of the structural design documents. Major elements of mechanical and electrical equipment affecting room size or shape, shall be shown on the architectural plans to a practicable extent and coordinated with other respective disciplines. When applicable, Government-furnished, Contractor-installed, or Government-furnished and Government-installed items shall be shown as a dashed line.

1.5.1.2 Reflected Ceiling Plans

Reflected ceiling plans shall be complete including all electrical lights, mechanical supply & diffusers, notes, complete legends and pocheing of all materials to be used. See paragraph on Drawing Scales for reflected ceiling plan scale requirements.

1.5.1.3 Roof Plan

Composite and larger area roof plans shall be complete including all notes, legends, slope indications, gutter and downspout locations, and roof overflow drains. All elements located on the roof shall be coordinated with all disciplines. See paragraph on Drawing Scales for roof plan scale requirements.

1.5.1.4 Building Elevations

Provide all building elevations complete showing the appearance and architectural treatment. Elevations shall be dimensioned to show total height, and relation to grade. Critical elevations such as top of finish floor, top of steel, etc. shall be indicated. All notes for materials shall be included. See paragraph on Drawing Scales for Exterior Building Elevation scale requirements.

1.5.1.5 Building Sections

Building cross section and longitudinal sections shall be included to show general interior volumes, construction methods, and height of ceilings and

partitions. Identify materials used and necessary dimensions. See paragraph on Drawing Scales for Building Section scale requirements.

1.5.1.6 Wall Sections

Drawings shall include all wall sections and stair section conditions including corridors, showing vertical control elevations and dimensions, with all materials labeled. The sections should normally be cut through doors, windows, and other critical wall section locations. Wall sections shall not be broken. Additional details shall be included when necessary to illustrate important or unusual features. All horizontal dimensions shall occur on the plans and vertical dimensions on the sections and elevations. See paragraph on Drawing Scales for Wall Section scale requirements.

1.5.1.7 Room Finish Schedules

Room finish schedule shall be complete in accordance with Corps of Engineers (COE) standard format.

1.5.1.8 Door, Window, and Louver Schedules

Door schedule shall be complete in accordance with Corps of Engineers (COE) standard format. Schedule shall include door and frame types, except referencing to door details and hardware sets. Window and louver schedules shall be complete including window and louver types except referencing to details.

1.5.1.9 Fire Ratings

Wall ratings, and fire hazards shall be clearly indicated as required by Fire Protection criteria. Wall fire ratings shall be graphically shown by a continuous symbol or pocheing within the wall on a Fire Protection /Life Safety Plan. When other functions coexist with the fire protection functions, their integration shall be clearly indicated, with an analysis that describes how both functions will be served. Provide a separate, composite type floor plan which makes an accurate presentation of these various features and functions.

1.5.1.10 Drawing Scales

Architectural work shall be drawn at the scales listed below. Other scales may be used only by written authorization through the Project Manager, Omaha District. Units of measurements shown on the drawings shall be done in millimeters. All disciplines should use the same scale for plan sheets. The following is a comparison guide to establish equivalent scaling of drawings:

	ENGLISH
Composite Plans (Note 1)	Varies
Floor Plans	1/4-Inch = 1'-0"
Reflected Ceiling Plans	1/4-Inch = 1'-0"
Detail Plans (Note 2)	1/2-Inch = 1'-0"
Roof Plans	1/4-Inch = 1'-0"
Exterior Elevations	Same scale as plan
Interior Elevations	1/2-Inch = 1'-0"
Interior Toilet Elevations	1/2-Inch = 1'-0"
Building Cross Sections	1/4-Inch = 1'-0"
Wall Sections (Note 3)	3/4-Inch = 1'-0"

Stair Sections	3/4-Inch = 1'-0"
Details (Note 2)	3-Inches = 1'-0"
Wall Types	3/4-Inch = 1'-0"
Fire Protection Plans (Note 1)	Varies

Notes:

1. Scale of composite plan shall be as required so that the entire facility is drawn on one sheet without break lines.

2. The goal of this requirement is that the details be large enough to show all fixtures, accessories, equipment, materials, manner of construction, clearances required for proper maintenance, and complete dimensions. Toilet rooms and Equipment rooms are examples of the kind of spaces which shall be drawn as a Detail Plan.

1.5.1.11 Legends

Standard architectural material symbols used on the drawings shall be provided as a separate architectural legend drawing located just in front of the architectural drawings in the set. Additional material symbols should be added to the Legend Sheet as needed for the project.

1.5.1.12 North Arrows

North arrows shall be oriented the same direction on all plan sheets and by all disciplines; including site and civil drawings. Plan north shall be "up" or the left on the drawings. Indicate true north on composite plan drawings. North arrows shall be located approximately at the same location on all sheets.

1.5.1.13 Modular Design

Modular Design practices shall be followed in the design of all masonry buildings or components of buildings. Dimensions shall be figured to whole or half-unit lengths of standard units in order to reduce on-site cutting of masonry.

1.5.1.14 Symbols

The Room and Door Numbering system shall be consistent. The standard symbols for Amendments (a triangular box) or Modifications (a type of circular box, see the chapter on Drafting Criteria) to the contract shall not be used for any other purpose, and care must be taken to avoid using even similar appearing but technically different symbols. Room numbering shall start at the main entrance and proceed clockwise around functional areas.

1.5.1.15 Schedules

Schedules for room finish, doors, windows, louvers, etc., shall be clear and complete. As many columns as necessary should be provided in order to present the essential information. The "Remarks" column should not be used as a substitute for an information column. Normally a single item should be presented on each schedule line. Other scheduling methods as standard with the A-E may be used if approved by written authorization from the Project Architect, Omaha District.

1.5.1.16 Notes

Notes may be placed on drawings to reduce the amount of repetitive drafting, provided that clarity is not lost. General notes should be placed at the right-hand edge of the sheet and, if possible, should be located on the first sheet in the set. Notes that pertain to each drawing however, should be placed on each drawing.

1.5.1.17 Dimensions

Dimensions must be complete, accurate and fully coordinated. Dimensions should be to points easily measurable in the construction, and should be laid out to eliminate refiguring in the field. Dimensions should be tied-in to column lines, etc., to facilitate checking. Plan dimensions for frame construction should be to face of stud (or sheathing) for exterior walls, to one face of stud for interior partitions, and to centerline of openings. For masonry construction, dimensions should be to one or both nominal faces of masonry and to jambs of openings.

1.5.1.18 Facility Elevation

The level of finished floor shall be indicated as EL.= 100 000. Elevations for footings, etc., shall be related to this figure. Sea level elevations shall not be shown on the building drawings.

1.5.1.19 Access to Utilities

All utilities within the building, such as piping, ductwork, electrical work, etc., shall be concealed in finished areas. Provide plumbing chases in toilet areas. The clear space above ceilings and the size of chases must be carefully figured to accommodate piping slopes and connections, ductwork crossovers, and similar situations. Access must be provided to valves, cleanouts, etc. Space provided for utilities systems must be adequate but should not be excessive.

1.5.1.20 Reflected Ceiling Plans

Reflected Ceiling Plans shall be provided for all spaces in the building. Reflected ceiling plans shall show the ceiling tile layout and location of gypsum wallboard and other ceiling types where applicable. All light fixtures, air diffusers, grilles, registers, PA speakers, sprinkler head layout, smoke and heat detectors - if ceiling mounted, and other ceiling mounted items will also be shown on the reflected ceiling plans. The fixtures and other equipment shall be laid out in a regular pattern symmetrical with the ceiling tile grid, or symmetrical with the room centerlines, columns, windows, or other feature that dominates. All ceiling mounted items shown shall be fully coordinated with all other disciplines.

1.5.1.21 Sketches

All sketches presented during the design phase shall be reduced to 8-1/2" by 11" and included in this design analysis to document the design options and decisions evaluated during the design process.

1.5.2 Technical Specifications

1.5.2.1 Use of Technical Guide Specifications

a. Technical Guide Specifications are prepared by the Corps of Engineers to achieve the maximum uniformity in contract specifications. The technical guide specifications describe the type and quality of material and installation normally acceptable for Corps construction, and often represent specific agreement between the Corps and the applicable industry. The provisions of the technical guide specifications should not be changed without justification. The 60% submittal shall include a draft edited specifications of all the applicable sections. Items added or deleted in these specification sections shall be evident. Complete descriptions including specific size, gauge, and configuration are included in the technical Guide Specifications for a wide variety of items. The designer must be familiar with the technical Guide Specification requirements in order to provide details fully coordinated with the technical specification descriptions. Terminology used on the drawings shall be the same as used in the Technical Guide Specifications. Where it is desirable to detail a variance with the standard provisions of the Technical Guide Specifications, the specifications must be revised to coordinate with the details. In addition to the guidance in SECTION 01332 on editing technical specifications, data and sample submittals for all interior and exterior finishes shall be "GA1" submittals.

b. New guide specifications shall be limited to those specialty type items not covered in the regular sections of Technical Guide Specifications.

1.5.3 Design Analysis Narrative

The Design Analysis shall be essentially complete with emphasis on the following:

1.5.3.1 Basic Criteria Statement

A statement indicating the basic criteria to be applied to the design including type of construction (noncombustible, etc.), category of construction (permanent, etc.), major fire protection and exit requirements, etc..

1.5.3.2 Description of Materials

A description of materials for all major building components and of all interior and exterior finishes ascertaining their matching of existing. The description of materials must include type of exterior wall construction, room finish schedule, window types, panel materials, etc. The description of materials should follow the continuity of the Military Handbook 1190. The description of finishes may be presented in schedule form.

1.5.3.3 Additional Criteria/Clarification

A list of items on which additional criteria, clarification, or guidance is

required.

1.5.3.4 Reason for Selection

The written presentation must include the designer's reasons for selecting specific materials, architectural compatibility, and architectural treatment in all cases in which the reason for selection is not obvious.

1.5.3.5 Site Adaptation of Standard Drawings

Site adaptation of standard drawings shall include the following in the design analysis.

a. An outline of the selections made where the standards permit the designer a choice of design or material.

b. An outline of items on the standard that do not conform to current criteria or to the design instructions, and suggested methods for changing the standards.

c. An outline of errors found in the standards and suggested methods for correction.

d. An outline of improvements the designer feels should be made to the standards, with full explanation and justification.

1.5.3.6 General Parameters

The design analysis shall follow the format described herein.

a. The purposes, overall functions, and total capacities of the facility.

b. The design theme or visual appearance of the exterior and interiors of the building, and how this facility coordinates with the image criteria of the installation on which it will be constructed.

c. The number of personnel to use facility.

d. The type of activities and equipment involved.

e. The anticipated life of the functions to be accommodated.

f. The category of construction; permanent

1.5.3.7 Functional and Technical Requirements

a. Functional areas, occupant capacities, and allocation, including a functional relationship matrix.

b. All items of equipment, required.

c. Occupational safety and health.

d. Handicapped accessibility.

e. Energy conservation energy budget goals.

f. Sound and vibration control.

g. Interior service areas.

h. Physical security; lock and keying, intrusion-detection, alarms, restricted access areas, interior guard support, and ties to local authorities.

i. Justification for selection of exterior and interior finishes and materials.

j. Moisture Vapor Control.

k. Lessons learned incorporated into the design.

1.5.3.8 Design Objectives and Provisions

a. Adaptation of the building to the size, shape, and orientation of the site.

b. Building layout to establish convenient circulation flows during normal operation and emergency evacuation activities, for materials, equipment, services, and people.

c. Grouping spaces into sound-compatible zones and protective construction zones, e.g., for fire and storm.

d. Space layout compatible with modular (structural and environmental) support systems.

e. Type of construction materials, architectural systems, and finishes.

f. Building expandability/changeability.

g. Physical security.

h. Barrier-free design.

i. Energy conservation. (insulation, orientation)

j. Acoustical design.

k. Moisture vapor condensation design.

l. Composition of masses and spaces architectural compatibility and architectural details to reflect the design theme and desired image, and the scale and nature of the activities involved.

m. Perception of the building details and volumes. (Specific provisions made, e.g., an identifiable sequence of viewing positions for experiencing the interior and exterior architectural design.)

n. Enhancement of materials and systems maintenance and operation.

o. Economy of building construction, operation, and maintenance: life-cycle cost effectiveness.

1.5.3.9 Coordination with Installation or Outside Agencies

a. Physical security support.

b. Occupational safety and health, as required.

c. Government furnished equipment.

d. Operations and maintenance support.

1.5.3.10 Checklists

Fire Protection Code Analysis and Handicapped Checklist shall be included in the Design Analysis. See attachments No. 1 and No. 2 at the end of this section.

1.5.4 Design Analysis Calculations

a. Net room areas, occupant capacity and gross building areas.

(Categorize areas and capacities under the titles of "Operational Space Requirements", "Administrative Space Requirements", "Storage Space Requirements", and "Support Space Requirements".)

b. U-values for each wall, window, door, or roof type studied or selected.

c. Acoustics.

d. Rainfall intensity relative to roof area and roof drain size and number calculations.

1.6 INTERIORS

1.6.1 DESIGN ANALYSIS/NARRATIVE

The design analysis shall contain an explanation of the desired image or visual appearance of the interior of the facility and the design intent.

1.6.2 DRAWINGS

1.6.2.1 FURNITURE FOOTPRINT

A furniture footprint indicating proposed furniture layout shall be incorporated into the drawings. Drawings shall be at 1/4" = 1'-0" scale. Prewired workstation panel placement shall be shown and electrical, communications, and EDP outlet placement shall be clearly indicated.

1.6.2.2 FURNITURE DESIGN (CID)

Furniture package shall be in accordance with the AFCEE Interior Design Requirements for 35% (Project Definition) design.

1.6.3 TECHNICAL SPECIFICATIONS

Appropriate technical specifications shall be provided and coordinated with the drawings and design analysis. Specifications shall be edited to

identify proposed product and installation requirements. Where materials or installation requirements are not covered in the provided specifications, information shall be prepared to cover these items.

1.6.4 COLOR BOARDS AND LEGENDS

Color boards shall show actual color samples of all proposed exterior and interior finishes. A color board legend shall accompany the boards and shall clearly identify all finishes. Clarification of finish placement shall be required when more than one color of a single finish is proposed. Color boards shall be 8 1/2" x 11" in size and provided in a three ring binder. Include project name and location, design stage and date on the front cover and spine of the binder.

1.7 STRUCTURAL

1.7.1 DRAWINGS

Drawings shall include roof framing plans, floor slab plans and foundation plans. Roof framing plans shall show sufficient details to clearly indicate the type of framing system used, size and spacing of members and their elevations. The location of all columns or pilasters shall be shown, and all building structural members shall be at least outlined. The sizes, locations and elevations of footings shall be shown. Slab plans shall be coordinated with the Architectural sheets and shall indicate the locations of structural walls and masonry partitions, recessed slabs and contraction or construction joints. Concrete slab-on-grade thicknesses and sections shall be shown. Proposed treatment of unique or complex features and details shall be shown on the drawings. Elevation views, sections and details necessary to illustrate the design at a 60% level of completion shall be provided. Drawings shall also include overall building plan dimensions, north arrows, and design notes. Drawings shall be at done at a scale appropriate for the design, in no case however, shall plan type drawings be done at a scale smaller than 1/4"=1'-0" or detail type drawings at a scale smaller than 3/4"=1"-0".

1.7.2 SPECIFICATIONS

For this 60% design submittal the Contractor shall provide a listing by title and number of all Technical Specifications proposed for use in the final structural design.

1.7.3 DESIGN ANALYSIS NARRATIVE

Design analysis shall follow the format described in Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES and the specific content shall be as outlined below.

1.7.3.1 Design Criteria and References

A list of design criteria references, such as Department of the Air Force Technical Manuals, ACI Standards, AISC Specifications, etc., and any other references which were used in the design of the project shall be included in the narrative.

1.7.3.2 Design Loads and Conditions

A list of structural design loads and conditions shall be provided, including:

- Snow load parameters;
- Wind load parameters
- Seismic design parameters;
- Roof live loads;
- Floor live loads, identifying each loading with usage and the room or space where used;
- Foundation design criteria, including the design depth for footings, allowable soil bearing pressure, equivalent fluid densities (or lateral earth pressure coefficients) for the design of earth retaining structures and building components, modulus of subgrade reaction, and any other pertinent data derived from the recommendations of the Final Foundation Analysis report (See Attachment #1 included as an appendix to this solicitation), a copy of which shall be included as an Appendix to the design analysis.

1.7.3.3 Structural Materials

A list of structural materials shall be provided, together with the stress grades and/or ASTM designations, as applicable, for structural steel, concrete, and reinforcing steel; the series for steel joists; and identification of the proposed use of each material in the structure.

1.7.3.4 Availability of Precast Concrete Units

Where precast concrete units of particular cross section(s) and concrete strength are a part of the structural design, verification of their availability from precast producers in the project vicinity shall be documented. Acceptable documentation consists of letters from the producers or a written statement by the Contractor identifying the name and address of the precaster(s), description of units and concrete strength(s) available, date when availability was verified, and name of Contractor's staff member who obtained the verification.

1.7.3.5 Description of the Structural System

A concise description of the proposed structural system for the building, together with the reasons for its selection, shall be provided. All principal elements of the structural system selected shall be described. Typically, these shall include:

- Primary supporting members for the roof;

- Masonry walls, type of material, and whether load bearing

or non-load bearing, with location of load-bearing walls defined, and

measures taken to compensate for expansion/contraction and crack

control in masonry walls;

- The proposed system for resisting lateral forces (wind and

earthquake) and transferring them to the ground, whether diaphragms,

chord bracing, shear walls, braced or moment resisting frame, etc;

- Foundations, description of special designs to accommodate existing

site conditions;

- Concrete slab-on-grade floors, description of floor surface finish treatment, accommodation of live loads, and the use, location and types of crack control joints;

- The proposed treatment of any unusual structural loadings, features or unique solutions to structural problems.

- Identification of any major vibrating elements and measures taken to isolate them.

1.7.4 DESIGN ANALYSIS CALCULATIONS

The extent of the structural calculations shall be indicative of a design which has reached a 60% level of completion. Computations shall include snow, wind, seismic, dead and live loads. Computations shall show sizing and spacing of structural members for roof framing, sidewalls and foundation sizes, as appropriate to the systems to be used for these elements.

1.8 MECHANICAL

Compliance with the design requirements for the building mechanical systems will be determined by a review of the submitted 60 percent drawings, design analysis, and specifications. Any conflicts in the design requirements or lack of thorough understanding of the nature and scope of work shall be identified and resolved prior to submittal of the 60 percent design.

1.8.1 DESIGN DRAWINGS

The 60 percent design drawings shall be fully coordinated with the design analysis. Sufficient plans, piping diagrams, sections, flow diagrams, details, schedules, and control diagrams/sequences shall be provided as necessary to define the required design intent. Floor plans shall use the architectural floor plans as a basis, with the building outline half-toned. Unless otherwise indicated, all floor plans shall be drawn at 1/8" = 1'-0" scale and show all room names and numbers. An exception to this are administrative areas being air-conditioned shall be 1/4" = 1'-0" scale and mechanical room plans shall be 1/2" = 1'-0" scale. Sheet reference number sequencing shall be in accordance with the Omaha District CADD Standards Manual. Submittal drawings shall include, but not limited to, the following:

1.8.1.1 Mechanical Index Sheet

An index sheet identifying all mechanical drawings shall be provided, including those drawings anticipated to be provided in the 100 percent design submittal. Index shall include drawing design file numbers, drawing numbers, sheet numbers, and drawing descriptions.

1.8.1.2 Mechanical Abbreviation, Legend, and General Notes Sheet

This sheet shall include all mechanical abbreviations and symbols that will be used on the drawings. Symbols shall be grouped into sections; as a minimum, provide sections for Plumbing, Heating, Miscellaneous Piping,

Valves and Fittings, and ventilation.

1.8.1.3 Exterior Utility Drawings

The following exterior utility drawings shall be provided:

a. Removal Plan

All existing exterior mechanical utilities and utilities which are to be removed shall be indicated on the Site Removal Plan located in the civil section of the drawing package.

b. Utility Plan:

All existing and new mechanical utilities shall be indicated on the Site Composite Utilities Plan located in the civil section of the drawing package. The location of existing exterior utilities shall be thoroughly checked and indicated on plans and profiles, thus preventing interference with new services. The utility drawing shall indicate all new utilities, including tie-in points, and existing utilities which are to be abandoned.

1.8.1.4 Plumbing Drawings

The following plumbing drawings shall be provided:

a. Plumbing Plans

Plumbing plans showing the design and tentative layout of the domestic hot and cold water distribution systems; make-up water piping; soil, waste and vent piping; and storm water drainage system shall be provided. Plans shall show all anticipated routing of piping systems from the connections within the structure to a point 5 feet outside the structure. The grade of all drain lines shall be calculated and invert elevations established. All electrical panels/equipment and pertinent HVAC equipment (expansion tanks, boilers, AHU's, pumps, lawn sprinkler system, etc.) shall be outlined in half-tone on the plumbing plans. Plans may combine building areas and be drawn at 1/8" = 1'-0" scale as long as legibility is not compromised. Plumbing fixtures and drains shown on the drawings shall be designated by the same identification system used in the Technical Specification and Plumbing Fixture Schedule.

b. Enlarged Mechanical Room Plumbing Plan

An enlarged mechanical room plumbing plan drawn at a minimum 1/4" = 1'-0" scale shall be provided. Plan shall show layout of all plumbing equipment and piping within the rooms. In addition to all the plumbing systems required, the plan shall show half-toned outlines of all HVAC equipment located in the room, gas service, lawn sprinkler apparatus, the fire protection entrance and risers, and the outline of any electrical panels or equipment located in the room.

c. Plumbing Detail and Schedule Sheet

The following details shall be provided: water heaters, and water service entrance. The provided plumbing fixture schedule and a contractor generated water heater schedule shall be provided.

1.8.1.5 Mechanical HVAC Drawings

Show on mechanical HVAC drawings, all items of mechanical equipment, including boiler room equipment, HVAC equipment layout, air handling units, air distribution and exhaust systems, etc., to determine proper space allocation within the intent of the architectural layout requirements. Plans, elevations, and sections shall be developed sufficiently to insure that major equipment items, piping, and ductwork cause no interference with structural members, electrical equipment, etc. The following HVAC drawings shall be provided:

a. Mechanical HVAC Plans

Mechanical HVAC plans showing the design and tentative layout of the hot water piping distribution system and equipment, the air supply and distribution systems, and the ventilation and exhaust systems shall be provided. Air supply and distribution systems shall show all ductwork, including supply and return ductwork, ductwork to diffusers, and all diffusers. For the 60 percent submittal, all ductwork may be shown as single-lined. The final design submittal shall show all ductwork as double-lined. All electrical panels/equipment and pertinent plumbing equipment shall be outlined in half-tone on the HVAC plans.

b. Enlarged Mechanical Room HVAC Plans

Enlarged mechanical room HVAC plans showing all mechanical systems and drawn at a minimum 1/2" = 1'-0" scale shall be provided. Plans shall show layout of all equipment, piping, and ducts located within the rooms. Equipment shall include (but not limited to) air handling units with associated outside air intakes, relief air, and supply/return ducts; exhaust/supply fans, mechanical room ventilation intake/relief openings, gas service entrance, combustion air opening, unit heaters, Hot Water pumps, boilers, expansion tanks, and temperature control panels. Plans shall show dedicated access space for items requiring maintenance. In addition to all the mechanical HVAC systems required, the plan shall show half-toned outlines of all major plumbing equipment, the water service entrance, fire protection entrance and riser, lawn sprinkler apparatus, and any electrical equipment or panels located in the room.

c. Mechanical Room Sections:

For each air handling unit within the mechanical room, a mechanical room section view shall be provided showing, but not limited to, all AHU components, ductwork connections/routing, and relationship to adjacent structural features.

d. Not Used:

e. Mechanical Detail Sheets:

Installation details showing all specification requirements such as isolation and balancing valves, thermometers, pressure gauges, equipment pads, strainers, vents, hangers, vibration isolation, etc. shall be provided for each item of mechanical equipment. As a minimum, the following mechanical details shall be provided to the extent they are included in the design:

Refrigerant Piping Diagram

Hot Water Boiler and Piping Diagram

Hot Water Pumps
Expansion Tanks
Horizontal Unit Heater
Vertical Unit Heater
Chemical Shot Feeders
Gas Service Entrance

Cabinet Unit Heater
Roof Top Air Handling Units
Wall Propeller Supply/Exhaust Fan
In-line Supply/Exhaust Fan
Relief Hood
Relief Vent
Exhaust Hoods
Seismic Requirements for Floor-
Mounted and Suspended Equipment

f. Mechanical Schedule Sheets

Schedules, with preliminary capacities, shall be provided for each item of mechanical equipment. Furnished typical equipment schedules shall be used whenever possible and shall be revised and completed as necessary to suit the project requirements. In addition to the furnished schedules, damper and control valve schedules shall also be provided.

1.8.1.6 HVAC Control Drawings

Simplified, one-line type control schematics showing all control system interface points and detailed sequence of operation shall be provided for all mechanical equipment and systems. Sequence of operation for each item of equipment and system shall be sub-sectioned into paragraphs describing discreet operational requirements. The following drawings shall be provided:

HVAC Controls Legend:

This sheet shall include all control abbreviations and symbols that will be used on the drawings. Furnished Controls Legend sheet shall be used as a basis for all abbreviations and symbols used on the Final Control Drawings.

a. Misc. Systems

These sheets shall include all miscellaneous equipment items such as supply/exhaust fans, unit heaters, radiant floor, infra-red heaters, controls air compressor, etc. that are not interlocked to the main Hot Water or air handling unit systems. Provide control schematic and sequence of control for each item of equipment on the same sheet.

b. Hot Water System

Provide a boiler and pumping system control schematic and sequence of operation.

c. Radiant Floor Water System

Provide a manifold and zone pumping system control schematic and sequence

of operation.

d. Air Conditioning System:

Provide a condensing unit, evaporator and chilled water pumping system control schematic and sequence of operation.

e. Air Handling Systems

For each air handling system, including outside air makeup system, provide a control schematic and a sequence of operation. Include all items of equipment that are interlocked to each system.

f. Control Points Lists

Provide Local Control Panel control points lists for all items of equipment and systems, identifying all anticipated temperature control system input/output points. The format for defining the input/output points shall be as identified on the furnished Example Control Point List sheets.

1.8.2 TECHNICAL SPECIFICATIONS

The following UFGS guide specifications shall be edited and coordinated with the drawings and design analysis to identify the proposed product and installation requirements for the facility:

02556A Gas Distribution System

13080 Seismic Protection for Miscellaneous Equipment
15070A Seismic Protection for Mechanical Equipment
15080A Thermal Insulation for Mechanical Systems

15182A Refrigerant Piping
15190A Gas Piping Systems
15400A Plumbing, General Purpose

15569A Water and Steam Heating; Oil, Gas or Both; up to 20 MBTUH
15700A UNITARY HEATING AND COOLING EQUIPMENT
15702A Computer Room Air Conditioning Units

15895 Air-Supply, Distribution, Ventilation, and Exhaust Systems
15951A Direct Digital Control for HVAC
15990A Testing, Adjusting and Balancing of HVAC Systems
15995A Commissioning of HVAC Systems

Proposed HVAC and Temperature Control System Performance Test and Functional Performance Checklists shall be included in the appropriate specifications.

1.8.3 DESIGN ANALYSIS NARRATIVE

The narrative portion of the design analysis shall contain a narrative description and analysis for each of the mechanical portions of the design. The basis and reasons for specific engineering decisions, special features, unusual requirements, etc., shall be explained or summarized as applicable. If it is necessary to deviate from criteria or standard practice, reasons shall also be included. Design statements shall be provided in sufficient detail to enable the reviewer to get a clear picture and understanding of all included work so that approval will be granted.

Narrative shall be complete relative to scope and intended design approaches. The total scope projected to final design shall be outlined in a form that will be conveniently adapted, expanded, and detailed at the final design stage. If alternatives were to be evaluated and selected by the designer, findings (pros and cons) and conclusions shall be included. The design analysis shall carry a complete narrative for every item and system covered in the design, and shall include, but not be limited to, the following:

1.8.3.1 Index

Provide a design analysis index identifying all main and sub-paragraph headings.

1.8.3.2 Project Summary

Provide a brief description of the mechanical design objectives.

1.8.3.3 Applicable Criteria

A list of all applicable criteria used for basis of design.

1.8.3.4 Technical Specifications

A list of Technical Guide Specifications that will be used for the project.

1.8.3.5 Design Conditions

A list of Mechanical HVAC design conditions including elevation, latitude, heating/cooling degree days, winter and summer outside design temperatures, inside design temperatures for all spaces, ventilation rates, etc. shall be provided.

1.8.3.6 System Descriptions

Provide a complete description of all building systems; include the designer's reasons for selecting specific materials, systems, etc. in which the reason for selection is not obvious. System descriptions shall be include, but not limited to, the following:

Plumbing System
Exterior Gas Distribution System
Interior Gas Piping System
Hot Water Heating System
Radiant Floor System
Exhaust Hoods
Air Supply and Distribution Systems
Ventilation and Exhaust Systems
Temperature Control System
Seismic Protection

Refrigeration System
Infra-red system

1.8.4 DESIGN ANALYSIS CALCULATIONS

The Design Analysis calculations shall provide an estimate of the heating, cooling, and ventilation loads to determine a preliminary selection of the type and size of mechanical equipment to be used. Design calculations

shall be provided in sufficient detail to enable the reviewer to get a clear understanding of all work to allow approval. Backup data shall be furnished to support basic design decisions related to sizing of major equipment and materials, performance of specific systems or equipment. Manufacturer's catalog data sheets shall be provided for each item of equipment selected. Calculations may be performed by manual or computerized procedures. Use of standardized charts, curves, tables, graphs will generally be acceptable for portions of required calculations lieu of specific calculation procedures. Such data must be from a recognized source which is identified in the design analysis and shall be included with the calculations. Design calculations and computations shall be provided for all systems and shall include, but not limited to, the following:

1.8.4.1 Index

Provide a design analysis index identifying all calculation items.

1.8.4.2 Design Conditions

A list of Mechanical HVAC design conditions including elevation, latitude, heating/cooling degree days, winter and summer outside design temperatures, inside design temperatures for all spaces, ventilation rates, etc. shall be provided.

1.8.4.3 Zone Air-Conditioning Loads

Preliminary cooling calculations shall be prepared using the Cooling Load Temperature Differential/Cooling Load Factors (CLTD/CLF) Method as described in the ASHRAE Handbook Fundamentals.

1.8.4.4 Block Air-Conditioning Loads

Preliminary block cooling load calculations, compassing the air-conditioned areas, shall be prepared using the CLTD/DLF Method .

1.8.4.5 Heating Loads

For each area or room requiring heat; provide calculations.

1.8.4.6 Heating Load Summary

A tabular summary of all heating load calculations for each area or room, including combustion air heating, shall be provided.

1.8.4.7 Boiler Selection

Include boiler capacity adjustments for altitude, inefficiency, and net rating. Provide catalog data indicating input capacity, net output capacity, dimensions, and water and flue size connections.

1.8.4.8 Hot Water Pump Selection

Include pump flow calculations and catalog selection data indicating dimensions, connection sizes, rpm, horsepower, and efficiency.

1.8.4.9 Combustion-Air Requirements

Include combustion air quantity and free area calculations, louver

selection, combustion air heating requirements, and selection of heating equipment.

1.8.4.10 Unit Heater Selections

For each area requiring a unit heater, provide data on capacity, weight, and horsepower.

1.8.4.11 Mechanical Ventilation

For each area or room requiring mechanical ventilation for cooling; provide calculations similar to zone air-conditioning, louver selection, and catalog fan data.

1.8.4.12 Toilets/Janitor Room Ventilation

Provide calculations, catalog fan data, and louver selections, for each toilet area.

1.8.4.13 Air Handling Units

A tabular summary of all airflow calculations for each area or room shall be provided on each air distribution system for fan sizing. summary

1.8.4.14 Domestic Water Demand

Calculations for determining the size of the domestic cold water supply line to the building shall be provided.

1.8.4.15 Domestic Hot Water Demand

The design guidance provided for service water heating in ASHRAE Handbook HVAC Systems and Applications shall be followed to determine the domestic hot water demand for the facility. Provide catalog data for the domestic water heaters.

1.8.4.16 Electrical Load Summary

A summary of all mechanical equipment and the associated electrical load requirements shall be provided.

1.8.5 ENERGY CONSERVATION

Mechanical designs shall be economical, maintainable and energy conservative with full consideration given to the functional requirements and planned life of the facility. Emphasis shall be given to heat reclamation, outside air usage and other energy conservation measures for mechanical systems. Each major item of proposed mechanical equipment shall have a net efficiency rating that is equal to or exceeds the net efficiency ratings of similar or equal equipment of the four manufacturers each having one of the four highest ratings.

1.8.6 AIR POLLUTION CONTROL

Air pollution control shall be incorporated in all designs. The Architect-Engineer shall investigate the latest Using Service, Local, State, and Federal regulations and standards, analyze and report on requirements in the design analysis, and include in the design as applicable. The most stringent of all regulations and standards shall be

implemented into the design. If in doubt as to requirements, contact this office for assistance.

1.9 ELECTRICAL

1.9.1 Drawings

Drawing scale shall match architectural drawing requirements. Drawings shall show the following:

1.9.1.1 Lighting Layout and List of Fixtures

Complete lighting layout of all areas shall be provided. The type of fixture shall be indicated on the drawing. Complete list of fixtures proposed with type of lamp and wattage.

1.9.1.2 Receptacle Layout

Complete receptacle layout should be provided for all areas to indicate project requirements.

1.9.1.3 Power Equipment and Layout

Power equipment and layout such as switchgear, panelboards, large motor driven items, etc.

1.9.1.4 Power One Line Diagram

Power one line diagram shall be shown to indicate arrangement of the system.

1.9.1.5 Communications

Communications (telephone, public address) shall be shown sufficiently to indicate the designers understanding of the Section 01007 ELECTRICAL REQUIREMENTS.

1.9.1.6 Fire Detection

Fire Detection drawings shall be provided and inserted in the Fire Protection/Fire Suppression F-Series of drawings.

1.9.1.7 Miscellaneous Details of Special Equipment

Miscellaneous details of special equipment to indicate understanding of 01007 ELECTRICAL REQUIREMENTS.

1.9.2 Specifications

Submit prescriptive specification sections to specify the quality, characteristics, installation procedures and testing requirements for all items of the proposed electrical design.

Specifications shall be provided (to approximately 60 percent completion). See Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES for additional requirements.

1.9.3 Design Analysis Narrative

The design analysis shall contain a description and analysis of the

electrical portions of the design. Special features, unusual requirements, etc., should be noted. Narrative must address all technical requirements identified in Section 01007 ELECTRICAL REQUIREMENTS.

1.9.4 Design Analysis Calculations

Backup data shall be furnished to support basic design decisions related to sizing of major equipment and materials. As a minimum the following shall be submitted.

1.9.4.1 Service

Sizing of building services EMD (Estimated Maximum Demand) for all the building loads.

1.9.4.2 Transformers

Sizing of general purpose dry type transformers.

1.9.4.3 Feeders

Sizing of main feeders.

1.9.4.4 Panelboards

Sizing of panelboards and distribution equipment.

1.9.4.5 Illumination Calculations

Data should identify target and calculated illumination levels for all typical rooms. Calculations should be adjusted to compensate for special applications such as irregularly shaped rooms, open sides, ceiling obstructions (beams, ductwork), corridors, etc. If the lumen method is used for corridor calculations, the calculations should be performed using a module in which the length doesn't exceed 3 times the width (2:1 ratio preferred).

1.9.4.6 Short Circuit Evaluation

The maximum possible fault current at the building service should be calculated.

1.10 FIRE PROTECTION

1.10.1 DRAWINGS

Features of Fire Protection, their ratings, and the hazards requiring them, shall be clearly indicated. Sprinkler and fire alarm/detection areas shall also be clearly indicated. Fire detection and sprinkler systems shall be laid out and detailed sufficiently to indicate the designers understanding of the Section 01008 FIRE PROTECTION REQUIREMENTS. When other functions co-exist with the fire protection functions, their integration shall be clearly indicated, with an analysis that describes how both functions will be served. Provide a separate, composite type floor plan which makes an accurate presentation of these various features and functions. As part of the submittal, provide a set of plans that shows emergency egress for the facility.

1.10.2 DESIGN ANALYSIS

The design analysis shall include a separate fire protection report containing, but not limited to, review statements and/or comments on the following items, where applicable.

a. Location and rating of fire walls and fire partitions.

b. Column, floor, and roof protection.

c. Path of travel for emergency egress and operation of panic exits.

d. Access to building for fire fighting.

e. Design and placement of fire and smoke stop doors.

f. Labeled windows, where required.

g. Venting of smoke.

h. Placement of hand fire extinguisher cabinets.

i. Type and adequacy of sprinkler system.

j. Building exterior fire protection facilities and building clearances.

k. Type of occupancy.

l. Zoning of fixed fire protection systems.

m. Type and adequacy of fire alarm and detection systems.

n. Zoning of fire alarm and detection systems.

o. Number of zones of alarm and detection systems that are separately transmitted to the base or installation fire department.

1.10.3 TECHNICAL GUIDE SPECIFICATIONS

None of the government provided guide specifications are required to be submitted at this design stage. However; any Contractor generated specifications required to meet the project specifics, or individual specification items added to the provided guide specifications shall be submitted for review. Note that guide specifications 13930A WET PIPE SPRINKLER SYSTEMS, FIRE PROTECTION and 13851A FIRE DETECTION AND ALARM SYSTEM, ADDRESSABLE are a part of this contract. As such they may be edited only for those portions that do not apply to this project. For the items that do apply, no changes may be made.

1.11 ENVIRONMENTAL PROTECTION, COMPLIANCE, AND PERMITS

1.11.1 General Requirements

Specification Section 01355, ENVIRONMENTAL PROTECTION, furnished with Division 1 of this RFP, contains requirements presently known to be required for environmental protection, compliance, and permits on this project. It is the Contractor's responsibility to provide any additional requirements to ensure that the project is in full environmental compliance with Federal, State, and local laws and regulations. The Contractor shall

include any additional requirements in the 60% Environmental Protection, Compliance, and Permits Design Analysis Chapter and the Environmental Protection Plan for the project.

1.11.2 Design Analysis Chapter

The Contractor shall prepare a chapter in the Design Analysis entitled: "ENVIRONMENTAL PROTECTION, COMPLIANCE, AND PERMITS". This chapter shall include a summary of environmental coordination, compliance, approvals, permits, and etc. required for the project. The Contractor shall include documentation of the persons contacted along with phone numbers, summary of coordination, discussions, phone conversation records, and/or letters required to assure that the project is in full compliance with all Federal, State, and local environmental laws and regulations. A list of environmental permits, approvals, notifications, etc. that are required for the project shall be included.

1.11.3 Draft Environmental Protection Plan

The Contractor shall prepare and submit a Draft Environmental Protection Plan in accordance with the requirements of Section 01355 ENVIRONMENTAL PROTECTION. If additional environmental compliance plans are identified during the design, the Contractor shall include the additional plans.

1.11.4 Appendix to the Environmental Protection Plan

As an Appendix to the Draft Environmental Protection Plan, the Contractor shall submit copies of the permit applications and associated documents, notices, reviews, and/or approvals that are required for the project. If at 60% Design any permits or approvals have been received, copies of the permits and/or approvals shall be included.

1.12 HEALTH AND SAFETY AND SPECIAL DISPOSAL REQUIREMENTS

1.12.1 Design Analysis Narrative

The design analysis shall contain a description and analysis of the Health and Safety portions of the design. Special features, unusual requirements, etc., should be noted. Narrative must address all technical requirements identified in Section 01009 HEALTH AND SAFETY AND SPECIAL DISPOSAL REQUIREMENTS.

1.12.2 Reports

As an Appendix to the Design Analysis, the 60% submittal shall include a lead-based paint survey report, an asbestos survey report, and a report discussing results of the walk-through survey for building components that may contain PCBs or mercury.

PART 2 NOT USED

PART 3 NOT USED

-- End of Section --

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PART 3 - CODE ANALYSIS
INTERNATIONAL BUILDING CODE (IBC) AND NFPA "LIFE SAFETY CODE" ANALYSIS

LIFE SAFETY AND FIRE PROTECTION IS AN INTEGRAL PART OF EVERY FACILITY DESIGN. RECOGNIZED CODES AND ACCEPTED SAFETY STANDARDS SHALL BE FOLLOWED IN THE DESIGN OF ALL FACILITIES. OF THE VARIOUS CODES AND SAFETY STANDARDS THE NATIONAL FIRE PROTECTION ASSOC. (NFPA) "LIFE SAFETY CODE" SHALL TAKE PRECEDENCE. ALL APPLICABLE REQUIREMENTS OF THE LIFE SAFETY CODE SHALL BE INCORPORATED INTO EACH DESIGN. FOR TYPE OF CONSTRUCTION, FIRE AREA LIMITATIONS, AND ALLOWABLE BUILDING HEIGHTS THE DESIGN SHALL FOLLOW THE INTERNATIONAL BUILDING CODE (IBC).

CHECK LIST

PROJECT NAME _____ DATE_____
LOCATION _____
_____

4. **INTERNATIONAL BUILDING CODE ANALYSIS**

4.1 OCCUPANCY CLASSIFICATION (SEE CHAPTER 3):

Area: Classification:
(GROUP: _____): Div. _____
(GROUP: _____): Div. _____
(GROUP: _____): Div. _____

PRINCIPAL OCCUPANCY _____

OTHERS (SPECIFY) _____
_____
_____
_____

4.2 TYPE OF CONSTRUCTION : _____

TABLE 302.1.1 INCIDENTAL USE AREAS SEPARATION TABLE

4.3. OCCUPANCY SEPARATION REQUIRED (SEE TABLE 302.3.3):

_____ TO _____ = _____ HRS
_____ TO _____ = _____ HRS
_____ TO _____ = _____ HRS
_____ TO _____ = _____ HRS
_____ TO _____ = _____ HRS

4.4 FIRE RESISTANCE OF EXTERIOR WALLS: (SEE TABLE 601)

NORTH _____
SOUTH _____
EAST _____
WEST _____
OTHER _____

PART 3 - CODE ANALYSIS

INTERNATIONAL BUILDING CODE (IBC) AND NFPA "LIFE SAFETY CODE" ANALYSIS

4. **INTERNATIONAL BUILDING CODE ANALYSIS**

4.5 OPENINGS IN EXTERIOR WALLS: (SEE TABLE 704.8)

NORTH _____
SOUTH _____
EAST _____
WEST _____
OTHER _____

4.6 MAX. ALLOWABLE FLOOR AREA (SEE TABLE 503):

ALLOWABLE:

IF SPRINKLERED: _____

ALLOW. AREA INCREASES _____
_____
_____
_____
_____

CALCULATED ACTUAL FLOOR AREA:

Floor	Square Footage
Totals:	

4.7 MAX. ALLOWABLE HEIGHT (SEE TABLE 503):

FEET: _____
STORIES: _____

Proposed Height of Building:

Actual No. of Stories:

4.8 COMMENTS:
_____
_____
_____
_____
_____

DESIGNER:_____

PART 3 - CODE ANALYSIS

INTERNATIONAL BUILDING CODE (IBC) AND NFPA "LIFE SAFETY CODE" ANALYSIS

5. **NFPA 101 "LIFE SAFETY CODE"**

5.1 CLASSIFICATION OF OCCUPANCY: _____
_____

HAZARD OF CONTENTS:
LOW _____
_____
_____

ORDINARY _____
_____
_____

HIGH _____
_____
_____

5.2. FIRE RESISTIVE REQUIREMENTS:

EXTERIOR WALLS: _____ HRS ____

INTERIOR WALLS: _____ HRS ____

STRUCTURAL FRAME: _____ HRS ____

VERTICAL OPENINGS: _____ HRS ____

FLOORS: _____ HRS ____

ROOFS: _____ HRS ____

EXTERIOR DOORS: _____ HRS ____

EXTERIOR WINDOWS: _____ HRS ____

BOILER ROOM ENCLOSURE _____ HRS ____

OTHER (LIST) _____ HRS ____
_____ HRS ____
_____ HRS ____
_____ HRS ____

PART 3 - CODE ANALYSIS

INTERNATIONAL BUILDING CODE (IBC) AND NFPA "LIFE SAFETY CODE" ANALYSIS

5. **NFPA 101 "LIFE SAFETY CODE"**

5.3 MEANS OF EGRESS:

OCCUPANCY LOAD FACTOR: _____

OCCUPANCY	FACTOR	ACTUAL AREA	ACTUAL LOAD

5.4 NUMBER OF EXITS REQUIRED: _____

_____
_____
_____
_____

5.5 MINIMUM WIDTH OF EXITS:
CALCULATED: _____
_____
_____
ACTUAL: _____
_____

5.6 MAXIMUM ALLOWABLE TRAVEL DISTANCE TO EXIT:_____
_____
WITH SPRINKLERS: _____
_____

5.7 EXIT DOORS:
MINIMUM WIDTH ALLOWED:_____
MAXIMUM LEAF WIDTH ALLOWED: _____
WIDTH REQUIRED FOR NO.OF OCCUPANTS: _____
_____

PART 3 - CODE ANALYSIS

INTERNATIONAL BUILDING CODE (IBC) AND NFPA "LIFE SAFETY CODE" ANALYSIS

5. **NFPA 101 "LIFE SAFETY CODE"**

5.8 EXIT CORRIDORS:

MAX. COMMON PATH OF TRAVEL: _____

MINIMUM ALLOWABLE WIDTH: _____

REQUIRED TO HAVE EXIT AT EACH END OF CORRIDOR? ___

_____

DEAD END CORRIDORS ALLOWED? _____

MAXIMUM LENGTH: _____

WALL FIRE RESISTANCE REQUIRED: _____

_____

_____

DOORS & FRAME FIRE RESISTANCE REQUIRED: _____

_____

_____

5.9 STAIRS:

MINIMUM WIDTH _____ FOR OCCUP. LOAD OF _____

MINIMUM WIDTH _____ FOR OCCUP. LOAD OF _____

MINIMUM WIDTH _____ FOR OCCUP. LOAD OF _____

MINIMUM WIDTH _____ FOR OCCUP. LOAD OF _____

MAX. RISER ALLOWED: _____

MINIMUM TREAD ALLOWED: _____

LANDINGS:

MIN. SIZE: _____

MAX. VERTICAL DIST. BETWEEN LANDINGS: _____

_____

_____

REQUIRED HEIGHT OF RAILINGS: _____

_____

HANDRAILS:

REQUIRED AT EACH SIDE? _____

INTERMEDIATE RAIL REQUIRED? _____

HEIGHT ABOVE NOSING _____

INTERMEDIATE RAIL REQUIRED? _____

MAX. SPACE ALLOWED BETWEEN RAILS: _____

_____

STAIR ENCLOSURE REQUIRED? _____

STAIR TO ROOF REQUIRED? _____

STAIR TO BASEMENT REQUIRED? _____

5.10 HATCHWAY ACCESS TO ROOF REQUIRED? _____

PART 3 - CODE ANALYSIS

INTERNATIONAL BUILDING CODE (IBC) AND NFPA "LIFE SAFETY CODE" ANALYSIS

5. **NFPA 101 "LIFE SAFETY CODE"**

5.11 LADDER ACCESS TO ROOF REQUIRED? _____

5.12 HORIZONTAL EXIT REQUIREMENTS: _____
_____
_____

5.13 PROTECTION OF OPENINGS NEAR EXTERIOR STAIR EXIT DOORS:
_____
_____

5.14 SMOKEPROOF ENCLOSURE REQUIRED: _____
_____

5.15 RAMPS:
MAX. SLOPE TO USE AS EXIT _____
HANDRAILS REQUIRED? _____

5.16 COMMENTS:
_____
_____
_____
_____
_____
_____

DESIGNER: _____

ADA ARCHITECTURAL DESIGN CHECKLIST

Project Name:_____
Project Location:_____
Design Phase:_____

ITEM NO.	ITEM DESCRIPTION	INCORP. LATER	INCORP	N/A
1	**ESTABLISHED WITH THE BASE/OWNER OF THE FACILITY THE FOR HANDICAP ACCESSIBILITY.**			
2	**RECEIVED A WAIVER FOR NO HANDICAP ACCESSIBILITY REQUIREMENTS ON THE FACILITY**			
3	**FACILITY IS DESIGNED UTILIZING:**			
	A. New Construction Criteria			
	B. Building Alteration Criteria			
	C. Historic Building Preservation Criteria			
4	**ACCESSIBLE ROUTE (EGRESS/CORRIDORS/HALLS/AISLES).**			
	A. - Provided minimum fire egress routes.			
	B. - Provided proper clearance widths.			
	C. - Provided proper floor level changes.			
	D. - Provided proper floor materials.			
	E. - Provided protection from protruding objects			
5	**RAMPS**			
	A. - Maximum slopes less than 1:12			
	B. - Maximum run less than 30 feet (9144mm) for 1:12 slopes 40 feet (12,192mm) for 1:16 slopes			
	C. - Minimum clear width exceeds 36 inches (914mm).			
	D. - Provided proper edge protection.			
	E. - Provided handrails of proper configuration and diameter.			
	F. - Provided proper handrail extensions at top and bottom of ramp.			
	G. - Provided handrails at proper mounting heights.			
	H. - Provided proper landings.			
	I. - Provided proper cross slope on ramp surface.			

ITEM NO.	ITEM DESCRIPTION	INCORP. LATER	INCORP	N/A
6	**STAIRS**			
	A. - Protected the space below stairs from access by the blind. B. - Provided handrails of proper configuration and diameter.			
	C. - Provided proper handrail extensions at top and bottom of stairs.			
	D. - Provided handrails at proper mounting heights.			
	E. - Provided treads greater than 11 inches (279mm) in width.			
	F. - Provided proper nosings.			
7	**ELEVATORS**			
	A. - Provided buttons and lanterns at the proper mounting height.			
	B. - Provided Braille characters.			
	C. - Provided proper door widths.			
	D. - Provided proper clearance inside elevator car.			
8	**DOORS AND HARDWARE**			
	A. - Provided proper door widths.			
	B. - Provided proper clearance on both sides of jambs.			
	C. - Entrance vestibules provided with adequate clearances.			
	D. - Provided levers on locksets and exit hardware.			
	E. - Provided closers with mechanical adjustments.			
	F. - Provided accessible thresholds.			
	G. - Provided protection plates on doors heavily used by wheel chair bound people.			
9	**TOILET FACILITIES**			
	A. - Provided proper floor clearance through out the toilet rooms.			
	B. - Provided minimum number of required accessible fixtures.			
	C. - Provided accessible toilet stalls.			
	D. - Provided stall doors with correct direction of swing.			
	E. - Provided accessible water closets.			
	F. - Provided grab bars at accessible water closets.			

ITEM NO.	ITEM DESCRIPTION	INCORP. LATER	INCORP	N/A
	G. - Provided grab bars with correct configuration and dimension.			
	H. - Provided accessible sinks/lavatories.			
	I. - Provided accessible urinals.			
	J. - Provided accessible water coolers and fountains.			
	K. - Provided accessible mirrors.			
	L. - Provided accessible toilet accessories at required locations.			
	M. - Provided all fixtures and accessories at proper mounting heights and clearances.			
	N. - Provided insulated or protected exposed pipes at lavatories.			
10	**SHOWER/TUB FACILITIES**			
	A. - Provided the minimum number of accessible showers/tubs.			
	B. - Provided showers/tubs with grab bars.			
	C. - Provided showers/tubs with seats as required.			
	D. - Provided controls mounted at the proper height and location.			
	E. - Provided proper clearances and dimensions in showers/tubs.			
	F. - Provided proper floor clearance through out shower/tubs rooms.			
	G. - Provided doors with correct direction of swing and clearance.			
11	**STORAGE**			
	A. - Provided accessible cabinets, shelves, closets, and drawers as required.			
	B. - Provided proper clearance, mounting heights, and reach provisions.			
12	**TELEPHONES AND VENDING**			
	A. - Provided the minimum number of required accessible public telephones.			
	B. - Provided proper floor clearance around telephone.			
	C. - Phone and controls mounted at proper heights and within reach.			

ITEM NO.	ITEM DESCRIPTION	INCORP. LATER	INCORP	N/A
	D. - Provided vending machines on an accessible route.			
	E. - Provided vending machines with accessible clearances and protruding object safe guards.			
13	**FIXED OR BUILT-IN SEATING AND TABLES**			
	A. - Provided the minimum number of accommodations for accessibility in areas, which required fixed furniture.			
	B. - Provided proper floor clearance around furniture.			
	C. - Provide proper knee space at tables.			
	D. - Provided tables and counters with proper top surface heights.			
14	**ASSEMBLY AREAS**			
	A. - Provided the minimum number of accessible seating spaces.			
	B. - Provided seating, which is easily accessible to emergency egress.			
	C. - Provided companion seating.			
	D. - Integrated and dispersed accessible seating with the rest of the seating.			
	E. - Provided accessible dressing rooms.			
	F. - Provided level floor surface at accessible seat locations.			
	G. - Provided clear ground or floor space at accessible seat locations			
	H. - Provided access to all performing areas and associated spaces.			
15	**DINING HALLS AND CAFETERIAS**			
	A. - Provided the minimum number of accessible dining spaces.			
	B. - Provided accessible counters and bars.			
	C. - Provided accessible aisles between tables or walls.			
	D. - Provided clear floor space at accessible dining locations.			
	E. - Provided accessible food service lines meeting minimum clearances and reaches.			
	F. - Provided accessible tableware and condiment areas.			
	G. - Provided raised speaker platform with protected edges.			

ITEM NO.	ITEM DESCRIPTION	INCORP. LATER	INCORP	N/A
16	**MEDICAL CARE FACILITIES**			
	A. - At least 10% of the general patient rooms are accessible.			
	B. - Provided the number of accessible patient rooms as required for specialized treatment, long term care, or alterations of existing patient rooms.			
	C. - Provided at least one accessible entrance with weather protecting canopy or roof overhang.			
	D. - Provided minimum clearances within the patient rooms and around the beds.			
	E. - Provided accessible patient toilet/bath rooms.			
17	**BUSINESS AND MERCANTILE**			
	A. - Provided at least one accessible sales counter, services counter, teller, information window, etc.			
	B. - Security bollards when provided, do not prevent access or egress to people in wheel chairs.			
18	**LIBRARIES**			
	A. - Provided access to all reading and stack areas, reference rooms, reserve areas, and special facilities or collections.			
	B. - Provided at least 5% or a minimum of one of each element or fixed seating, tables, or study carrels as accessible.			
	C. - Provided at least one lane of check out areas as accessible.			
	D. - Provided adequate clearance and reach distances at card catalogs and magazine displays.			
	E. - Provide stacks with minimum clear aisle width.			
19	**TEMPORARY LODGING**			
	A. - All common and public use areas are accessible.			
	B. - Provided accessible units, sleeping rooms, and suites.			
	C. - Provided sleeping accommodations for persons with hearing impairments.			
	D. - Provided a dispersed class and a range of room options.			
	E. - Provided accessible rooms in ADAL projects.			
	F. - Provided an accessible route to accessible sleeping rooms.			
	G. - Provided accessible clearance widths within sleeping rooms and around beds.			

ITEM NO.	ITEM DESCRIPTION	INCORP. LATER	INCORP	N/A
	H. - Provided accessible doors within accessible sleeping rooms.			
	I. - Provided accessible fixed or built-in furniture and storage units.			
	J. - Provided accessible controls throughout accessible units.			
	K. - Where provided as part of an accessible unit each of the following: living area, dining area, at least one sleeping area, patio/terrace/balcony, toilet/bath, and carport/garage/parking.			
	L. - Where provided as apart of an accessible unit, the kitchen, kitchenettes, wet bars, or similar amenities were also provided with accessible features.			
	M. - Provided visual alarms, notification devices, and accessible telephones.			
	N. - Provided accessible doors and doorways designed to allow passage into and within all sleeping units or other covered units.			
20	**TRANSPORTATION FACILITIES:** (This section covers Air, Rail, and Bus public transportation facilities. See Section 10 of the ADA Guide for specific requirements for these facilities)			

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SECTION 01338

100 PERCENT DESIGN REQUIREMENTS

PART 1 100 PERCENT DESIGN SUBMITTALS

For general submittal requirements, see Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES.

1.1 SITE PLANNING

1.1.1 Drawings

1.1.1.1 Location Plan and Vicinity Map

A vicinity map consists of a small scale drawing of the project location, similar to a road map. A Location Plan consists of a small scale drawing showing the Government property or reservation limit with the construction project site shown. The drawing shall show the facility approved Contractor access and haul routes.

1.1.1.2 Survey Plan

The information depicting existing conditions used to generate site drawings shall be shown on this drawing. An engineering survey of the site will be presented to the Contractor selected as a result of this RFP process. Any additional survey information required by the Contractor for design above that shown in the prepared engineering survey shall be procured and paid for by the Contractor.

1.1.1.3 Removal Plan

The removal plan will show the existing physical features and condition of the site before construction. This information should include the field survey to show all above and below ground utilities; buildings, drives, roads and parking areas, walks, and vegetation; and such facilities as retaining walls, underground storage tanks, foundations, etc. Each physical feature to be removed shall be as indicated on the standard legend sheet, a legend on the removal plan, and properly noted: to be removed, to remain, or to be relocated. No existing or proposed contours shall be shown on this plan.

1.1.1.4 Site Plan

The site plan shall show all the site layout information necessary to field locate the building, service drives, walks, and all other appurtenances to be constructed on the project. All site related work to be constructed will be located by dimensions. The site plan will identify all site related items such as: curbs, pavements, walks, courtyards, bollards, trash enclosures, chiller units, electrical transformers locations, etc. in accordance with a standard legend sheet or with additional legends or notes. Site plans shall be at a scale of 1" = 30'. No existing or proposed contours shall be shown on this plan. The site plan, prior to adding the dimensions, should serve as the base sheet to the other plans, such as: utilities plan, grading and drainage plans and landscape plan. The site plan shall show all existing physical features and utilities

within and adjacent to the work site that will remain after the proposed construction has been completed. Whenever the Site Plan occupies more than one sheet of drawings, a key plan shall be included. Additional plans showing specific areas of the site in smaller scales can be included if more detail is necessary.

1.1.1.5 Construction Sequencing Plan

The construction sequencing plan shall show the construction limits, temporary construction zone fence and gate locations, storage areas, staging areas, etc. The scale shall be appropriate to the information provided. Any specific construction phasing and security concerns shall be included in these plans.

1.1.1.6 Site Furnishing Details

The Contractor shall provide designs and details as necessary for site furnishings and accessories.

1.1.1.7 Landscape Plan

A detailed landscape plan showing trees, shrubs, ground cover, AT/FP boulders and bollards, seeded and sodded areas, shall be prepared by the Contractor. The landscape plan shall be prepared by a fully qualified, experienced professional Landscape Architect. The A-E (Contactor's Designer) shall specify types of plant materials that are locally grown, commercially available and acclimated to the project environment. The landscape plan shall include a plant materials schedule or listing. This schedule shall include botanical names, common names, key, size and the method of transplanting. The landscape plan shall also show all unsurfaced ground areas disturbed by construction within the project limits with these areas shown to be seeded, sodded, or mulched as required.

1.1.1.8 Landscape Details

The Contractor shall verify the methods of planting to meet the project site/installation requirements and provide the necessary Landscape Details to perform the contract design work. Details shall reflect local practices and conditions for installation. The Contractor shall provide designs and details as necessary for other required site furnishings and accessories.

1.1.1.9 Composite Utilities Plan

A composite utilities plan shall be provided at a scale of 1" = 30'. New and existing utilities shall be indicated. Plans shall show layout of the new and existing storm drainage systems, gas systems, sanitary systems, electrical systems, communication systems, water systems, steam systems and any other utilities which need to be provided for. Include new and existing contours.

1.1.2 Specifications

a. Provide complete edited specifications for all items. Technical specifications shall be complete and fully coordinated with the drawings. All specification indexes shall be completely edited to reflect the paragraphs retained in the body of the specification. All references that have not been used in the body of the specification shall be edited from the technical specification.

b. Specifications shall be coordinated with the plans and include all items including seeding, sodding, trees and shrubs. Special sections shall be prepared to cover those subjects for which no pattern guide specifications are available. These special sections shall include all approved changes from the 60 percent review stage. All guide specifications, to be provided, shall be in edited form showing all text to be deleted and added. These specifications shall include all changes requested during the 60% review stage.

1.1.3 Design Analysis Narrative

Design analysis shall include the following:

1.1.3.1 References

Provide design references used in preparing the Site design.

1.1.3.2 Basis For Design

The Design Analysis should give the basis, specific goals, objectives and priorities for site design of the project. Identify, explain and document use of design criteria and how the design meets goals, objectives and priorities. Identify the preferred site development concept. Document pollution prevention measures and other environmental considerations made during design.

1.1.3.3 Calculations

a. Sprinkler Irrigation System Plan: Sprinkler irrigation plan shall designate the trees, shrubs, bushes, ground cover, and lawn area to be irrigated. Provide flow and pressure requirements. Also include appropriate details.

b. Sprinkler Irrigation System Design Parameters: A list of applicable criteria and/or design standards shall be provided. This shall also include precipitation rates, pipe sizes and material and complete calculations of total flow and pressure requirements and head losses. A narrative description of the system including special requirements and trickle systems shall be provided.

1.2 CIVIL

1.2.1 Drawings

1.2.1.1 Grading and Drainage Plan

A final grading and drainage plan shall be provided at the same scale as the site plan. In addition to the requirements for the preliminary plan, the final plan shall show the final location of all storm drains and roof drains. Storm drainage lines and structures shall be labeled. The rim elevation of all manholes, curb inlets, and area inlets shall be indicated. Provide spot elevations at building corners, access drives, sidewalks, changes in grade, etc. Provide location and description of benchmarks and indicate vertical and horizontal datums.

1.2.1.2 Grading Sections

The preliminary grading sections shall be revised as necessary.

1.2.1.3 Storm Drain Profiles

Provide profiles of all new storm drains showing new and existing grades, new and existing utilities, pavement sections in detail, pipe diameters and lengths, pipe slopes, invert elevations, etc. Class and gauge of all storm drain, subdrain, and culvert pipes shall be provided. Profiles of roof drain runout lines may or may not be provided, at the Contractor's discretion.

1.2.1.4 Drainage Structure Details

Provide typical details of all storm drainage structures. Unless otherwise directed, use Omaha District standard detail drawings. The use of alternate details shall be approved prior to the final design documents. A, B, C, and D dimensions of all storm drain structures shall be shown. Dimensions may be shown on either the storm drain schedules, profiles, or structure detail drawings.

1.2.1.5 Pavement Details

Provide details of concrete curb and gutter, integral curb, typical pavement sections, typical sidewalk section, and interface detail between new and existing pavement.

1.2.1.6 Pavement Joint Layout Plans

Provide pavement joint layout plans with spot elevations at joint intersections for all new concrete pavements. Each type of joint shall be shown with a different symbol and a joint legend provided. Pavement joint layout plans shall be drawn at a scale of 1" = 10' or 1" = 20'. Under no circumstances shall pavement joint layout plan be combined with any other plans.

1.2.1.7 Concrete Pavement Joint Details

Provide concrete pavement joint details. Use Omaha District standard detail drawings.

1.2.1.8 Fence Details

Provide details of fence and gates. Use Omaha District standard detail drawings.

1.2.1.9 Erosion Control Details

Provide details of best management practices used to control erosion.

1.2.2 Specifications

Provide complete edited specifications for all items. Technical specifications shall be complete and fully coordinated with the drawings. All specification indexes shall be completely edited to reflect the paragraphs retained in the body of the specification. All references that have not been used in the body of the specification shall be edited from the technical specification.

1.2.3 Design Analysis Narrative

Design analysis shall include the following:

1.2.3.1 References

Provide design references used in preparing the civil design.

1.2.3.2 Grading

A narrative of the grading design and criteria used.

1.2.3.3 Drainage

A narrative of the drainage design and criteria used. Include information on the storm drain pipe materials selected and their ability to withstand earth dead loads and live loads that will be imposed.

1.2.4 Design Analysis Calculations

1.2.4.1 Storm Drainage System Calculations

Storm Drainage System Calculations shall include the following:

a. Drainage area map showing boundaries of each drainage area and respective drain inlet or culvert.

b. Storm run-off calculations for each drainage area.

c. Tabulation of capacities of new storm drains including: diameter and slope of storm drain pipes, design storm discharge and velocity for each storm drain pipe, maximum discharge capacity of each storm drain pipe, headwater depth of each culvert during design storm discharge.

1.3 GEOTECHNICAL

See Structural Design Requirements.

1.4 WATER SUPPLY AND WASTEWATER

1.4.1 Drawings

Generally, the corrected and approved 60 percent plans may be used as the basis for the final plans. However, all profiles and details necessary for complete construction must be included. The 100 percent final design submittal shall include all the information presented in the 60 percent submittal, updated to final design status, corrected to reflect any changes made in response to review comments, and shall include the additional requirements specified hereinafter. Any concerns in developing the final design documents shall be resolved prior to starting the final design stage.

1.4.1.1 Water Distribution and Sewage Collection Systems Plans (including building services)

Provide all existing utilities and above ground features, including sizes and material types, which may pose as an obstacle (i.e., water, sewer, gas, electrical, etc.) on the basic site plan layout. Indicate existing pipe material and sizes where new lines connect along with the type of connection and elevations of connections. Provide all new water and sewer lines with sizes. This will include all new service lines, up to within the 5 foot building line. Locations of all new manholes, fire hydrants,

valves (including PIV's), similar appurtenances, connection points and etc. shall be provided. Show contours on plan view. Include stationing on both plan and profile sheets.

1.4.1.2 Water Distribution and Sewage Collection Systems Profiles

Profiles of all gravity sewers, waterlines and sewage forcemains shall be provided. Profiles may be omitted for short waterlines, unless necessary to assure adequate cover or avoid interference with other underground facilities. Indicate existing pipe material and sizes where new lines connect. Indicate type of connection and elevation. Include all interference elevations.

1.4.1.3 Water Distribution and Sewage Collection Systems Details

Appropriate water and sewer details shall be provided. Use Omaha District standard detail drawings. The standard detail sheets will be furnished if required. For roadway pavement crossings, indicate installation method (open cut, boring, jacking, etc.). Include standard casing details.

1.4.2 Specifications

Specifications shall be coordinated with the plans and include all items. Provide special sections to cover those subjects for which no UFGS guide specifications are used or available. These special sections shall include all approved changes from the 60 percent review stage. All UFGS guide specifications, to be provided, shall be in edited form showing all text to be deleted and added.

1.4.3 Design Analysis Narrative

Design analysis shall include the following and all applicable data contained in the 60 percent design analysis narrative shall be repeated. References shall not be made to the previous design analysis. The final design analysis shall be corrected to reflect changes in content made in response to review comments, and shall be expanded to reflect the completed design.

1.4.3.1 References

Provide design references used in preparing the water and wastewater design.

1.4.3.2 Water Supply and Distribution Systems

A narrative of the water supply and distribution systems design and applicable criteria used shall be provided. Include the peak domestic demands based on fixture counts, the interior and exterior fire flow requirements and the available flow and residual pressures. A description of the water distribution system, and complete calculations necessary to support equipment, piping sizes, interior and exterior fire demands, and domestic demands, etc. shall be provided.

1.4.3.3 Wastewater and Sewers

A narrative of the wastewater supply design and applicable criteria used shall be provided. Include the peak contributing flows along with the available capacity and full flow capacity of the existing system. A listing of allowable piping materials, and complete calculations necessary

to support equipment and piping sizes shall be provided.

1.5 ARCHITECTURAL

1.5.1 Drawings

The drawings shall be complete, include all necessary and required details, thoroughly checked, and fully coordinated with the technical Specifications and all other Construction Documents. Previous comments and applicable criteria changes shall have been incorporated into the design. Removal work and details should be shown on separate drawings. The contract drawings shall fully describe the type and the scope of work required. The layout of individual sheets and the organization of the assembled set shall follow and communicate a logical sequence. General information shall be presented first, progressing to more detailed information. When assembling details, begin in the upper left-hand corner of the sheet with letters progressing to the right and down. When dimensioning, use arrowheads, not dots or slashes. Where major structural elements are included as parts of architectural detailing, do not indicate sizes. These elements must be fully defined in the structural design documents. See 60% Architectural drawing submittal requirements for drawing scales of remaining drawings to be submitted. Include all drawings from the 60% submittal plus all additional detail drawings required for complete 100% design. These shall include but not be limited to the following:

Interior Elevations and Details
Door Details
Window Details
Louver Details
Roof Details
Stair Details
Casework Plans, Elevations, and Details
Wall Plan Details and Plan Details
Fire Wall Details and Penetration Conditions
Sealant Details
Ceramic Tile Details
Ceiling Details
Control/Expansion Joint Details
All Miscellaneous Details

1.5.2 Technical Specifications

The technical specifications shall be complete and fully coordinated with the drawings. Special sections shall be prepared to cover those subjects for which no pattern guide specification is available. Notes to the Designer that accompany specifications shall be used in editing technical guide specifications. All specification indexes shall be completely edited to reflect the paragraphs retained in the body of the specification. All UFGS guide specifications shall be edited in accordance with Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES.

1.5.3 Design Analysis Narrative

The Design Analysis shall include the basic information presented in the previous submittal, corrected to reflect changes in content made in response to review comments. Outline specifications shall be omitted from the Final Design Analysis as the information is included on the final drawings and project specifications. The design analysis shall be written in the present tense.

1.5.4 Design Analysis Calculations

The Design Analysis calculations shall include the basic information presented in the previous submittal, corrected to reflect changes in content made in response to review comments.

1.5.5 Common Deficiencies

Some repeated errors have occurred in the preparation of design documents in the past. Subsequently these errors have been identified and the Contractor directed to make corrections. The work involved in such corrections becomes lost effort and time for the designer. Some of these errors which are most often overlooked include:

a. Not using correct abbreviations or terminology on the drawings. Abbreviations must match what is used on the standard abbreviation sheet and terminology must match what is used in the standard technical guide specifications.

b. Not using the correct scales, north arrow designation, section cut system, or incomplete dimensioning on the drawings.

c. Not providing sufficient space for door operation hardware at doors which swing into a wall running perpendicular to the opening. 4-inches minimum is required between edge of door frame and perpendicular walls.

d. Not providing correct and complete Design Analysis information written in the present tense. The Design Analysis will be written following the format indicated herein. A separate Fire Protection section in the Design Analysis with input from all disciplines is one area which is often overlooked and shall be included.

e. Not providing a structural stoop at exterior doors where the slab is at the same approximate elevation as the interior floor. The use of simple slabs on exterior grade leads to lifting of the slab in below-freezing temperatures which interferes with the safe operation of the door.

f. Not correctly presenting or coordinating (to avoid interference) features of Fire Protection, Noise Control, and Physical Security.

g. Not correctly referencing and cross referencing building sections, wall sections, details, etc.

h. Failure to read/use technical notes in editing the Technical Guide Specifications.

i. Failure to coordinate all disciplines prior to submittal of projects for review.

j. Improper use of fire-retardant wood. Fire-retardant wood is combustible; its use in buildings that are of noncombustible construction is extremely limited (see UBC for the minor allowable uses). Because of the potential for severe degradation, fire retardant plywood shall not be used in a roof or roofing system, or in structural applications.

k. Incorrectly listing trade names in door hardware specifications in

lieu of ANSI numbers and failure to correctly specify hardware finishes.

l. Control joints in CMU walls and brick expansion joints in face brick are not shown on both architectural plans, elevations and structural plans, or are inconsistent. Note also control joint locating and coordination for floor tile per Tile Council of America recommendations.

m. Failure to delete all publications which do not apply to the particular project.

n. North is not oriented the same direction on all sheets (civil, site, arch).

1.6 INTERIORS

1.6.1 DESIGN ANALYSIS/NARRATIVE

Updates as a result of the 60% review conference shall be made to the design analysis.

1.6.2 DRAWINGS

1.6.2.1 FURNITURE FOOTPRINT

A revised furniture footprint shall be provided.

1.6.2.2 FURNITURE DESIGN (CID)

The furniture package shall be in accordance with the AFCEE Interior Design Requirements for 65% design.
Note: The final furniture package (CID) shall be submitted at the corrected 100% design stage in accordance with the AFCEE Interior Design Requirements for 90%.

1.6.3 TECHNICAL SPECIFICATIONS

Technical specifications shall be in final form for construction (in accordance with the requirements of Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES and shall include all changes requested during the 60% review stage. All specifications shall be completely edited and fully coordinated with the drawings to accurately and clearly identify the product, installation requirements, and testing methods for this facility.

1.6.4 COLOR BOARDS AND LEGENDS

Color boards shall show actual color samples of all proposed exterior and interior finishes and specialties. A color board legend shall accompany the boards and shall clearly identify all finishes. Clarification of finish placement shall be required when more than one color of a single finish is proposed. Color boards shall be 8 1/2" x 11" in size and be provided in a three ring binder. Include project name and location, design stage and date on the front cover and spine of the binder.

1.7 STRUCTURAL

1.7.1 DRAWINGS

Final drawings shall be complete, thoroughly checked, and fully coordinated

with the other disciplines, specifications and all other construction documents. Previous comments and applicable criteria changes shall have been incorporated into the design. The drawings shall be complete with all plan views, elevations, sections, details, schedules, diagrams, and notes necessary for the construction of the project. For structural steel framing, the drawings shall meet the requirements for design drawings set forth in the AISC Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings. All structural steel members and connections shall be fully detailed. Design of structural steel connections shall be the responsibility of the structural design engineer and shall not be delegated to the steel fabricator. For structural concrete, the drawings shall conform to the standards for engineering (design) drawings set forth in the ACI Detailing Manual-1988 (SP-66). Additionally, those items described below which are applicable to the design shall be incorporated into the drawings. Drawings shall be at a scale appropriate for the design, in no case however, shall plan type drawings be done at a scale smaller than 1/4"=1'-0" or detail type drawings at scale smaller than 3/4"=1'-0".

1.7.1.1 Grid Systems, Dimensions, and Floor Elevations

Each foundation and slab plan, floor framing plan and roof framing plan shall have an alpha-numeric grid system aligned with any columns or pilasters, or with load bearing and non-load bearing walls, as applicable. The same grid system shall be used for all plan views. Each plan view shown shall have all necessary dimensions. On plan views, the dimensions shall define the location of grid lines, offsets, and all structural elements, as well as the overall sizes of the structure. The finish elevation of the ground floor slab shall be indicated as 100'-0", and elevations for all other structural elements shall be numerically referenced to this basic elevation.

1.7.1.2 Plan Sheets

a. Foundation and Slab Plans: Foundation and slab plans shall show the size and location of all foundation elements, such as foundation walls and footings. Elevations for footings shall be indicated on the plan. Plans for slabs-on-grade and exterior stoop slabs at building entrances shall show location and type of joints, slab thicknesses and reinforcing, elevation of slab surfaces, and any other design features, such as equipment bases, which affect the slab design. Also, indicate that slabs are placed over capillary water barrier,geotextile, and vapor barrier .

b. Roof and Floor Framing Plans: Roof and floor framing plans shall be provided for all parts of the structure. Plans shall show the size, spacing, and location of all roof and floor framing members, their supporting columns, pilasters or walls, all auxiliary members such as bracing and bridging, and the size and location of all major openings through the roofand floors. Weights of mechanical equipment shall also be shown.

1.7.1.3 Elevation Views, Sections and Details Sheets

Elevation views, sections and details necessary to illustrate fully the design shall be provided. Some requirements peculiar to the various structural materials are described below.

a. Concrete: Include elevation views as necessary, plus sections and

details to show the outlines of concrete cross-sections, reinforcing bar arrangements, concrete cover for rebar, installation of embedded items, and joint construction. All lap splice and embedment lengths for reinforcing bars shall be clearly indicated on the drawings. A sill detail for each foundation condition at exterior and interior doors shall be provided. Show types of precast concrete and their connects to the foundation and structure.

b. Masonry: Wall reinforcing shall be located and identified on plans, in section cuts, elevation views or in schedules. Structural elevations when needed shall be included to clarify the construction requirements for masonry reinforcement, especially the reinforcement around wall openings. Details applicable to the project shall be shown on the structural drawings. Listed below are some frequently required masonry details, most of which are shown in Air Force Technical Manual AFM 88-3, Chp 13, and on the Typical Masonry Sheets. The Typical Masonry Sheets will be provided to the successful offeror upon request and may be edited and incorporated into the final drawings as needed. Additional details as required shall be extracted from other sources and incorporated into the final drawings. All details shall be fully edited to reflect the specific requirements of this project. Supplemental details shall be added as necessary to complete the design.

Masonry Details Frequently Used

- Masonry Control Joint (MCJ).
- Control Joint at Bond Beam.
- Bond Beam Corner Reinforcement.
- Seismic Reinforcement Around Wall Openings.
- Wall Reinforcement Details for l and/or 2 bar-per-cell stiffeners.
- Doweled or Other Connection of Masonry to Foundation, Floor, Roof or Bond Beam.
- Bond Beam (or Steel) Lintels and Bearing Details
- Lateral Support Detail for Top of Masonry Partition Walls. (lateral support locations must be shown on framing plan sheets.)

c. Structural Steel, Steel Joists, and Steel Decking: Structural steel connections shall be fully detailed and shown on the drawings. The anchorage of beams, trusses, joists, and steel deck to walls or other bearings, and the extra framing or reinforcement required at deck openings shall also be detailed. Notes, details, or schedules on the drawings shall indicate the steel deck attachment method to be used, and shall give the size and spacing for perimeter, side lap, intermediate supports and end lap attachments. Welded connections shall be detailed using standard weld symbols illustrated in AWS D1.1. All applicable weld sizes, spacing, types, contours and finishes shall be shown.

1.7.1.4 Schedules

a. Foundation Schedules: Foundation schedules for footings shall be included, as applicable. The schedule shall include all pertinent information required for the foundation system being used.

b. Framing Schedules: For concrete framing, beam and column schedules shall conform to the requirements of the ACI Detailing Manual. For structural steel framing, provide a column schedule complete with design loads at splices, if any, and at column bases.

1.7.1.5 Equipment Loads

All equipment loads which exceed 200 lbs and are not supported by concrete slab-on-grade shall be identified on the drawings by showing equipment locations, total weights, and reaction loads at support points.

1.7.1.6 Notes

a. Design Notes: Under the heading "Designer's Notes," the structural drawings shall contain notes which begin: "The structural design was prepared using the following data:". The data then listed shall include the structural loading criteria used for design, such as roof and floor live loads, snow load design parameters, wind speed and wind load design parameters, seismic design parameters (SS, S1, Site Class, and Occupancy Category), allowable soil bearing pressures (as recommended by the Final Foundation Analysis report), foundation design depth, design wind uplift pressures for steel joists and other data pertinent to future alterations. Also, to be listed are the ASTM designations and stress grades of the applicable structural materials: steel, masonry, concrete for each usage, reinforcing bars, welds, and bolts.

b. General Notes: Other notes, which direct the work to be performed, the materials to be used, etc., shall be grouped under the heading of "General Notes." Included in these notes should be a description of the building's structural system, if necessary.

1.7.2 SPECIFICATIONS

Technical specifications for final design shall be prepared in accordance with the instructions provided in Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES. The technical specifications shall be complete and fully coordinated with the drawings. All specification indexes shall be completely edited to reflect the paragraphs retained in the body of the specification. All references that have not been used in the body of the specification shall be edited from the technical specification.

1.7.3 DESIGN ANALYSIS NARRATIVE

The final design analysis narrative shall repeat and expand upon the basic information presented in the 60% design analysis narrative, and shall be corrected to reflect revisions made for the final design.

1.7.4 DESIGN ANALYSIS CALCULATIONS

Calculations shall be prepared by an experienced structural engineer and shall include an investigation of loading, (gravity, wind, seismic, etc.) shear, moment, wind uplift, stability and deflection calculations. The computations are to be systematic and accurate. Similar beams, columns, panels, or connections may be grouped by designing the largest member or connection in the group, but every individual slab, beam, column, footing, connection or other structural member or structural consideration indicated by the plans shall be accounted for by pertinent calculations, statement or reasoning, or reference to source. Design formulas shall be written out in symbols the first time each is used, before the numerical values are supplied. All answers shall be identified by dimensional units. Basic assumptions of loads, working stresses, and methods of analysis must appear in the calculations; these assumptions must be applied consistently to a given problem. The calculations shall be presented in a clear and legible

form, incorporating a title page, table of contents, and a tabulation showing all design loads and conditions. Pages shall be numbered consecutively and identified in the table of contents. Cross referencing shall be clear. The source of loading conditions, formulas, and references will be identified. Assumptions and conclusions will be explained. Superseded areas of computations must be ruled out. All computations shall be given a complete numerical and theoretical check within the Contractor's office. Calculation sheets shall carry the names or initials of the developer and the checker, and the dates of calculations and checking. No portion of the design calculations shall be developed and checked by the same individual.

1.7.4.1 Computer Calculation Submittals

All applicable input and output data shall be included in readable printed form as part of the design calculations. Continuous paper such as that used in computer terminals or printers shall be cut into individual pages and shall not be submitted in a continuous roll form. All input and output data shall include a brief synopsis of the computer program(s) stating required input, method of solution, approximations used, codes and specifications used, output generated, extent of previous usage or certification of the program(s), and program author(s). Generalized flow chart(s) may be used to supplement description of solution process, if desired. All computer generated and long-hand calculation sheets shall be identified by sheet number, indexing and cross-referencing. Each member or structure being analyzed shall be identified, dimensioned and shown in a loading diagram. A separate diagram shall be provided for each load case, such as dead plus live, dead plus wind, etc. Input and output values including intermediate values shall clearly be identified if such values are necessary for evaluation of the submittal.

1.8 MECHANICAL

The 100 percent final design submittal shall include all the information presented in the 60 percent submittal, updated to final design status, corrected to reflect any changes made in response to review comments, and shall include the additional requirements specified hereinafter. Any concerns in developing the final design documents shall be resolved prior to starting the final design stage.

1.8.1 DESIGN DRAWINGS

The final design drawings shall be fully coordinated with the design analysis and specifications. Provide sufficient plans, piping diagrams and isometrics, mechanical room sections, water and air flow diagrams, details, schedules, control diagrams, sequences of operation, etc., as necessary to define the design requirements. Large-scale plans of congested areas shall be provided. Coordinate with architectural design for provision of access panels for all concealed valves, traps and air vents, etc. Floor plans shall use the architectural floor plans as a basis, with the building outline half-toned. The final design drawings shall include all the requirements and drawings defined for the 60 percent submittal. In addition, the following new drawing requirements and drawings shall be provided:

1.8.1.1 Mechanical Abbreviation, Legend, and General Notes Sheet

On this sheet, include any mechanical general installation notes that may be required to clarify the construction intent that may not be readily

apparent in the specifications or on the drawings. General notes may be provided on a separate sheet if space does not exist on the Abbreviation and Legend sheet.

1.8.1.2 Plumbing Drawings

Enlarged Toilet Room Plans:

Enlarged toilet room plans showing all fixtures, water, waste, and vent piping shall be provided for each toilet area. Enlarged plans shall be drawn at a minimum 1/8" = 1'-0" scale.

1.8.1.3 Mechanical HVAC Drawings

Hot Water System Flow Diagram:

Provide a hot water flow diagram showing the boiler, pumps, and all connected heating equipment including radiant floor heating system. Each equipment item shall show associated flowrate. All thermometers, pressure gauges, isolation and control valves, bypass piping, etc. shall be shown on the flow diagram.

Chilled Water System Flow Diagram:

Provide a chilled water flow diagram showing the cooler, pumps, and all connected cooling equipment. Each equipment item shall show associated flowrate. All thermometers, pressure gauges, isolation and control valves, bypass piping, etc. shall be shown on the flow diagram.

1.8.1.4 HVAC Control Drawings

In addition to the updated Controls Legend and System Block Diagram Sheets, final HVAC control drawings for each system and item of equipment shall be in accordance with the following requirements. Control diagrams. Change second sentence to read: Control diagrams shall schematically show all sensors, controllers, actuators, indicators, emergency HVAC shut down and operator interface devices required for the compete automatic control, manual shut down and monitoring of the system.:

Control Diagrams:

Control Diagrams shall be provided for each system or item of equipment. Systems diagrams shall include every major component installed in or connected to the system, and only one system shall be shown on each diagram. Control Diagrams shall schematically show all sensors, controllers, actuators, indicators, and operator interface devices that are required for the complete automatic control and monitoring of the system. All sensing devices utilized in the control or instrumentation of the system, and all actuating devices shall be shown in their correct mechanical location and functionally interconnected to the other control devices which comprise the control loop. All controlling devices shall be shown with all functional interconnections to inputs and outputs. Each sensing, controlling, actuating, and indicating device shall have its own unique control loop tag identifier. Communication linkages required to complete the entire intended interface between operators and the control system shall be shown schematically. This includes interconnections between local temperature control panels and the base EMCS. All associated thermometers and pressure gauges, located in their correct mechanical locations, shall also be shown on the diagrams.

Sequence of Operations:

Sequence of Operations shall be provided for each item of equipment or system and shall fully describe the intended operation of the equipment or system in all different operating modes. As identified on the furnished Example Control Drawings, each Sequence shall be broken down by individual control loops and shall include descriptions of both normal operating modes (running, shutdown, standby, etc.) and abnormal, emergency or safety related modes. Sequences shall include a description of all indication instrumentation, alarm conditions, and automatic actions to be taken upon occurrence of alarm conditions. Each device referenced in the sequence shall be referred to by its unique tag identifier, with each component designator shown in parenthesis. Design setpoints shall be specified for each control loop and indicated as being adjustable. See furnished Example HVAC Control Drawings for the required level of detail and formatting.

The designer shall analyze every component of each system and write each Sequence of Operation to compliment the Functional Performance Checklists. The Sequence of Control on the project drawings shall be explicit and written to ensure that all the requirements of the "Functional Performance Test Checklists" can be accomplished.

Control Points Lists:

Control points lists, identifying each temperature control system input and output, shall be developed for each temperature control panel. See furnished Example HVAC Control Drawings for the required level of detail and formatting.

1.8.2 TECHNICAL SPECIFICATIONS

The submitted 60 percent technical guide specifications shall be updated, completely edited, and fully coordinated with the drawings to accurately and clearly identify the final product and installation requirements for the facility.

1.8.3 DESIGN ANALYSIS NARRATIVE

The Final Design Analysis Narrative shall include the information presented in the 60 percent submittal, shall be corrected to reflect changes in content made in response to review comments, and shall be expanded to reflect the completed design.

1.8.4 DESIGN ANALYSIS CALCULATIONS

The Final Design Analysis calculations shall include all the information presented in the 60 percent submittal, shall be corrected to reflect changes in content made in response to review comments, and shall be expanded to reflect the completed design. In addition, the following new calculations shall be provided:

a. Pipe sizing calculations for the chilled & heating hot water, plumbing, gas piping systems.

b. Chilled & heating hot water pump head calculations.

c. Chilled & heating hot water expansion tank sizing.

d. External static pressure calculations for all fans.

e. Control Valve CV calculations.

1.9 ELECTRICAL

1.9.1 Drawings

Drawing scale shall match architectural drawing requirements.

1.9.1.1 Interior Drawings

Drawings shall be complete and accurate in every detail and shall include arrangements and types of light fixtures, receptacles, switching, location of special features, necessary details, including legends, fixture schedule, panel schedules, one-line diagrams, layout or functional diagrams for each of the various systems, riser diagrams if applicable, estimated maximum demand for each panel and for entire building and any other relative information which will help clear up any and all questionable items on the plans or in the specifications toward the development of a set of plans which will be clear, concise and correct. Additional drawing requirements for specific equipment or systems have been included in subsequent paragraphs pertaining to the equipment or systems.

1.9.1.2 Floor Plans

All rooms must be identified by name and number. Plans must be legible. Plans shall be developed using the same scale and areas as the architectural floor plans. Separate floor plans must be provided for lighting, power, communications, and fire detection.

1.9.1.3 Diagrams

The power one-line diagram shall be on a dedicated sheet. The diagram should show ratings of major equipment including short circuit ratings. Power, communications diagrams, fire detection and telephone diagrams should be on separate sheets also.

1.9.1.4 Schedules

Provide panelboard and lighting fixture schedules. Panelboard schedules shall include the designation, location, mounting (flush or surface), number of phases and wires, voltage, ampacity and total connected and demand load. Indicate the trip rating, frame size, interrupting rating and number of poles for each circuit breaker in the panelboards. List the circuit number, circuit description and load for each branch circuit.

1.9.1.5 Exterior Drawings

Drawings shall be complete and accurate in all details and shall include the routing of all feeder and branch circuits.

1.9.2 Specifications

All specifications shall be completely edited and fully coordinated with the drawings to accurately and clearly identify the product, installation requirements, and testing methods for this facility.

1.9.3 Design Analysis Narrative

The text of the preliminary design analysis should be expanded to reflect the completed design. Calculations used to develop the design should be included. The document in its final form should conform in all applicable respects to the requirements of Section 01007 ELECTRICAL DESIGN REQUIREMENTS.

1.9.4 Design Analysis Calculations

Backup data shall be furnished to support basic design decisions related to sizing of major equipment and materials, selection of economic alternatives, performance of specific systems or equipment. Calculations may be performed by manual or computerized procedures. Use of standardized charts, curves, tables, graphs will generally be acceptable for portions of required calculations or in lieu of specific calculation procedures. Such data must be from a recognized source which is identified in the design analysis. If possible, a copy of applicable sheets or pages should be included with the calculations. For given equipment, the calculations must conform to requirements identified under subsequent paragraphs herein pertaining to the equipment.

1.9.4.1 Service

Sizing of building service.

1.9.4.2 Transformers

Sizing of all transformers. (Generally for dry type transformers, 1 or 2 samples of detailed calculations to identify the method are sufficient, if input data for remaining units can be derived from panel or feeder sizing data.)

1.9.4.3 Feeders

Sizing of feeders (One detailed sample calculation is sufficient to establish the procedure, remaining data can be in schedules, tables, etc.).

1.9.4.4 Panelboards

Sizing and loading of panelboards and distribution equipment.

1.9.4.5 Voltage drop determination

Provide voltage drop calculations in accordance with IEEE 241 to demonstrate that the voltage drop requirements of NFPA 70 are satisfied.

1.9.4.6 Illumination calculations

Data should identify target and calculated illumination levels for all rooms and areas. Calculations should be adjusted to compensate for special applications -- irregularly shaped rooms, open sides, ceiling obstructions (beams, ductwork), corridors, etc. If the lumen method is used for corridor calculations, the calculations should be performed using a module in which the length doesn't exceed 3 times the width (2:1 ratio preferred).

1.9.4.7 Short Circuit Evaluation

Calculate the fault current in accordance with IEEE 242 for each node in

the electrical distribution system.

1.9.4.8 Protective Coordination Analysis

A protective coordination study shall be performed to show that the power system is selectively coordinated and is fully coordinated with the upstream loadcenter breakers. In addition the study shall include all existing and new devices in the Power Plant affected by the installation of the Consolidated Space Group Operations Facility. The protective coordination / short circuit study shall be complete and approved by the government before any changes are made to the existing equipment.

1.9.4.9 Specialized Applications

Additional engineering backup should be included to address special requirements such as accommodation of nonlinear loads, harmonics analysis, energy studies, etc.

1.10 FIRE PROTECTION

1.10.1 DRAWINGS

Design will be an extension of the 60% submittal, incorporating all comments thereto and any revised criteria, as specifically directed by the District Office. All conflicts, lack of specific criteria, and/or direction, inconsistencies, ambiguities, and lack of thorough understanding of the nature and scope of work shall be resolved prior to starting final design work. The fire protection plans shall show the following: entire sprinkler system; fire detection system, to include control panels, remote annunciators, alarm notification devices, and each initiating device; fire walls; fire partitions; building separations; other fire protection features.

1.10.2 DESIGN ANALYSIS

The final design analysis will be an extension of the 60% design analysis and shall be complete for every item covered in the design and will include, but not be limited to, the following:

a. List of design criteria.

b. Design conditions.

c. Design calculations.

d. Complete description of system alarm zones.

e. Complete description of system sprinkler system.

f. Complete description of the building fire protection features.

g. Other pertinent information of value for future use in construction contract administration, substantiation of design methods, or permanent record shall be included.

1.10.3 TECHNICAL GUIDE SPECIFICATIONS

The following UFGS guide specifications shall be completely edited and fully coordinated with the drawings to accurately and clearly identify the

product and installation requirements for the facility:

13930A	Wet-Pipe Sprinkler Systems, Fire Protection
13851A	Fire Detection System and Alarm System, Addressable

All items identified in the specifications not required shall be marked for deletion in accordance with the requirements of Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES. Those items of equipment, materials, or installation requirements that are required are not permitted to be modified or changed from that presently shown. Government approval is required for the final submittal of these guide specs.

1.11 ENVIRONMENTAL PROTECTION COMPLIANCE

1.11.1 Guide Specifications

The Contractor shall be responsible for updating/revising Specification Section 01355 ENVIRONMENTAL PROTECTION. See Attachment No. [ ]. Any additional environmental compliances that may be required for this project shall be included. This section shall be included with the 100% Design Specifications rather it has any revisions or not. See 60% submittal requirements for additional information.

1.11.2 Design Analysis

The Contractor shall update/revise the chapter in the 60% Design Analysis entitled: "Environmental Protection Compliance".

1.11.3 Submittal of Environmental Approvals, Permit Application and Associated Documents

Any revisions that may be required to the permits and/or approvals which were submitted with the 60 percent submittals shall be submitted with final design submittals. If these submittals were not required to be submitted to the governing agencies for a permit or approval at 60% design, they shall be submitted with the 100% Design documents. Any additional approvals and/or Permits required, which were not previously submitted, shall be submitted to the Corps of Engineers with sufficient time for the permits to be obtained prior to construction commencing or with the final design submittals.

1.12 HEALTH AND SAFETY AND SPECIAL DISPOSAL REQUIREMENTS

1.12.1 Design Analysis and Reports

a. Design Analysis Narrative.

The design analysis shall contain an updated description and analysis of the Health and Safety portions of the design. Special features, unusual requirements, etc., should be noted. Narrative must address all technical requirements identified in Section 01009 HEALTH AND SAFETY AND SPECIAL DISPOSAL REQUIREMENTS.

b. Reports

As an Appendix to the Design Analysis, the 100% submittal shall include updated copies of the lead-based paint survey report, an asbestos survey report, and a report discussing results of the walk-through survey for building components that may contain PCBs or mercury.

1.12.2 Specifications

The 100% submittal shall include the completely edited specifications detailing all hazardous materials to be removed prior to building demolition, health and safety procedures associated with removal of hazardous materials, health and safety procedures if hazardous materials are left in place (if applicable), and proper procedures for disposal of hazardous materials. See Section 01009 HEALTH AND SAFETY AND SPECIAL DISPOSAL REQUIREMENTS for additional requirements.

1.12.3 Drawings

The 100% submittal shall also include drawings showing the locations of any asbestos materials to be removed from the buildings.

PART 2 NOT USED

PART 3 NOT USED

-- End of Section --

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SECTION 01355

ENVIRONMENTAL PROTECTION
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PART 1 GENERAL

Attachments

The State of Colorado Construction Dewatering Permit
El Paso County Fugitive Dust Permit

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

33 CFR 328	Definitions
40 CFR 68	Chemical Accident Prevention Provisions
40 CFR 112	Oil Pollution Prevention
40 CFR 122	EPA Administered Permit Programs: The National Pollutant Discharge Elimination System
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 279	Standards for the Management of Used Oil
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 355	Emergency Planning and Notification
49 CFR 171 - 178	Hazardous Materials Regulations

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2003) U.S. Army Corps on Engineers Safety and Health Requirements Manual
WETLAND MANUAL	Corps of Engineers Wetlands Delineation Manual Technical Report Y-87-1

1.2 DEFINITIONS

1.2.1 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally and/or historically.

1.2.2 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2.3 Contractor Generated Hazardous Waste

Contractor generated hazardous waste means materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint thinners (i.e. methyl ethyl ketone, toluene etc.), waste thinners,excess paints, excess solvents, waste solvents, and contaminated rinse water.

1.2.4 Land Application for Discharge Water

The term "Land Application" for discharge water implies that the Contractor shall discharge water at a rate which allows the water to percolate into the soil. No sheeting action, soil erosion, discharge into storm sewers, discharge into defined drainage areas, or discharge into the "waters of the United States" shall occur. Land Application shall be in compliance with all applicable Federal, State, and local laws and regulations.

1.2.5 Surface Discharge

The term "Surface Discharge" implies that the water is discharged with possible sheeting action and subsequent soil erosion may occur. Waters that are surface discharged may terminate in drainage ditches, storm sewers,creeks, and/or "waters of the United States" and would require a permit to discharge water from the governing agency.

1.2.6 Waters of the United States

All waters which are under the jurisdiction of the Clean Water Act, as defined in 33 CFR 328.

1.2.7 Wetlands

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, and bogs. Official determination of whether or not an

area is classified as a wetland must be done in accordance with WETLAND MANUAL.

1.3 GENERAL REQUIREMENTS

The Contractor shall minimize environmental pollution and damage that may occur as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract. The Contractor shall comply with all applicable environmental Federal, State, and local laws and regulations. The Contractor shall be responsible for any delays resulting from failure to comply with environmental laws and regulations.

1.4 SUBCONTRACTORS

The Contractor shall ensure compliance with this section by subcontractors.

1.5 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

Adminstrative Submittals

Environmental Protection Plan.

The environmental protection plan.

1.6 ENVIRONMENTAL COORDINATION, PERMITS, NOTICES, REVIEWS AND/OR APPROVALS

The Contractor shall be responsible for contacting the appropriate Federal, State, Regional, and local environmental agencies to identify all required environmental permits (construction and operating), notices, reviews, and approvals required for the project. Once the requirements are identified, the Contractor shall be responsible for coordinating the requirements with Peterson's AFB's Environmental personnel and the Contracting Officer in regard to implementation for a Federal Facility project. The Contractor shall ensure that all coordination, permits, notices, reviews and/or approvals are completed with each applicable phase of the design prior to construction starting for that phase. The Contractor shall be responsible for any contract delays resulting from failure to obtain environmental permits, notices, reviews and/or approvals when required.

1.6 Applications, Supporting Documents, and Fees

The Contractor shall obtain and complete all environmental permit applications and notices including any documents required for a modification for an existing permit held by the Facility. The Contractor is responsible for preparing all supporting documents, including but not limited to engineering reports, emission surveys, diagrams, pollutant load calculations, etc. If, in lieu of permits, the governing agency requires review and approval of the design, the Contractor shall submit and obtain approval of the design and associated documents. The Contractor shall be responsible for all fees associated with the permits, applications, reviews, approvals, and notices.

1.6.2 Environmental Permits, Notices, Reviews, and/or Approvals

The following is a listing of permits, notices, reviews, and/or approvals which **may be** required for this project. This listing and requirements are not to be considered all-inclusive by the Contractor, but is provided as information to be used in successfully accomplishing the environmental compliances.

a. In the State of Colorado, **EPA** has authority for the National Pollutant Discharge Elimination System (NPDES) on **Federal Facilities**. **If** construction activities results in the disturbance of 1 acre of land or more, coverage under the EPA Storm Water General Permit For Construction Activities (Colorado Permit No. COR10*##F) is required. The Contractor and the Omaha District Corps of Engineers shall be co-permittees. The Contractor shall be responsible for editing and applying Specification Section 01565 NPDES PERMIT REQUIREMENTS FOR STORM WATER DISCHARGES FROM CONSTRUCTION SITES.

b. A State of Colorado Air Pollution Emission Notice (APEN) for Fugitive Dust Permit for Land Development is required, if construction disturbs surface areas of more than 25 contiguous acres **or** if surface areas of more than 1 acre are to remain disturbed more than six months. The Colorado Department of Public Health and Environment (CDPHE), Division Air Quality issues the permit. The Contractor shall be the permittee and the permit is required prior to any construction starting on the project site. The submittal package to CDPHE shall include a completed Air Pollution Emission Notice (APEN), a Land Disturbance Dust Control Plan, the grading plan, the location plan, and the application fee. The CDPHE requires a minimum of 30 days for review of the package. Prior to issuing the Construction Permit, CDPHE requires the permittee to pay the cost of the review in addition to the application fee.

c. An El Paso County Construction Activities Permit will be required in addition to the State of Colorado Fugitive Dust Permit, **if** the land disturbance will be greater than 1 acre but less than 25 acres **and** will not exceed six months in duration.

e. The Colorado Water Quality Control Act and Regulations promulgated thereunder requires that the construction or expansion of any domestic wastewater treatment works with a design capacity of pumping more than two thousand gallons per day have approval of the site location and of the design of the construction or expansion. The Contractor shall be responsible for obtaining the approval of the site and the design of any expansion and/or lift stations that meets these requirement. The Contractor shall be responsible for completion of application, associated design documents, and all requirements for the site approval process in accordance with the State requirements. The Contractor shall be responsible for payment of all fees associated with the review and approval. In addition, the Contractor shall be responsible for coordination of the site approval process with Peterson AFB's Environmental Flight and the approving agencies. The Contractor shall attend all local government board meetings required by the Pikes Peak Area Council of Governments for approval. The site approval process may require up to 4-5 months and should be

started as soon as the location of the lift station and the design calculations are available. A Professional Engineer registered in the State of Colorado is required to certify the design documents and to certify that the expansion and/or lift station was constructed in accordance with the approved design.

e. Coordination and Notification may be required prior to discharge of hydrostatic test water and disinfection water to the sanitary sewer and/or to the surface for land application. The Contractor shall be responsible for coordination with Peterson AFB and the Contracting Officer. The discharge shall be in accordance with all Federal, State, and local laws and regulations.

1.7 ENVIRONMENTAL PROTECTION PLAN

Prior to commencing construction activities or delivery of materials to the site, the Contractor shall submit an Environmental Protection Plan for review and approval by the Contracting Officer. The purpose of the Environmental Protection Plan is to present a comprehensive overview of known or potential environmental issues which the Contractor must address during construction. Issues of concern shall be defined within the Environmental Protection Plan as outlined in this section. The Contractor shall address each topic at a level of detail commensurate with the environmental issue and required construction task(s). Topics or issues which are not identified in this section, but which the Contractor considers necessary, shall be identified and discussed after those items formally identified in this section. Prior to submittal of the Environmental Protection Plan, the Contractor shall meet with the Contracting Officer for the purpose of discussing the implementation of the initial Environmental Protection Plan; possible subsequent additions and revisions to the plan including any reporting requirements; and methods for administration of the Contractor's Environmental Plans. The Environmental Protection Plan shall be current and maintained onsite by the Contractor.

1.7.1 Compliance

No requirement in this Section shall be construed as relieving the Contractor of any applicable Federal, State, and local environmental protection laws and regulations. During Construction, the Contractor shall be responsible for identifying, implementing, and submitting for approval any additional requirements to be included in the Environmental Protection Plan.

1.7.2 Contents

The environmental protection plan shall include, but shall not be limited to, the following:

a. Name(s) of person(s) within the Contractor's organization who is(are) responsible for ensuring adherence to the Environmental Protection Plan.

b. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable.

c. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel.

d. Description of the Contractor's environmental protection personnel

training program.

e. An erosion and sediment control plan which identifies the type and location of the erosion and sediment controls to be provided. The plan shall include monitoring and reporting requirements to assure that the control measures are in compliance with the erosion and sediment control plan, Federal, State, and local laws and regulations. A Storm Water Pollution Prevention Plan (SWPPP) may be substituted for this plan.

f. Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on the site.

g. Traffic control plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Plan shall include measures to minimize the amount of mud transported onto paved public roads by vehicles or runoff.

h. Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas including methods for protection of features to be preserved within authorized work areas.

i. Drawing showing the location of borrow areas.

j. The Spill Control plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by 40 CFR 68, 40 CFR 112, 40 CFR 302, 40 CFR 355, and/or regulated under State or Local laws and regulations. The Spill Control Plan supplements the requirements of EM 385-1-1. This plan shall include as a minimum:

1. The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Contracting Officer, Facility Fire Department and Petersen AFB's Environmental Flight Office in addition to the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity is released to the environment. The plan shall contain a list of the required reporting channels and telephone numbers.

2. The name and qualifications of the individual who will be responsible for implementing and supervising the containment and cleanup.

3. Training requirements for Contractor's personnel and methods of accomplishing the training.

4. A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.

5. The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of

an unforeseen spill emergency.

6. The methods and procedures to be used for expeditious contaminant cleanup.

k. A non-hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris. The plan shall include schedules for disposal. The Contractor shall identify any subcontractors responsible for the transportation and disposal of solid waste. Licenses or permits shall be submitted for solid waste disposal sites that are not a commercial operating facility. Evidence of the disposal facility's acceptance of the solid waste shall be attached to this plan during the construction. The Contractor shall attach a copy of each of the Non-hazardous Solid Waste Diversion Reports to the disposal plan. The report shall be submitted on the first working day after the first quarter that non-hazardous solid waste has been disposed and/or diverted and shall be for the previous quarter (e.g. the first working day of January, April, July, and October). The report shall indicate the total amount of waste generated and total amount of waste diverted in cubic yards or tons along with the percent that was diverted.

l. A recycling and solid waste minimization plan with a list of measures to reduce consumption of energy and natural resources. The plan shall detail the Contractor's actions to comply with and to participate in Federal, State, Regional, and local government sponsored recycling programs to reduce the volume of solid waste at the source.

m. An air pollution control plan detailing provisions to assure that dust, debris, materials, trash, etc., do not become air borne and travel off the project site. If an El Paso County and/or State of Colorado Fugutive Dust permit is required, a copy of any plans and/or permits ahll be included as an attachment to the plan.

n. A contaminant prevention plan that: identifies potentially hazardous substances to be used on the job site; identifies the intended actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with Federal, State, and local laws and regulations for storage and handling of these materials. In accordance with EM 385-1-1, a copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be on site at any given time shall be included in the contaminant prevention plan. As new hazardous materials are brought on site or removed from the site, the plan shall be updated.

o. A waste water management plan that identifies the methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines. If a settling/retention pond is required, the plan shall include the design of the pond including drawings, removal plan, and testing requirements for possible pollutants. If land application will be the method of disposal for the waste water, the plan shall include a sketch showing the location for land application along with a description of the pretreatment methods to be implemented. If surface discharge will be the method of disposal, a copy of the Colorado Water Quality Control Division Construction Dewatering Wastewater Discharge permit and associated documents shall be included as an attachment prior to

discharging the waste water. Colorado Water Quality Control Division Permit application forms are attached. If disposal is to a sanitary sewer, the plan shall include documentation that the Colorado Springs Waste Water Treatment Facility Manager has approved the flow rate, volume, and type of discharge.

p. A historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands known to be on the project site: and/or identifies procedures to be followed if historical archaeological, cultural resources, biological resources and wetlands not previously known to be onsite or in the area are discovered during construction. The plan shall include methods to assure the protection of known or discovered resources and shall identify lines of communication between Contractor personnel and the Contracting Officer.

1.7.3 Appendix

Copies of all environmental permits, permit application packages, approvals to construct, notifications, certifications, reports, and termination documents shall be attached,as an appendix, to the Environmental Protection Plan.

1.8 PROTECTION FEATURES

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. Prior to start of any onsite construction activities, the Contractor and the Contracting Officer shall make a joint condition survey. Immediately following the survey, the Contractor shall prepare a brief report including a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. This survey report shall be signed by both the the Contractor and the Contracting Officer upon mutual agreement as to its accuracy and completeness. The Contractor shall protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference which their preservation may cause to the Contractor's work under the contract.

1.9 ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

Any deviations, requested by the Contractor, from the drawings, plans and specifications which may have an environmental impact will be subject to approval by the Contracting Officer and may require an extended review, processing, and approval time. The Contracting Officer reserves the right to disapprove alternate methods, even if they are more cost effective, if the Contracting Officer determines that the proposed alternate method will have an adverse environmental impact.

1.10 NOTIFICATION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with Federal, State or local environmental laws or regulations, permits, and other elements of the Contractor's Environmental Protection plan. The Contractor shall, after receipt of such notice,

inform the Contracting Officer of the proposed corrective action and take such action when approved by the Contracting Officer. The Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or equitable adjustments allowed to the Contractor for any such suspensions. This is in addition to any other actions the Contracting Officer may take under the contract, or in accordance with the Federal Acquisition Regulation or Federal Law.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 ENVIRONMENTAL PERMITS AND COMMITMENTS

The Contractor shall be responsible for obtaining and complying with all environmental permits and commitments required by Federal, State, Regional, and local environmental laws and regulations.

3.2 LAND RESOURCES

The Contractor shall confine all activities to areas defined by the drawings and specifications. Prior to the beginning of any construction, the Contractor shall identify any land resources to be preserved within the work area. Except in areas indicated on the drawings or specified to be cleared, the Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without approval. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. The Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Stone, soil, or other materials displaced into uncleared areas shall be removed by the Contractor.

3.2.1 Work Area Limits

Prior to commencing construction activities, the Contractor shall mark the areas that need not be disturbed under this contract. Isolated areas within the general work area which are not to be disturbed shall be marked or fenced. Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, any markers shall be visible in the dark. The Contractor's personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

3.2.2 Landscape

Trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques. The Contractor shall restore landscape features damaged or destroyed during construction operations outside the limits of the approved work area.

3.2.3 Erosion and Sediment Controls

The Contractor shall be responsible for providing erosion and sediment control measures in accordance with Federal, State, and local laws and regulations. The erosion and sediment controls selected and maintained by

the Contractor shall be such that water quality standards are not violated as a result of the Contractor's construction activities. The area of bare soil exposed at any one time by construction operations should be kept to a minimum. The Contractor shall construct or install temporary and permanent erosion and sediment control best management practices (BMPs) as indicated on the drawings. BMPs may include, but not be limited to, vegetation cover, stream bank stabilization, slope stabilization, silt fences, construction of terraces, interceptor channels, sediment traps, inlet and outfall protection, diversion channels, and sedimentation basins. The Contractor's best management practices shall also be in accordance with the Colorado General Permit No. COR-030000, Stormwater Discharges Associated with Construction Activity, Storm Water Managment Plan (SWMP) which may be reviewed at the Peterson AFB Environmental Flight Office. Any temporary measures shall be removed after the area has been stabilized.

3.2.4 Contractor Facilities and Work Areas

The Contractor's field offices, staging areas, stockpile storage, and temporary buildings shall be placed in areas designated on the drawings or as directed by the Contracting Officer. Temporary movement or relocation of Contractor facilities shall be made only when approved. Erosion and sediment controls shall be provided for on-site borrow and spoil areas to prevent sediment from entering nearby waters. Temporary excavation and embankments for plant and/or work areas shall be controlled to protect adjacent areas.

3.3 WATER RESOURCES

The Contractor shall monitor construction activities to prevent pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation unless otherwise indicated. All water areas affected by construction activities shall be monitored by the Contractor. For construction activities immediately adjacent to impaired surface waters, the Contractor shall be capable of quantifying sediment or pollutant loading to that surface water when required by State or Federally issued Clean Water Act permits.

3.3.1 Wetlands

The Contractor shall not enter, disturb, destroy, or allow discharge of contaminants into any wetlands.

3.4 AIR RESOURCES

Equipment operation, activities, or processes performed by the Contractor shall be in accordance with all Federal and State air emission and performance laws and standards.

3.4.1 Particulates

Dust particles; aerosols and gaseous by-products from construction activities; and processing and preparation of materials, such as from asphaltic batch plants; shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical

treatment of an approved type, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. The Contractor must have sufficient, competent equipment available to accomplish these tasks. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs. The Contractor shall comply with all State and local visibility regulations.

3.4.2 Odors

Odors from construction activities shall be controlled at all times. The odors shall not cause a health hazard and shall be in compliance with State regulations and/or local ordinances.

3.4.3 Sound Intrusions

The Contractor shall keep construction activities under surveillance and control to minimize environment damage by noise. The Contractor shall comply with the provisions of the State of Colorado rules.

3.4.4 Burning

Burning shall be prohibited on the Government premises.

3.5 CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL

Disposal of wastes shall be as directed below, unless otherwise specified in other sections and/or shown on the drawings.

3.5.1 Solid Wastes

Solid wastes (excluding clearing debris) shall be placed in containers which are emptied on a regular schedule. Handling, storage, and disposal shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with solid waste. The Contractor shall transport solid waste off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. A Subtitle D RCRA permitted landfill shall be the minimum acceptable off-site solid waste disposal option. The Contractor shall verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate.

3.5.2 Chemicals and Chemical Wastes

Chemicals shall be dispensed ensuring no spillage to the ground or water. Periodic inspections of dispensing areas to identify leakage and initiate corrective action shall be performed and documented. This documentation will be periodically reviewed by the Government. Chemical waste shall be collected in corrosion resistant, compatible containers. Collection drums shall be monitored and removed to a staging or storage area when contents are within 6 inches of the top. Wastes shall be classified, managed, stored, and disposed of in accordance with Federal, State, and local laws and regulations.

3.5.3 Contractor Generated Hazardous Wastes/Excess Hazardous Materials

Hazardous wastes are defined in 40 CFR 261, or are as defined by applicable State and local regulations. Hazardous materials are defined in

49 CFR 171 - 178. The Contractor shall, at a minimum, manage and store hazardous waste in compliance with 40 CFR 262. The Contractor shall take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing. The Contractor shall segregate hazardous waste from other materials and wastes, shall protect it from the weather by placing it in a safe covered location, and shall take precautionary measures such as berming or other appropriate measures against accidental spillage. The Contractor shall be responsible for storage, describing, packaging, labeling, marking, and placarding of hazardous waste and hazardous material in accordance with 49 CFR 171 - 178, State, and local laws and regulations. The Contractor shall transport Contractor generated hazardous waste off Government property within 60 days in accordance with the Environmental Protection Agency and the Department of Transportation laws and regulations. The Contractor shall dispose of hazardous waste in compliance with Federal, State and local laws and regulations. Spills of hazardous or toxic materials shall be immediately reported to the Contracting Officer and the Facility Environmental Office. Cleanup and cleanup costs due to spills shall be the Contractor's responsibility. The disposition of Contractor generated hazardous waste and excess hazardous materials are the Contractor's responsibility.

3.5.4 Fuel and Lubricants

Storage, fueling and lubrication of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spill and evaporation. Fuel, lubricants and oil shall be managed and stored in accordance with all Federal, State, Regional, and local laws and regulations. Used lubricants and used oil to be discarded shall be stored in marked corrosion-resistant containers and recycled or disposed in accordance with 40 CFR 279, State, and local laws and regulations. There shall be no storage of fuel on the project site. Fuel must be brought to the project site each day that work is performed.

3.5.5 Waste Water

Disposal of waste water shall be as specified below.

a. Waste water from construction activities, such as onsite material processing, concrete curing, foundation and concrete clean-up, water used in concrete trucks, forms, etc. shall not be allowed to enter water ways or to be discharged prior to being treated to remove pollutants. The Contractor shall dispose of the construction related waste water off-Government property in accordance with all Federal, State, Regional and Local laws and regulations.

b. For discharge of ground water, the Contractor shall obtain a State Water Quality Control Division Construction Dewatering Wastewater Discharge permit specific for pumping and discharging ground water prior to surface discharging.

c. Water generated from the flushing of lines after disinfection or disinfection in conjunction with hydrostatic testing shall be discharged into the sanitary sewer with prior approval and notification to Petersen AFB's Environmental Flight Office and Colorado Springs Waste Water Treatment Facility Manager.

3.6 RECYCLING AND WASTE MINIMIZATION

The Contractor shall participate in State and local government sponsored recycling programs. The Contractor is further encouraged to minimize solid waste generation throughout the duration of the project.

3.7 NON-HAZARDOUS SOLID WASTE DIVERSION REPORT

The Contractor shall maintain an inventory of non-hazardous solid waste diversion and disposal of construction and demolition debris. The Contractor shall submit a report to Base Environmental Flight Office through the Contracting Officer on the first working day after each fiscal year quarter, starting the first quarter that non-hazardous solid waste has been generated. The following shall be included in the report:

a. Construction and Demolition (C&D) Debris Disposed = _____ in cubic yards or tons, as appropriate.

b. Construction and Demolition (C&D) Debris Recycled = _____ in cubic yards or tons, as appropriate.

c. Total C&D Debris Generated = _____ in cubic yards or tons, as appropriate.

d. Waste Sent to Waste-To-Energy Incineration Plant (This amount should not be included in the recycled amount) = _____ in cubic yards or tons, as appropriate.

3.8 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

If during excavation or other construction activities any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human historical activities. Upon such discovery or find, the Contractor shall immediately notify the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in impact to or the destruction of these resources. The Contractor shall secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources.

3.9 BIOLOGICAL RESOURCES

The Contractor shall minimize interference with, disturbance to, and damage to fish, wildlife, and plants including their habitat. The Contractor shall be responsible for the protection of threatened and endangered animal and plant species including their habitat in accordance with Federal, State, Regional, and local laws and regulations.

3.10 PREVIOUSLY USED EQUIPMENT

The Contractor shall clean all previously used construction equipment prior to bringing it onto the project site. The Contractor shall ensure that the

equipment is free from soil residuals, egg deposits from plant pests, noxious weeds, and plant seeds. The Contractor shall consult with the USDA jurisdictional office for additional cleaning requirements.

3.11 MAINTENANCE OF POLLUTION FACILITIES

The Contractor shall maintain permanent and temporary pollution control facilities and devices for the duration of the contract or for that length of time construction activities create the particular pollutant. All temporary pollution control measures shall be removed, by Contractor when approved by Contracting Officer.

3.12 MILITARY MUNITIONS

In the event the Contractor discovers or uncovers military munitions as defined in 40 CFR 260, the Contractor shall immediately stop work in that area and immediately inform the Contracting Officer and Security Forces.

3.13 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection and pollution control. The Contractor shall conduct environmental protection/pollution control meetings for all Contractor personnel prior to commencing construction activities. Additional meetings shall be conducted for new personnel and when site conditions change. The training and meeting agenda shall include: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, wetlands, and endangered species and their habitat that are known to be in the area.

3.14 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction in accordance with Contract Clause: "Cleaning Up". The Contractor shall, unless otherwise instructed in writing by the Contracting Officer, obliterate all signs of temporary construction facilities such as haul roads, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. The disturbed area shall be graded, filled and the entire area seeded unless otherwise indicated.

-- End of Section --

WATER QUALITY CONTROL DIVISION
COLORADO DISCHARGE PERMIT SYSTEM APPLICATION
FOR CONSTRUCTION DEWATERING WASTEWATER DISCHARGE

REVISED JULY, 2003

This application is for use by all dischargers engaged in the dewatering of groundwater from a construction site. This application is applicable for coverage under a general or individual permit. For an electronic version of this application please contact the Permits and Enforcement Section at 692-3500.

WATER RIGHTS

The State Engineers Office (SEO) has indicated that any discharge that does not return water directly to surface waters (i.e. land application, rapid infiltration basins, etc.) has the potential for material injury to a water right. As a result, the SEO needs to determine that material injury to a water right will not occur from such activities. To make this judgement, the SEO requests that a copy of all documentation demonstrating that the requirements of Colorado water law have been met, be submitted to their office for review. The submittal should be made as soon as possible to the following address:

Colorado Division of Water Resources
1313 Sherman St. Rm 818
Denver, Colorado 80203

Should there be any questions on the issue of water rights, the SEO can be contacted at (303) 866-3581. It is important to understand that any CDPS permit issued by the Water Quality Control Division **does not constitute a water right. Issuance of a CDPS permit does not negate the need to also have the necessary water rights in place.** It is also important to understand that even if the activity has an existing CDPS permit, there is no guarantee that the proper water rights are in place.

GENERAL INSTRUCTIONS

Application Due Dates: At least **thirty days** prior to the anticipated date of discharge, the owner (or operator if the owner does not operate the facility) of the facility shall submit an application as provided by the Water Quality Control Division (the "Division").

Permit Fee: For all permits issued for less than one year the permit fee will be $148.00 per quarter, with a minimum fee payment of one quarter. All quarters will begin on the date the permit is issued. For those permits issued for 12 months or longer the fee is $595.00. You will receive your bill at the time of issuance for your certification. Payment is due upon receipt.

Application Completeness: All items of the application must be completed accurately and in their entirety or the application will be deemed incomplete, and processing of the permit will not begin until all information is received. If you have questions on completing this application, you may contact the Division at (303) 692-3500. **Two copies** of the completed application shall be submitted, only to:

If you need an extension of this permit you are required to **prepay** for all additional quarters requested, and the request for extension must be made 30 days prior to the expiration date shown on your permit.
The Certification and Authorization to discharge will cease on the expiration date shown on your permit if additional quarters requested are not prepaid.

Colorado Department of Health
WQCD-P-B2
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

SPECIFIC INSTRUCTIONS

Item 1 - Self explanatory.

Item 2 - Self explanatory.

Item 3 - This item is needed to identify who will receive and be responsible for the permit.

Item 4 - All owners of the property must be identified.

Item 5 - Self explanatory.

Item 6 - Self-explanatory

Item 7 - If the discharge point will be moved during the life of the permit, the permit will contain conditions such that the discharge point may be moved without the need for modification.

Item 8 - This map is intended to serve as an area map attachment to the permit. A legible submittal is required. **This map must be on paper 8 ½ by 11 inches.**

Item 9 - This is a facility sketch showing the discharge points, for inclusion in the permit. A legible submittal is required on paper **8 ½x 11**.

Item 10, 11, and 12 - Self explanatory.

Item 13 - List in the table the outfalls expected, type of filtration you will use, the flows expected and the receiving stream. You may estimate the flow contribution if no data is available. Be sure to include the identity of the receiving water. Receiving waters are any waters of the state of Colorado. These include any and all surface waters that are contained in or flow in or through the state of Colorado (except for water withdrawn for use until use and treatment have been completed). This definition includes all water courses, even if they are usually dry.

Item 14 - Self explanatory. Specify the sample type and standard methods.

Item 15 - If land application, defined as any discharge being applied to the land, is practiced or proposed the Division needs appropriate information to understand the operation and make a judgment as to possible impact on ground or surface waters. If not identified elsewhere, identify the nearest surface waters or dry stream bed.

Item 16, 17, 18, 19, 20, and 21 - Self explanatory.

Item 22 - The application form shall be signed as follows:

(a) In the case of corporations, by a principal executive officer of at least the level of vice-president or his or her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge described in the application originates.

(b) In the case of a proprietorship, by a general partner.

(c) In the case of a sole proprietorship, by the proprietor.

(d) In the case of municipal, state, or other public facility, by either a principal executive officer, ranking elected official, or duly authorized employee.

Either the owner(s) or the operator(s) shall sign the form.

CONSTRUCTION DEWATERING- INDUSTRIAL WASTEWATER DISCHARGE APPLICATION	FOR AGENCY USE ONLY		
	PERMIT NUMBER		
	C O - 0 7		
	DATE RECEIVED		
	YEAR	MONTH	DAY

Do not attempt to complete this form before reading the accompanying instructions. PLEASE PRINT OR TYPE

☐ NEW OR ☐ RENEWAL - EXISTING PERMIT NO. _____

1. Is application for a short-term certification (certification will only be effective for no more than 1 year after issuance)? ☐
   OR
   Is application for a regular term certification (certification will be effective for 5 years from issuance)? ☐

2. Specify whether owner or operator is making application for the permit: ☐ OWNER ☐ OPERATOR

3. Name, address, and telephone number of the **person or persons that are responsible for the permit, and to whom this permit should be sent. Note**: The person or persons that are responsible for the permit will be required to sign Item 21 of this application.

   Company Name _____

   Individual's Name_____

   Project Name_____

   FEDERAL TAXPAYER I.D. NUMBER ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

   Facility Name _____

   Mailing Address_____

   Street Address _____

   City _____State____ E-mail _____

   County _____Zip Code _____

   Telephone Number ( )_____ Fax. No. ( )_____

4. Name, address, and telephone number of the <u>owner</u> of the facility producing the discharge.

   Property Owner(s) _____

   Facility Name _____

   Mailing Address_____

   Street Address_____

   City_____ State ____ E-mail _____

   County _____ Zip Code _____

   Telephone Number ( ) _____Fax. No. ( ) _____

5. Location of facility_____

Longitude_____ Latitude_____

Legal description (Township, Range, 1/4 Section)_____

Street _____ County_____

City_____ State_____ Zip Code _____

Local Contact (familiar with facility) _____

Telephone Number ( )_____ Title _____

Please provide directions to the operation from a nearby town or landmark.

_____

_____

6. Type of activity: e.g., building construction, general construction, highway bridge and tunnel construction, etc. and a description of activities being performed, including construction schedule and months of operation. Specify source(s) of wastewater to be discharged (i.e. groundwater, storm water runoff).

_____

_____

_____

_____

7. Do you anticipate the need for changing or adding the discharge point(s) as construction progresses? If so, briefly explain.

_____

_____

8. A location map designating the facility property and discharge points shall be submitted. The map shall be from a 7 or 15 minute USGS quad sheet or a map of comparable scale. A north arrow shall be shown. Any public water supply intakes within a 5 mile radius of the facility shall also be identified, if known (see item 20). **This map must be on paper 8 ½x 11 inches**.

9. A legible sketch of the site shall be submitted and include appurtenant facilities (buildings, ponds, diversion ditches, etc.), stream location, numbered discharge points, sampling and flow monitoring points. Sketch shall be on paper 8 x 11 inches. Label the outfalls on the sketch to correspond with the numbers listed in 10. **This map must be on paper 8 ½x 11 inches**

10. Will the discharge go to a ditch, storm sewer, or any other type of conveyance? ☐ YES ☐ NO
If YES, submit documentation that the owner of the ditch, storm sewer, or any other type of conveyance, allows this discharge. **No certification will be processed unless documentation of approval is received.**

11. Method of flow measurement for each discharge (i.e. 90° v-notch weir, pump capacity, parshall flume, etc.). Designate whether currently installed or proposed.

_____

_____

12. Do you have bulk storage of diesel fuel, gasoline, solvents, or other hazardous materials on site? ☐ YES ☐ NO

13. For each outfall provide in the table below, include the following : (1) The average and maximum flow expected from each outfall; (2) A discussion of the method used to meet permit effluent limits, (3) The name of the receiving stream. **Indicate flow rates as gpm or MGD.**

OUTFALL NUMBER	TREATMENT AND FLOW			RECEIVING STREAM
	TREATMENT	AVG. FLOW	MAX. FLOW	

14. Analytical data for the following parameters shall be submitted from at least one sampling of each discharge point. See instructions. If no water is currently available for analysis, so indicate.

_____Alkalinity (mg/l) _____ Oil & Grease (mg/l)

_____pH (s.u.) _____COD (mg/l)

_____Total Suspended Solids (mg/l) _____Total Dissolved Solids (mg/l)

_____No water to analyze at this time.

The Division may request analysis of other parameters once the application has been reviewed.

Note to the applicant: If the Division requests a representative analysis of the water which will be discharged, the application process time may be lengthened.

15. Is or will land application of any wastewater be practiced for purposes other than reclamation or dust control? ☐ YES ☐ NO

Will there be a discharge from this area? ☐ YES ☐ NO

16. Is this operation located within one mile of a landfill, or any mine or mill tailings? ☐ YES ☐ NO

Will dewatering take place on the site of an abandoned landfill? ☐ YES ☐ NO

Has the dewatering area been checked for possible groundwater contamination, such as plumes from leaking underground storage tanks, etc?

☐ YES ☐ NO

If YES, please show location of the landfill, tailings, or possible groundwater contamination on the location map (7) or general sketch map (8). Please explain the location, extent of contamination, and possible effect on the groundwater pumping from this facility, please submit analysis of the parameters. **Note: Please contact Water Quality Control Division for the proper parameters to report.**

_____

_____

_____

Note to the applicant: If the Division must request a representative analysis of the water to be discharged, the application process time may be lengthened.

17. Will flocculants (settling agents or chemical additives) be used to treat water prior to discharge? ☐ YES ☐ NO
If YES, specify chemical used and submit Materials Safety Data Sheet (MSDS).

_____
_____
_____

18. Estimate how long the dewatering will last _____Years _____Months.

19. When will construction and dewatering begin? _____

20. Are there downstream water supply intakes within 5 miles of this facility? ☐ YES ☐ NO

If YES, specify name(s) of owners of water supply intake (if known)

_____
_____
_____

21. Do you have any other environmental permits under any of the following programs?

Permit Name	Yes	No	Applied For, Date	Permit No.
Colorado Division of Minerals and Geology (formerly MLRD)				
Underground Injection Control				
Dredge or fill permit under Section 404 of the Clean Water Act (CWA) (Army Corps of Engineers)				
Resource Conservation and Recovery Act (RCRA)				
CDPS Stormwater				
Colorado State Air Pollution Emission				
Other				

22. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Signature of Owner(s)_____ Date Signed_____

Name (printed) _____Title_____

Signature of Operator_____Date Signed_____

Name (printed)_____ Title_____

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SECTION 01451A

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1/03; Omaha Revision 1/04

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SECTION 01451A

CONTRACTOR QUALITY CONTROL
1/03; Omaha Revision 1/04

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM D 3740	(2001) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM E 329	(2000b) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

U.S. ARMY CORPS OF ENGINEERS (USACE)

ER 1110-1-12	(1993) Quality Management

1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Pricing Schedule.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330SUBMITTAL PROCEDURES:

Administrative Submittals

Contractor Quality Control Plan;

The written site-specific Contractor Quality Control Plan as specified herein.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all design-construction and construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence.

The site project superintendent will be held responsible for the quality of work on the job. The site project superintendent is subject to removal by the Contracting Officer for non-compliance with either the established quality control system or quality requirements specified in this contract. The site project superintendent in this context shall be the highest-level manager responsible for the overall construction activities at the site, including quality and production. The site project superintendent shall maintain a physical presence at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.2 QUALITY CONTROL PLAN

The Contractor shall furnish for review by the Government, not later than 10 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The Government will consider an interim plan for the first 30 days of operation. Design and construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

3.2.1 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all design and construction operations, both onsite and offsite, including work by subcontractors, designers of record, consultants, architect/engineers (AE), fabricators, suppliers, and purchasing agents:

a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the Project Manager or someone higher in the Contractor's organization. Project Manager in this context shall mean the individual with responsibility for the overall management of the project, including quality and production.

b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.

c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.

d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, designers of record, consultants, architect engineers (AE), offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.

e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities approved by the Contracting Officer shall be used.)

f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.

g. Procedures for tracking design and construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.

h. Reporting procedures, including proposed reporting formats.

i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

3.2.2 Additional Requirements for Design Quality Control (DQC) Plan

The followng additional requirements apply to the Design Quality Control (DQC) plan:

(1) The Contractor's QCP Plan shall provide and maintain a Design Quality Control (DQC) Plan as an effective quality control program which will assure that all services required by this design-build contract are performed and provided in a manner that meets professional architectural and engineering quality standards. As a minimum, all documents shall be technically reviewed by

competent, independent reviewers identified in the DQC Plan. The same element that produced the product shall not perform the independent technical review (ITR). The Contractor shall correct errors and deficiencies in the design documents prior to submitting them to the Government.

(2) The Contractor shall include the design schedule in the master project schedule, showing the sequence of events involved in carrying out the project design tasks within the specific contract period. This should be at a detailed level of scheduling sufficient to identify all major design tasks, including those that control the flow of work. The schedule shall include review and correction periods associated with each item. This should be a forward planning as well as a project monitoring tool. The schedule reflects calendar days and not dates for each activity. If the schedule is changed, the Contractor shall submit a revised schedule reflecting the change within 7 calendar days. The Contractor shall include in the DQC Plan the discipline-specific checklists to be used during the design and quality control of each submittal. These completed checklists shall be submitted at each design phase as part of the project documentation. Example checklists can be found in ER 1110-1-12.

(3) The DQC Plan shall be implemented by an Design Quality Control Manager who has the responsibility of being cognizant of and assuring that all documents on the project have been coordinated. This individual shall be a person who has verifiable engineering or architectural design experience and is a registered professional engineer or architect. The Design Quality Control Manager shall be assigned as Design Quality Control Manager, but may have duties as Design Project Manager in addition to quality control. The Contractor shall notify the Contracting Officer, in writing, of the name of the individual, and the name of an alternate person assigned to the position.

The Contracting Officer will notify the Contractor in writing of the acceptance of the DQC Plan. After acceptance, any changes proposed by the Contractor are subject to the acceptance of the Contracting Officer.

(4) The DQC Manager shall report to the overall Project Manager of the Contractor for the design-build contract. The Project Manager will be held responsible for the quality of design on the contract and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the contract.

3.2.3 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of design and construction. Acceptance is conditional and will be predicated on satisfactory performance during the design and construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.4 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the

Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING

After the Postaward Conference, before start of design or construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 10 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, design activities, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Contractor and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager, a Design Quality Control Manager, and sufficient number of additional qualified personnel to ensure safety and contract compliance. Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization. The Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff shall be subject to acceptance by the Contracting Officer. The Contractor shall provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Complete records of all letters, material submittals, shop drawing submittals, schedules and all other project documentation shall be promptly furnished to the CQC organization by the Contractor. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a graduate engineer, graduate architect, or a graduate of construction management, with a minimum of 2 years construction experience on construction similar to this contract or a construction person with a minimum of 5 years in related work. This CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. The CQC System Manager shall be assigned no other duties . An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's

absence. The requirements for the alternate shall be the same as for the designated CQC System Manager.

3.4.3 CQC Personnel

A staff shall be maintained under the direction of the CQC system manager to perform all QC activities. The staff must be of sufficient size to ensure adequate QC coverage of all work phases, work shifts, and work crews involved in the construction. These personnel may perform other duties, but must be fully qualified by experience and technical training to perform their assigned QC responsibilities and must be allowed sufficient time to carry out these responsibilities. The QC plan will clearly state the duties and responsibilities of each staff member. Other technical specifications may specify individuals for maintaining quality control for specific areas of work. These individuals shall be under the direction of the CQC System Manager. The Contractor shall identify a separate Design Quality Control Manager who is a Registered Architect or Professional Engineer. This DQC Manager is considered part of the Contractor's Quality Control staff but shall report directly to the overall Project Manager for the Contractor for the design-build contract.]

3.4.4 Additional Requirement

In addition to the above experience and/or education requirements the CQC System Manager shall have completed the course entitled "Construction Quality Management For Contractors". This course is periodically offered at each of the four area offices in the Omaha District according to the following revolving training schedule:.

Badger Area	First Session	Between 15 & 25 April
	Second Session	Between 15 & 25 October
Point of Contact	Roy Brewer	(319) 753-1386
Black Hills Area	First Session	Between 1 & 10 March
	Second Session	Between 1 & 10 September
Point of Contact	Dwight Pochant	(605) 923-2983
Fort Crook Area	First Session	Between 15 & 25 January
	Second Session	Between 15 & 25 July
Point of Contact	Al Kreisler	(402) 293-2540
Rocky Mountain	First Session	Between 1 & 10 June
	Second Session	Between 1 & 10 December
Point of Contact	Paul Jendzejec	(719) 556-4184

The exact date and location for the sessions will be determined approximately 30 days in advance of the training. The cost of training is presently established at $50 to be paid by each student in advance of the training. For information about a particular session, the best source is the point of contact listed above.

3.4.5 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5 SUBMITTALS AND DELIVERABLES

Submittals, if needed, shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals and deliverables are in compliance with the contract requirements. [When Section 15950A HEATING, VENTILATING AND AIR CONDITIONING (HVAC) CONTROL SYSTEMS; 15951A DIRECT DIGITAL CONTROL FOR HVAC; 15990A TESTING, ADJUSTING, AND BALANCING OF HVAC SYSTEMS; or 15995A COMMISSIONING OF HVAC SYSTEMS are included in the contract, the submittals required by those sections shall be coordinated with Section 01330 SUBMITTAL PROCEDURES to ensure adequate time is allowed for each type of submittal required.]

3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of the construction work as follows:

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

a. A review of each paragraph of applicable specifications, reference codes, and standards. Prior to the preparatory meeting for each definable feature of work, the Contractor shall provide all technical references (i.e. building codes, life safety codes, etc.) referenced in the project specifications for feature(s) of work being addressed at the preparatory meeting. These technical references shall be onsite and available for use by Contractor and Government personnel before the preparatory meeting is held and maintained until the feature(s) of work is/are accepted by the Government.

b. A review of the contract drawings.

c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.

d. Review of provisions that have been made to provide required control inspection and testing.

e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.

f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.

g. A review of the appropriate activity hazard analysis to assure safety requirements are met.

h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.

i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.

j. Discussion of the initial control phase.

k. The Government shall be notified at least 48 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.

b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.

c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.

d. Resolve all differences.

e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.

f. The Government shall be notified at least 48 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.

g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to

the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if: the quality of on-going work is unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

3.7 TESTS

3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. The Contractor shall perform the following activities and record and provide the following data:

a. Verify that testing procedures comply with contract requirements.

b. Verify that facilities and testing equipment are available and comply with testing standards.

c. Check test instrument calibration data against certified standards.

d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.

e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.2 Testing Laboratories

3.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740

and ASTM E 329.

3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed the actual cost for the recheck to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.3 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials shall be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Resident or Area (as directed) Office.

Coordination for each specific test, exact delivery location, and dates will be made through the Resident or Area (as directed) Office.

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

Near the end of the work, or any increment of the work established by a time stated in the SPECIAL CONTRACT REQUIREMENTS Clause, "Commencement, Prosecution, and Completion of Work", or by the specifications, the CQC Manager shall conduct an inspection of the work. A punch list of items which do not conform to the approved drawings and specifications shall be prepared and included in the CQC documentation, as required by paragraph DOCUMENTATION. The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2 Pre-Final Inspection

The Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

a. Contractor/subcontractor and their area of responsibility.

b. Operating plant/equipment with hours worked, idle, or down for repair.

c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.

d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase shall be identified (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action.

e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.

f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.

g. Offsite surveillance activities, including actions taken.

h. Job safety evaluations stating what was checked, results, and instructions or corrective actions. Include information identified by the "Responsible Individual(s)" for Safety as outlined in SECTION 01400, SPECIAL SAFETY REQUIREMENTS.

i. Instructions given/received and conflicts in plans and/or specifications.

j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Contracting Officer's Representative on the first day following the date(s) covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

3.10 SAMPLE FORMS

Sample forms enclosed at the end of this section.

3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

_____
(FIRM NAME)

DAILY QUALITY CONTROL REPORT

Daily Report No.: _____ DATE: _____
Contract No. _____
Project Title & Location:
_____
Weather: ____ Precipitation: _____ in. _____ Temp:____ Min. ____ Max. ____

1. Contract/Subcontractors and Area of Responsibility:

NUMBER:	TRADE	HOURS	EMPLOYER	LOCATION/DESCRIPTION WORK

2. Operating Plant or Equipment. (Not hand tools)

Plant/Equipment	Date of Arrival/Departure	Date of Safety Check	Hours Used	Hours Idle	Hours Repair

3. Work Performed Today: (Indicate location and description of work performed by prime and/or subcontractors. When network analysis is used, identify work by NAS activity number).

4. Control Activities Performed:
   Preparatory Inspections: (Identify feature of work and attach minutes).
   Initial Inspections: (Identify feature of work and attach minutes).
   Follow-Up Inspections: (List inspections performed, results of inspection compared to specification requirements, and corrective actions taken when deficiencies are noted).

5. Tests Performed and Test Results: (Identify test requirement by paragraph number in specifications and/or sheet number in plans).

6. Material Received: (Note inspection results and storage provided).

7. Submittals Reviewed:

(a) Submittal No.	(b) Spec/Plan Reference	(c) By Whom	(d) Action

8. Offsite Surveillance Activities, Including Action Taken:

_____
_____
_____
_____
_____
_____
_____
_____

9. Job Safety: (List items checked, results, instructions and corrective actions taken).

_____
_____
_____
_____
_____
_____
_____
_____
_____

10. Remarks: (Instructions received or given. Conflict(s) in Plans and/or specifications. Delays encountered.).

_____
_____
_____
_____
_____
_____
_____

Contractor's Verification: On behalf of the Contractor, I certify this report is complete and correct, and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as may be noted above.

_____
CQC System Manager Date

-- End of Section --

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SECTION 01565

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SECTION 01565

(FEDERAL FACILITIES COLORADO) NPDES PERMIT REQUIREMENTS FOR STORM WATER DISCHARGES FROM CONSTRUCTION SITES

1/04

Attachments:

NPDES General Permit For Storm Water Discharges From Construction Activities
Notice of Intent
Notice of Termination

PART 1 GENERAL

1.1 REFERENCES (Not Applicable)

1.2 SUBMITTALS (Not Applicable)

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL

The Contractor shall be responsible for implementing the terms and requirements of the attached Storm Water General Permit For Construction Activities (Permit No. COR10000F) as specified below. The Government and the Contractor shall be considered co-permittees. The Government has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications. The Contractor shall have day-to-day operational control of those activities which are necessary to ensure compliance with the requirements specified herein. The Contractor shall be responsible for all submissions to the EPA and shall retain the official copy of all documents pertaining to compliance with the permit during construction. The project site is not located in designated critical habitat and there are no known "listed species" located in the project area.

3.2 IMPLEMENTATION

3.2.1 Notice of Intent

The Contractor shall complete and sign a Notice of Intent (NOI) in accordance with NPDES Permit No. COR10000F. The Contractor's NOI shall be furnished to the Contracting Officer at least 14 calendar days prior to the commencement of construction activities. The Contractor shall submit the Contractor's and Government's NOI's to the EPA. The Contractor shall not submit the NOI's to the EPA until the Storm Water Pollution Prevention Plan has been accepted. The Contractor may not begin land disturbance activities until authorized by the Contracting Officer.

3.2.2 Storm Water Pollution Prevention Plan

3.2.2.1 General

The Contractor shall be responsible for preparing the Storm Water Pollution Prevention Plan (SWPPP). The Contractor shall be responsible for implementing, maintaining and updating the SWPPP (including Site Map) during construction. Unless otherwise indicated, the Contractor shall be responsible for implementing all measures described in the SWPPP. The Contractor shall maintain the following records and attach to the SWPPP: the dates when major grading activities occur; the dates when construction activities temporarily or permanently cease on a portion of the site; and the dates when stabilization measures are initiated. The Contractor shall keep the official plan at the site. The SWPPP shall be signed by the Government and the Contractor. If major changes to the SWPPP are required during construction, the SWPPP shall be recertified by the Government and the Contractor.

3.2.2.2 Acceptance of SWPPP

Acceptance of the SWPPP is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes to the SWPPP if the Contracting Officer determines that environmental protection requirements are not being met.

3.2.2.3 Notification of Changes

After acceptance of the SWPPP, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.2.3 Posting Notice

The Contractor shall post a copy of the completed Notice of Intent as submitted to the EPA Storm Water Notice Processing Center. The NOI shall be posted conspicuously near the main entrance of the construction site.

3.2.4 Inspections and Reporting

The Contractor shall be responsible for all inspections specified in the SWPPP and the general permit. The Contractor shall also prepare and sign all reports summarizing the inspections as required by the SWPPP and the general permit. Copies of inspection reports shall be attached to the SWPPP. The Contractor shall notify the Contracting Officer within 24 hours if an inspection identifies any incidents of non-compliance with the SWPPP and the general permit.

3.2.5 Maintenance

The Contractor shall be responsible for maintaining all erosion and sediment control measures and other protective measures identified in the SWPPP in an effective operating condition. The Government reserves the right to require the Contractor to perform maintenance on erosion and sediment control measures and other protective measures if the Contracting Officer determines that environmental protection requirements are not being met.

3.2.6 Notice of Termination

The Contractor shall establish a stand of grass in all disturbed areas of the project not otherwise surfaced and shall meet the requirements for "Final Stabilization" as defined in the permit prior to terminating permit coverage. The Contractor shall notify the Contracting Officer within 2 working days after final stabilization on all portions of the site has been achieved in accordance with Part 5.1 of the permit. The Contractor shall complete and sign a Notice of Termination (NOT) in accordance with NPDES Permit No. COR10000F. The Contractor's NOT shall be furnished to the Contracting Officer within 5 calendar days after final stabilization (as defined in the permit) has been achieved on all portions of the site. The Contractor shall submit the Contractor's and Government's NOTs to the EPA.

3.2.7 Retention of Records

The Government shall be responsible for retaining copies of the SWPPP and all reports in accordance with NPDES Permit No. COR10000F.

3.2.8 Continuation of Expired Permit

If the current NPDES general permit expires prior to completion of construction, the Contractor shall comply with the conditions of the new permit.

-- End of Section --

NPDES General Permit for Storm Water Discharges From Construction Activities

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National Pollutant Discharge Elimination System
General Permit for Discharges from
Large and Small Construction Activities

In compliance with the provisions of the Clean Water Act, 33 U.S.C. §1251 et. seq., (hereafter CWA or the Act), as amended by the Water Quality Act of 1987, P.L. 100-4, operators of large and small construction activities that are described in Subpart 1.3 of this National Pollutant Discharge Elimination System (NPDES) general permit, except for those activities excluded from authorization of discharge in Subpart 1.3.C of this permit are authorized to discharge pollutants to waters of the United States in accordance with the conditions and requirements set forth herein. Permit coverage is required from the "commencement of construction activities" until "final stabilization" as defined in Appendix A.

This permit shall become effective on July 1, 2003.

This permit and the authorization to discharge shall expire at midnight, July 1, 2008.

Signed:

Linda M. Murphy, Director, Office of Ecosystem Protection
EPA Region 1

Kevin Bricke, Acting Director, Division of Environmental Planning and Protection
EPA Region 2

Carlos E. O'Neill, P.E., Acting Division Director, Caribbean Environmental Protection Division
EPA Region 2

John M. Capacasa, Director, Water Protection Division
EPA Region 3

Rebecca Harvey, Chief, NPDES Program Branch
EPA Region 5

Miguel I. Flores, Director, Water Quality Protection Division
EPA Region 6

Leo J. Alderman, Director, Water, Wetlands, and Pesticides Division
EPA Region 7

Stephen S. Tuber, Assistant Regional Administrator, Office of Partnerships and Regulatory Assistance
EPA Region 8

Nancy Woo, Acting Director, Water Division
EPA Region 9

Randall F. Smith, Director, Office of Water
EPA Region 10

The signatures are for the permit conditions in Parts 1 through 9 and Appendices A through G and for any additional conditions which apply to facilities located in the corresponding state, Indian country, or other area.

PART 1: COVERAGE UNDER THIS PERMIT

1.1 Introduction

This Construction General Permit (CGP) authorizes storm water discharges from large and small construction activities that result in a total land disturbance of equal to or greater than one acre, where those discharges enter surface waters of the United States or a municipal separate storm sewer system (MS4) leading to surface waters of the United States subject to the conditions set forth in this permit. This permit also authorizes storm water discharges from any other construction activity designated by EPA where EPA makes that designation based on the potential for contribution to an excursion of a water quality standard or for significant contribution of pollutants to waters of the United States. This permit replaces two permits issued in 1998 (63 FR 7858, February 17, 1998 for EPA Regions 1, 2, 3, 7, 8, 9, and 10 and 63 FR 36489, July 6, 1998 for EPA Region 6). Any references to the 1998 CGP in this permit refer to those two permits.

This permit is presented in a reader-friendly, plain language format. This permit uses the terms “you” and “your” to identify the person(s) who owns or operates a “facility” or “activity” as defined in Appendix A and who must comply with the conditions of this permit. This format should allow you, the permittee and operator of a large or small construction activity, to easily locate and understand applicable requirements.

The goal of this permit is to reduce or eliminate storm water pollution from construction activity by requiring that you plan and implement appropriate pollution control practices to protect water quality.

1.2 Permit Area

If your large or small construction activity is located within the areas listed in Appendix B, you may be eligible to obtain coverage under this permit. Permit coverage is actually provided by legally separate and distinctly numbered permits covering each of the areas listed in Appendix B.

1.3 Eligibility

Permit eligibility is limited to discharges from “large” and “small” construction activity as defined in Appendix A or as otherwise designated by EPA. This general permit contains eligibility restrictions, as well as permit conditions and requirements. You may have to take certain actions to be eligible for coverage under this permit. In such cases, you must continue to satisfy those eligibility provisions to maintain permit authorization. If you do not meet the requirements that are a pre-condition to eligibility, then resulting discharges constitute unpermitted discharges. By contrast, if you do not comply with the requirements of the general permit, you may be in violation of the general permit for your otherwise eligible discharges.

A. Allowable Storm Water Discharges

Subject to compliance with the terms and conditions of this permit, you are authorized to discharge pollutants in:

1. Storm water associated with large and small construction activity as defined in Appendix A;
2. Storm water discharges designated by EPA as needing a storm water permit under 40 CFR §122.26(a)(1)(v) or §122.26(b)(15)(ii);
3. Discharges from support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) provided:
    a. The support activity is directly related to the construction site required to have NPDES permit coverage for discharges of storm water associated with construction activity;
    b. The support activity is not a commercial operation serving multiple unrelated construction projects by different operators, and does not operate beyond the completion of the construction activity at the last construction project it supports; and
    c. Appropriate controls and measures are identified in a Storm Water Pollution Prevention Plan (SWPPP) covering the discharges from the support activity areas; and
4. Discharges composed of allowable discharges listed in 1.3.A and 1.3.B commingled with a discharge authorized by a different NPDES permit and/or a discharge that does not require NPDES permit authorization.

B. Allowable Non-Storm Water Discharges

You are authorized for the following non-storm water discharges, provided the non-storm water component of the discharge is in compliance with Subpart 3.5 (Non-Storm Water Discharge Management):

1. Discharges from fire-fighting activities;
2. Fire hydrant flushings;
3. Waters used to wash vehicles where detergents are not used;
4. Water used to control dust in accordance with Subpart 3.4.G;
5. Potable water including uncontaminated water line flushings;
6. Routine external building wash down that does not use detergents;
7. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used;
8. Uncontaminated air conditioning or compressor condensate;
9. Uncontaminated ground water or spring water;
10. Foundation or footing drains where flows are not contaminated with process materials such as solvents;
11. Uncontaminated excavation dewatering;
12. Landscape irrigation.

C. Limitations on Coverage

1. This permit does not authorize post-construction discharges that originate from the site after construction activities have been completed and the site has achieved final stabilization, including any temporary support activity. Post-construction storm water discharges from industrial sites may need to be covered by a separate NPDES permit.
2. This permit does not authorize discharges mixed with non-storm water. This exclusion does not apply to discharges identified in Subpart 1.3.B, provided the discharges are in compliance with Subpart 3.5 (Non-Storm Water Discharge Management).
3. This permit does not authorize storm water discharges associated with construction activity that have been covered under an individual permit or required to obtain coverage under an alternative general permit in accordance with Subpart 4.2.
4. This permit does not authorize discharges that EPA, prior to authorization under this permit, determines will cause, have the reasonable potential to cause, or contribute to an excursion above any applicable water quality standard. Where such a determination is made prior to authorization, EPA may notify you that an individual permit application is necessary in accordance with Subpart 4.2. However, EPA may authorize your coverage under this permit after you have included appropriate controls and implementation procedures in your SWPPP designed to bring your discharge into compliance with water quality standards.
5. *Discharging into Receiving Waters With an Approved Total Maximum Daily Load Analysis*
   a. You are not eligible for coverage under this permit for discharges of pollutants of concern to waters for which there is a total maximum daily load (TMDL) established or approved by EPA unless you incorporate into your SWPPP measures or controls that are consistent with the assumptions and requirements of such TMDL. To be eligible for coverage under this general permit, you must incorporate into your SWPPP any conditions applicable to your discharges necessary for consistency with the assumptions and requirements of such TMDL. If a specific wasteload allocation has been established that would apply to your discharge, you must incorporate that allocation into your SWPPP and implement necessary steps to meet that allocation.
   b. In a situation where an EPA-approved or established TMDL has specified a general wasteload allocation applicable to construction storm water discharges, but no specific requirements for construction sites have been identified in the TMDL, you should consult with the State or Federal TMDL authority to confirm that adherence to a SWPPP that meets the requirements of the CGP will be consistent with the approved TMDL. Where an EPA-approved or established TMDL has not

specified a wasteload allocation applicable to construction storm water discharges, but has not specifically excluded these discharges, adherence to a SWPPP that meets the requirements of the CGP will generally be assumed to be consistent with the approved TMDL. If the EPA-approved or established TMDL specifically precludes such discharges, the operator is not eligible for coverage under the CGP.

6. *Endangered and Threatened Species and Critical Habitat Protection*

   a. Coverage under this permit is available only if your storm water discharges, allowable non-storm water discharges, and storm water discharge-related activities, as defined in Appendix A, are not likely to jeopardize the continued existence of any species that are federally-listed as endangered or threatened ("listed") under the Endangered Species Act (ESA) or result in the adverse modification or destruction of habitat that is federally-designated as critical under the ESA ("critical habitat").

   b. You are not eligible to discharge if the storm water discharges, allowable non-storm water discharges, or storm water discharge-related activities would cause a prohibited "take" of federally-listed endangered or threatened species (as defined under section 3 of the ESA and 50 CFR 17.3), unless such takes are authorized under sections 7 or 10 of the ESA.

   c. Determining Eligibility: You must use the process in Appendix C (ESA Review Procedures) to determine eligibility *PRIOR* to submittal of the Notice of Intent (NOI). You must meet one or more of the following six criteria (A-F) for the entire term of coverage under the permit:

Criterion A. No federally-listed threatened or endangered species or their designated critical habitat are in the project area as defined in Appendix C; or

Criterion B. Formal consultation with the Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the ESA has been concluded and that consultation:

i. Addressed the effects of the project's storm water discharges, allowable non-storm water discharges, and storm water discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat, and
ii. The consultation resulted in either:

a. Biological opinion finding no jeopardy to federally-listed species or destruction/adverse modification of federally-designated critical habitat, or

b. written concurrence from the Service(s) with a finding that the storm water discharges, allowable non-storm water discharges, and storm water discharge-related activities are not likely to adversely affect federally-listed species or federally-designated critical habitat; or

Criterion C. Informal consultation with the Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the ESA has been concluded and that consultation:

i. Addressed the effects of the project's storm water discharges, allowable non-storm water discharges, and storm water discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat, and
ii. The consultation resulted in either:

a. Biological opinion finding no jeopardy to federally-listed species or destruction/adverse modification of federally-designated critical habitat, or

b. written concurrence from the Service(s) with a finding that the storm water discharges, allowable non-storm water discharges, and storm water discharge-related activities are not likely to adversely affect federally-listed species or federally-designated critical habitat; or

Criterion D. The construction activities are authorized through the issuance of a permit under section 10 of the ESA, and that authorization addresses the effects of the storm water discharges, allowable non-storm water discharges, and storm water discharge-related activities on federally-listed species and federally-designated critical habitat; or

Criterion E. Storm water discharges, allowable non-storm water discharges, and storm water discharge-related activities are not likely to adversely affect any federally-listed

threatened or endangered species or result in the destruction or adverse modification of federally-designated critical habitat; or

Criterion F. The project's storm water discharges, allowable non-storm water discharges, and storm water discharge-related activities were already addressed in another operator's valid certification of eligibility under Criteria A-E which included your construction activities and there is no reason to believe that federally-listed species or federally-designated critical habitat not considered in the prior certification may be present or located in the project area. By certifying eligibility under this criterion, you agree to comply with any measures or controls upon which the other operator's certification was based.

You must comply with any applicable terms, conditions, or other requirements developed in the process of meeting the eligibility requirements of the criteria in this section to remain eligible for coverage under this permit. Such terms and conditions must be documented and incorporated into your SWPPP.

7. Historic Properties

[Reserved]

You are reminded that you must comply with applicable state, tribal and local laws concerning the protection of historic properties and places.

1.4 Waivers for Certain Small Construction Activities

Three scenarios exist under which small construction activities (see definition in Appendix A) may be waived from the NPDES permitting requirements detailed in this general permit. These exemptions are predicated on certain criteria being met and proper notification procedures being followed. Details of the waiver options and procedures for requesting a waiver are provided in Appendix D.

PART 2: AUTHORIZATION FOR DISCHARGES OF STORM WATER FROM CONSTRUCTION ACTIVITY

To obtain coverage under this general permit, you, the operator, must prepare and submit a complete and accurate Notice of Intent (NOI), as described in this Part. Discharges are not authorized if your NOI is incomplete or inaccurate or if you were never eligible for permit coverage.

2.1 Authorization to Discharge Date

This permit is effective as of the publication date in the Federal Register and is effective for five years, expiring at midnight on the anniversary of publication in the fifth year.

A. If you submit an NOI during the first 90 days after the issuance date of this permit you are authorized to discharge storm water from construction activities under the terms and conditions of this permit seven (7) calendar days after submittal to EPA of a complete and accurate NOI (i.e., 7 days from date of postmark), except as noted in Subpart 2.1.C.

B. If you submit an NOI after the first 90 days of this permit and prior to the expiration date of this permit, you are authorized to discharge storm water from construction activities under the terms and conditions of this permit seven (7) calendar days after acknowledgment of receipt of your complete NOI is posted on EPA's NPDES website ***http://www.epa.gov/npdes/stormwater/cgp***, except as noted in Subpart 2.1.C.

C. EPA may delay your authorization based on eligibility considerations of Subpart 1.3 (e.g., ESA concerns). In these instances, you are not authorized for coverage under this permit until you receive notice from EPA of your eligibility.

2.2 Notice of Intent Contents

A. You must use the NOI form provided in Appendix E (or a photocopy thereof) and available at **www.epa.gov/npdes/stormwater/cgp**. If EPA makes other NOI forms available (either directly, by public notice, or by making information available on the Internet), you may take advantage of any of those options to satisfy the NOI use requirements of this Subpart.

B. You must provide the following information on the NOI form:

1. The applicable permit number for which you are requesting coverage (See Appendix B);

2. Operator name, address, telephone number, and Employer Identification Number (EIN) as established by the U.S. Internal Revenue Service;
3. Project/Site name, address, county or similar governmental subdivision, and latitude/longitude of your construction project or site;
4. Whether your site is located in Indian country and if so, the name of the Reservation, if applicable;
5. Whether the SWPPP has been prepared in advance of filing of this NOI and the location where the applicable SWPPP may be viewed;
6. Name of the water(s) of the U.S. into which your site discharges;
7. Indication whether your discharge is consistent with the assumptions and requirements of applicable EPA approved or established TMDLs;
8. Estimated dates of commencement of construction activity and final stabilization (i.e., project start and completion dates);
9. Total acreage (to the nearest quarter acre) to be disturbed for which you are requesting permit coverage;
10. Whether any federally-listed threatened or endangered species, or federally-designated critical habitat are in your project area to be covered by this permit, and the basis for certifying eligibility for permit coverage based on the instructions in Appendix C;
11. A certification statement, signed and dated by an authorized representative as defined in Appendix G, Section 11, and the name and title of that authorized representative.

2.3 Submission Deadlines

A. *New Projects:* To obtain coverage under this permit, you must submit a complete and accurate NOI and be authorized consistent with Subpart 2.1 prior to your commencement of construction activities.

B. *Permitted Ongoing Projects (only applicable for first 90 days after this permit is issued):* If you previously received authorization to discharge for your project under the 1998 CGP and you wish to continue coverage under this permit:

1. Except as noted in 2.3.B.2, you must:
    1. Submit an NOI within 90 days of the issuance date of this permit, and
    2. Until you are authorized under this permit consistent with Subpart 2.1, comply with the terms and conditions of the 1998 CGP under which you were previously authorized.
2. If you meet the termination of coverage requirements in accordance with Subpart 5.1 within 90 days of the issuance date of this permit (e.g., construction will be finished and final stabilization achieved) you must:
    1. Submit an NOT consistent with the 2003 CGP using the NOT form provided in Appendix F, and
    2. Until coverage is no longer required, comply with the terms and conditions of the 1998 CGP under which you were previously authorized.

C. *Unpermitted Ongoing Projects (only applicable for first 90 days after this permit is issued):* If you previously did not receive authorization to discharge for your project under the 1998 CGP and you wish to obtain coverage under this permit:

1. Except as noted in 2.3.C.2, you must:
    1. Submit an NOI within 90 days of the issuance date of this permit, and
    2. Until you are authorized under this permit consistent with Subpart 2.1, comply with an interim Storm Water Pollution Prevention Plan (SWPPP) consistent with the 1998 CGP.
2. If you meet the termination of coverage requirements in accordance with Subpart 5.1 within 90 days of the issuance date of this permit (e.g., construction will be finished and final stabilization achieved) you must comply with an interim Storm Water Pollution Prevention Plan (SWPPP) consistent with the 1998 CGP until permit coverage is no longer required.

D. *Late Notifications:* Operators are not prohibited from submitting NOIs after initiating clearing, grading, excavation activities, or other construction activities. When a late NOI is submitted, authorization for discharges occurs consistent with Subpart 2.1. The Agency reserves the right to take enforcement action for any unpermitted discharges or permit noncompliance that occur between the commencement of construction and discharge authorization.

2.4 Where to Submit

A. Except as noted in Subpart 2.3.B, you must send your complete and accurate NOI to EPA at one of the following addresses:

For Regular U.S. Mail Delivery:
EPA Storm Water Notice Processing Center
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

For Overnight/Express Mail Delivery:
EPA Storm Water Notice Processing Center
Room 7420
U.S. EPA
1201 Constitution Avenue, NW
Washington, DC 20004

B. In lieu of Subpart 2.4.A, when available, you may submit your NOI using EPA's electronic NOI system (i.e., eNOI) as detailed at www.epa.gov/npdes/stormwater/cgp.

PART 3: STORM WATER POLLUTION PREVENTION PLANS (SWPPPS)

3.1 Storm Water Pollution Prevention Plan Framework

A. A SWPPP must be prepared prior to submission of an NOI as required in Part 2. At least one SWPPP must be developed for each construction project covered by this permit and such SWPPP must be prepared in accordance with good engineering practices.

B. The SWPPP must:

1. Identify all potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges from the construction site;
2. Describe practices to be used to reduce pollutants in storm water discharges from the construction site; and
3. Assure compliance with the terms and conditions of this permit.

C. Once a definable area has been finally stabilized, you may mark this on your SWPPP and no further SWPPP or inspection requirements apply to that portion of the site (e.g., earth-disturbing activities around one of three buildings in a complex are done and the area is finally stabilized, one mile of a roadway or pipeline project is done and finally stabilized, etc).

D. You must implement the SWPPP as written from commencement of construction activity until final stabilization is complete.

3.2 Requirements for Different Types of Operators

You may meet one or both of the operational control components in the definition of operator found in Appendix A. Subpart 3.2.C applies to all permittees having control over only a portion of a construction site.

A. If you have operational control over construction plans and specifications, you must ensure that:

1. The project specifications meet the minimum requirements of this Subpart and all other applicable permit conditions;
2. The SWPPP indicates the areas of the project where the operator has operational control over project specifications, including the ability to make modifications in specifications;
3. All other permittees implementing portions of the SWPPP (or their own SWPPP) who may be impacted by a change to the construction plan are notified of such changes in a timely manner; and
4. The SWPPP indicates the name of the party(ies) with day-to-day operational control of those activities necessary to ensure compliance with the SWPPP or other permit conditions.

B. If you have operational control over day-to-day activities, you must ensure that:

1. The SWPPP meets the minimum requirements of this Subpart and identifies the parties responsible for implementation of control measures identified in the plan;
2. The SWPPP indicates areas of the project where you have operational control over day-to-day activities;
3. The SWPPP indicates the name of the party(ies) with operational control over project specifications (including the ability to make modifications in specifications).

C. If you have operational control over only a portion of a larger project (e.g., one of four homebuilders in a subdivision), you are responsible for compliance with all applicable terms and conditions of this permit as it relates to your activities on your portion of the construction site, including protection of endangered species, critical habitat, and historic properties, and implementation of best management practices (BMPs) and other controls required by the SWPPP. You must ensure either directly or through coordination with other permittees, that your activities do not render another party's pollution control ineffective. You must either implement your portion of a common SWPPP or develop and implement your own SWPPP.

For more effective coordination of BMPs and opportunities for cost sharing, a cooperative effort by the different operators at a site to prepare and participate in a comprehensive SWPPP is encouraged. Individual operators at a site may, but are not required to, develop separate SWPPPs that cover only their portion of the project provided reference is made to other operators at the site. In instances where there is more than one SWPPP for a site, cooperation between the permittees is encouraged to ensure the storm water discharge controls and other measures are consistent with one another (e.g., provisions to protect listed species and critical habitat).

3.3 Pollution Prevention Plan Contents: Site and Activity Description

A. The SWPPP must identify all operators for the project site, and the areas of the site over which each operator has control.

B. The SWPPP must describe the nature of the construction activity, including:

1. The function of the project (e.g., low density residential, shopping mall, highway, etc.);
2. The intended sequence and timing of activities that disturb soils at the site;
3. Estimates of the total area expected to be disturbed by excavation, grading, or other construction activities, including dedicated off-site borrow and fill areas; and
4. A general location map (e.g., USGS quadrangle map, a portion of a city or county map, or other map) with enough detail to identify the location of the construction site and waters of the United States within one mile of the site.

C. The SWPPP must contain a legible site map, showing the entire site, identifying:

1. Direction(s) of storm water flow and approximate slopes anticipated after major grading activities;
2. Areas of soil disturbance and areas that will not be disturbed;
3. Locations of major structural and nonstructural BMPs identified in the SWPPP;
4. Locations where stabilization practices are expected to occur;
5. Locations of off-site material, waste, borrow or equipment storage areas;
6. Locations of all waters of the United States (including wetlands);
7. Locations where storm water discharges to a surface water; and
8. Areas where final stabilization has been accomplished and no further construction-phase permit requirements apply.

D. The SWPPP must describe and identify the location and description of any storm water discharge associated with industrial activity other than construction at the site. This includes storm water discharges from dedicated asphalt plants and dedicated concrete plants, that are covered by this permit.

3.4 Pollution Prevention Plan Contents: Controls to Reduce Pollutants

A. The SWPPP must include a description of all pollution control measures (i.e., BMPs) that will be implemented as part of the construction activity to control pollutants in storm water discharges. For each major activity identified in the project description the SWPPP must clearly describe appropriate control measures, the general sequence during the construction process in which the measures will be implemented, and which operator is responsible for the control measure's implementation.

B. The SWPPP must include a description of interim and permanent stabilization practices for the site, including a schedule of when the practices will be implemented. Site plans should ensure that existing vegetation is preserved where possible and that disturbed portions of the site are stabilized. Use of impervious surfaces for stabilization should be avoided.

C. The following records must be maintained as part of the SWPPP:

   1. Dates when major grading activities occur;
   2. Dates when construction activities temporarily or permanently cease on a portion of the site; and
   3. Dates when stabilization measures are initiated.

D. The SWPPP must include a description of structural practices to divert flows from exposed soils, retain/detain flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Placement of structural practices in floodplains must be avoided to the degree practicable.

E. The SWPPP must include a description of all post-construction storm water management measures that will be installed during the construction process to control pollutants in storm water discharges after construction operations have been completed. Structural measures should be placed on upland soils to the degree practicable. Such measures must be designed and installed in compliance with applicable federal, local, state or tribal requirements.

F. The SWPPP must describe measures to prevent the discharge of solid materials, including building materials, to waters of the United States, except as authorized by a permit issued under section 404 of the CWA.

G. The SWPPP must describe measures to minimize, to the extent practicable, off-site vehicle tracking of sediments onto paved surfaces and the generation of dust.

H. The SWPPP must include a description of construction and waste materials expected to be stored on-site with updates as appropriate. The SWPPP must also include a description of controls, including storage practices, to minimize exposure of the materials to storm water, and spill prevention and response practices.

I. The SWPPP must include a description of pollutant sources from areas other than construction (including storm water discharges from dedicated asphalt plants and dedicated concrete plants), and a description of controls and measures that will be implemented at those sites to minimize pollutant discharges.

3.5 Non-Storm Water Discharge Management

The SWPPP must identify all allowable sources of non-storm water discharges listed in Subpart 1.3.B of this permit, except for flows from fire fighting activities, that are combined with storm water discharges associated with construction activity at the site. Non-storm water discharges should be eliminated or reduced to the extent feasible. The SWPPP must identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.

3.6 Maintenance of Controls

A. All erosion and sediment control measures and other protective measures identified in the SWPPP must be maintained in effective operating condition. If site inspections required by Subpart 3.10 identify BMPs that are not operating effectively, maintenance must be performed as soon as possible and before the next storm event whenever practicable to maintain the continued effectiveness of storm water controls.

B. If existing BMPs need to be modified or if additional BMPs are necessary for any reason, implementation must be completed before the next storm event whenever practicable. If implementation before the next storm event is impracticable, the situation must be documented in the SWPPP and alternative BMPs must be implemented as soon as possible.

C. Sediment from sediment traps or sedimentation ponds must be removed when design capacity has been reduced by 50 percent.

3.7 Documentation of Permit Eligibility Related to Endangered Species

The SWPPP must include documentation supporting a determination of permit eligibility with regard to Endangered Species, including:

A. Information on whether federally-listed endangered or threatened species, or federally-designated critical habitat may be in the project area;

B. Whether such species or critical habitat may be adversely affected by storm water discharges or storm water discharge-related activities from the project;

C. Results of the Appendix C listed species and critical habitat screening determinations;

D. Confirmation of delivery of NOI to EPA or to EPA's electronic NOI system. This may include an overnight, express or registered mail receipt acknowledgment; or electronic acknowledgment from EPA's electronic NOI system.

E. Any correspondence for any stage of project planning between the U.S. Fish and Wildlife Service (FWS), EPA, the U.S. National Marine Fisheries Service (NMFS), or others and you regarding listed species and critical habitat, including any notification that delays your authorization to discharge under this permit;

F. A description of measures necessary to protect federally-listed endangered or threatened species, or federally-designated critical habitat. The permittee must describe and implement such measures to maintain eligibility for coverage under this permit.

3.8 Copy of Permit Requirements

Copies of this permit and of the signed and certified NOI form that was submitted to EPA must be included in the SWPPP. Also, upon receipt, a copy of the letter from the EPA Storm Water Notice Processing Center notifying you of their receipt of your administratively complete NOI must also be included as a component of the SWPPP.

3.9 Applicable State, Tribal, or Local Programs

The SWPPP must be consistent with all applicable federal, state, tribal, or local requirements for soil and erosion control and storm water management, including updates to the SWPPP as necessary to reflect any revisions to applicable federal, state, tribal, or local requirements for soil and erosion control.

3.10 Inspections

A. Inspections must be conducted in accordance with one of the two schedules listed below. You must specify in your SWPPP which schedule you will be following.

   1. At least once every 7 calendar days, OR
   2. At least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.

B Inspection frequency may be reduced to at least once every month if:

   1. The entire site is temporarily stabilized,
   2. Runoff is unlikely due to winter conditions (e.g., site is covered with snow, ice, or the ground is frozen), or
   3. Construction is occurring during seasonal arid periods in arid areas and semi-arid areas.

C. A waiver of the inspection requirements is available until one month before thawing conditions are expected to result in a discharge if all of the following requirements are met:

   1. The project is located in an area where frozen conditions are anticipated to continue for extended periods of time (i.e., more than one month);
   2. Land disturbance activities have been suspended; and
   3. The beginning and ending dates of the waiver period are documented in the SWPPP.

D. Inspections must be conducted by qualified personnel (provided by the operator or cooperatively by multiple operators). "Qualified personnel" means a person knowledgeable in the principles and practice of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact

storm water quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of storm water discharges from the construction activity.

E. Inspections must include all areas of the site disturbed by construction activity and areas used for storage of materials that are exposed to precipitation. Inspectors must look for evidence of, or the potential for, pollutants entering the storm water conveyance system. Sedimentation and erosion control measures identified in the SWPPP must be observed to ensure proper operation. Discharge locations must be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to waters of the United States, where accessible. Where discharge locations are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable. Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking.

F. Utility line installation, pipeline construction, and other examples of long, narrow, linear construction activities may limit the access of inspection personnel to the areas described in Subpart 3.10.E above. Inspection of these areas could require that vehicles compromise temporarily or even permanently stabilized areas, cause additional disturbance of soils, and increase the potential for erosion. In these circumstances, controls must be inspected on the same frequencies as other construction projects, but representative inspections may be performed. For representative inspections, personnel must inspect controls along the construction site for 0.25 mile above and below each access point where a roadway, undisturbed right-of-way, or other similar feature intersects the construction site and allows access to the areas described above. The conditions of the controls along each inspected 0.25 mile segment may be considered as representative of the condition of controls along that reach extending from the end of the 0.25 mile segment to either the end of the next 0.25 mile inspected segment, or to the end of the project, whichever occurs first.

G. For each inspection required above, you must complete an inspection report. At a minimum, the inspection report must include:

1. The inspection date;
2. Names, titles, and qualifications of personnel making the inspection;
3. Weather information for the period since the last inspection (or since commencement of construction activity if the first inspection) including a best estimate of the beginning of each storm event, duration of each storm event, approximate amount of rainfall for each storm event (in inches), and whether any discharges occurred;
4. Weather information and a description of any discharges occurring at the time of the inspection;
5. Location(s) of discharges of sediment or other pollutants from the site;
6. Location(s) of BMPs that need to be maintained;
7. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
8. Location(s) where additional BMPs are needed that did not exist at the time of inspection; and
9. Corrective action required including any changes to the SWPPP necessary and implementation dates.

A record of each inspection and of any actions taken in accordance with this Part must be retained as part of the SWPPP for at least three years from the date that permit coverage expires or is terminated. The inspection reports must identify any incidents of non-compliance with the permit conditions. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the construction project or site is in compliance with the SWPPP and this permit. The report must be signed in accordance with Appendix G, Section 11 of this permit.

3.11 Maintaining an Updated Plan

A. The SWPPP, including the site map, must be amended whenever there is a change in design, construction, operation, or maintenance at the construction site that has or could have a significant effect on the discharge of pollutants to the waters of the United States that has not been previously addressed in the SWPPP.

B. The SWPPP must be amended if during inspections or investigations by site staff, or by local, state, tribal or federal officials, it is determined that the discharges the SWPPP is ineffective in eliminating or significantly minimizing pollutants in storm water discharges from the construction site.

C. Based on the results of an inspection, the SWPPP must be modified as necessary to include additional or modified BMPs designed to correct problems identified. Revisions to the SWPPP must be completed within

seven (7) calendar days following the inspection. Implementation of these additional or modified BMPs must be accomplished as described in Subpart 3.6.B.

3.12 Signature, Plan Review and Making Plans Available

A. A copy of the SWPPP (including a copy of the permit), NOI, and acknowledgement letter from EPA must be retained at the construction site (or other location easily accessible during normal business hours to EPA, a state, tribal or local agency approving sediment and erosion plans, grading plans, or storm water management plans; local government officials; the operator of a municipal separate storm sewer receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service) from the date of commencement of construction activities to the date of final stabilization. If you have day-to-day operational control over SWPPP implementation, you must have a copy of the SWPPP available at a central location on-site for the use of all those identified as having responsibilities under the SWPPP whenever they are on the construction site. If an on-site location is unavailable to store the SWPPP when no personnel are present, notice of the plan's location must be posted near the main entrance at the construction site.

B. A sign or other notice must be posted conspicuously near the main entrance of the construction site. If displaying near the main entrance is infeasible, the notice can be posted in a local public building such as the town hall or public library. The sign or other notice must contain the following information:

   1. A copy of the completed Notice of Intent as submitted to the EPA Storm Water Notice Processing Center; and

   2. If the location of the SWPPP or the name and telephone number of the contact person for scheduling SWPPP viewing times has changed (i.e., is different than that submitted to EPA in the NOI), the current location of the SWPPP and name and telephone number of a contact person for scheduling viewing times.

   For linear projects, the sign or other notice must be posted at a publicly accessible location near the active part of the construction project (e.g., where a pipeline project crosses a public road).

C. SWPPPs must be made available upon request by EPA; a state, tribal or local agency approving sediment and erosion plans, grading plans, or storm water management plans; local government officials; the operator of a municipal separate storm sewer receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service to the requestor. The copy of the SWPPP that is required to be kept on-site or locally available must be made available, in its entirety, to the EPA staff for review and copying at the time of an on-site inspection.

D. All SWPPPs must be signed and certified in accordance with Appendix G, Section 11.

3.13 Management Practices

A. All control measures must be properly selected, installed, and maintained in accordance with any relevant manufacturer specifications and good engineering practices. If periodic inspections or other information indicates a control has been used inappropriately, or incorrectly, the operator must replace or modify the control for site situations as soon as practicable.

B. If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize off-site impacts.

C. Litter, construction debris, and construction chemicals that could be exposed to storm water must be prevented from becoming a pollutant source in storm water discharges.

D. Except as provided below, stabilization measures must be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.

   1. Where stabilization by the 14th day is precluded by snow cover or frozen ground conditions, stabilization measures must be initiated as soon as practicable.

   2. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 14 days, temporary stabilization measures do not have to be initiated on that portion of the site.

3. In arid, semiarid, and drought-stricken areas where initiating perennial vegetative stabilization measures is not possible within 14 days after construction activity has temporarily or permanently ceased, final vegetative stabilization measures must be initiated as soon as practicable.

E. A combination of sediment and erosion control measures are required to achieve maximum pollutant removal.

1. Sediment Basins: For common drainage locations that serve an area with 10 or more acres disturbed at one time, a temporary (or permanent) sediment basin that provides storage for a calculated volume of runoff from the drainage area from a 2-year, 24-hour storm, or equivalent control measures, must be provided where attainable until final stabilization of the site. Where no such calculation has been performed, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures, must be provided where attainable until final stabilization of the site. When computing the number of acres draining into a common location, it is not necessary to include flows from offsite areas and flows from on-site areas that are either undisturbed or have undergone final stabilization where such flows are diverted around both the disturbed area and the sediment basin. In determining whether installing a sediment basin is attainable, the operator may consider factors such as site soils, slope, available area on-site, etc. In any event, the operator must consider public safety, especially as it relates to children, as a design factor for the sediment basin, and alternative sediment controls must be used where site limitations would preclude a safe design.
2. For drainage locations which serve 10 or more disturbed acres at one time and where a temporary sediment basin or equivalent controls is not attainable, smaller sediment basins and/or sediment traps should be used. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries (and for those side slope boundaries deemed appropriate as dictated by individual site conditions).
3. For drainage locations serving less than 10 acres, smaller sediment basins and/or sediment traps should be used. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries (and for those side slope boundaries deemed appropriate as dictated by individual site conditions) of the construction area unless a sediment basin providing storage for a calculated volume of runoff from a 2-year, 24-hour storm or 3,600 cubic feet of storage per acre drained is provided.

F. Velocity dissipation devices must be placed at discharge locations and along the length of any outfall channel to provide a non-erosive flow velocity from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., no significant changes in the hydrological regime of the receiving water).

3.14 Documentation of Permit Eligibility Related to Total Maximum Daily Loads

The SWPPP must include documentation supporting a determination of permit eligibility with regard to waters that have an EPA-established or approved TMDL, including:

A. Identification of whether your discharge is identified, either specifically or generally, in an EPA-established or approved TMDL and any associated allocations, requirements, and assumptions identified for your discharge;

B. Summaries of consultation with State or Federal TMDL authorities on consistency of SWPPP conditions with the approved TMDL, and

C. Measures taken by you to ensure that your discharge of pollutants from the site is consistent with the assumptions and requirements of the EPA-established or approved TMDL, including any specific wasteload allocation that has been established that would apply to your discharge.

See section 1.3.C.5 for further information on determining permit eligibility related to TMDLs.

PART 4: SPECIAL CONDITIONS, MANAGEMENT PRACTICES AND OTHER NON-NUMERIC LIMITATIONS

4.1 Continuation of the Expired General Permit

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with the Administrative Procedure Act and remain in force and effect. If you were granted permit coverage prior to the expiration date, you will automatically remain covered by the continued permit until the earliest of:

A. Reissuance or replacement of this permit, at which time you must comply with the conditions of the new permit to maintain authorization to discharge; or

B. Your submittal of a Notice of Termination; or

C. Issuance of an individual permit for the project's discharges; or

D. A formal permit decision by EPA to not reissue this general permit, at which time you must seek coverage under an alternative general permit or an individual permit.

4.2 Requiring an Individual Permit or an Alternative General Permit

A. EPA may require you to apply for and/or obtain either an individual NPDES permit or an alternative NPDES general permit. Any interested person may petition EPA to take action under this paragraph. If EPA requires you to apply for an individual NPDES permit, EPA will notify you in writing that a permit application is required. This notification will include a brief statement of the reasons for this decision and an application form. In addition, if you are an existing permittee covered under this permit, the notice will set a deadline to file the application, and will include a statement that on the effective date of issuance or denial of the individual NPDES permit or the alternative general permit as it applies to you, coverage under this general permit will automatically terminate. Applications must be submitted to EPA at the applicable EPA Regional offices listed in Appendix B of this permit. EPA may grant additional time to submit the application upon your request. If you are covered under this permit and you fail to submit in a timely manner an individual NPDES permit application as required by EPA, then the applicability of this permit to you is automatically terminated at the end of the day specified by EPA as the deadline for application submittal.

B. You may request to be excluded from the coverage of this general permit by applying for an individual permit. In such a case, you must submit an individual application in accordance with the requirements of 40 CFR §122.26(c)(1)(ii), with reasons supporting the request, to EPA at the applicable EPA Regional office listed in Appendix B of this permit. The request may be granted by issuance of an individual permit or an alternative general permit if your reasons are adequate to support the request.

C. When an individual NPDES permit is issued to you, who are otherwise subject to this permit, or you are authorized to discharge under an alternative NPDES general permit, the applicability of this permit to you is automatically terminated on the effective date of the individual permit or the date of authorization of coverage under the alternative general permit, whichever the case may be. If you, who are otherwise subject to this permit, are denied an individual NPDES permit or an alternative NPDES general permit, the applicability of this permit to you is automatically terminated on the date of such denial, unless otherwise specified by EPA.

4.3 Releases in Excess of Reportable Quantities

The discharge of hazardous substances or oil in storm water discharges from the construction site must be prevented or minimized in accordance with the SWPPP. This permit does not relieve you of the federal reporting requirements of 40 CFR Part 110, 40 CFR Part 117 and 40 CFR Part 302 relating to spills or other releases of oils or hazardous substances.

Where a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117 or 40 CFR Part 302, occurs during a 24-hour period:

- you must provide notice to the National Response Center (NRC) (800–424–8802; in the Washington, DC, metropolitan area call 202–426–2675) in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117 and 40 CFR Part 302 as soon as site staff have knowledge of the discharge; and
- you must modify the SWPPP as required under Subpart 3.11 within 7 calendar days of knowledge of the release to: provide a description of the release, the circumstances leading to the release, and the date of the release. Plans must identify measures to prevent the reoccurrence of such releases and to respond to such releases.

4.4 Spills

This permit does not authorize the discharge of hazardous substances or oil resulting from an on-site spill.

4.5 Attainment of Water Quality Standards After Authorization

A. You must select, install, implement and maintain BMPs at your construction site that minimize pollutants in the discharge as necessary to meet applicable water quality standards. In general, except in situations explained in Subpart 4.5.B below, your SWPPP developed, implemented, and updated consistent with Part 3.0 is considered as stringent as necessary to ensure that your discharges do not cause or contribute to an excursion above any applicable water quality standard.

B. At any time after authorization, EPA may determine that your storm water discharges may cause, have reasonable potential to cause, or contribute to an excursion above any applicable water quality standard. If such a determination is made, EPA will require you to:

   i. Develop a supplemental BMP action plan describing SWPPP modifications in accordance with Subpart 3.11 to address adequately the identified water quality concerns;

   ii. Submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is attaining water quality standards; or

   iii. Cease discharges of pollutants from construction activity and submit an individual permit application according to Subpart 4.2.

   All written responses required under this part must include a signed certification consistent with Appendix G, Section 11.

PART 5: TERMINATION OF COVERAGE

5.1 Requirements

You may only submit a Notice of Termination (NOT) after one or more of the following conditions have been met:

A. Final stabilization has been achieved on all portions of the site for which you are responsible;

B. Another operator has assumed control according to Appendix G, Section 11.C over all areas of the site that have not been finally stabilized;

C. Coverage under an individual or alternative general NPDES permit has been obtained; or

D. For residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

The NOT must be submitted within 30 days of one of the above conditions being met. Authorization to discharge terminates at midnight of the day the NOT is signed.

5.2 Submitting a Notice of Termination

It is your responsibility to submit a complete and accurate Notice of Termination (NOT), using the form provided in Appendix F (or a photocopy thereof) available at www.epa.gov/npdes/stormwater/cgp. If EPA notifies dischargers (either directly, by public notice, or by making information available on the Internet) of other NOT form options (e.g., electronic submission), you may take advantage of those options to satisfy the requirements of Part 5.

A. The Notice of Termination must include the following information:

   1. The NPDES permit tracking number for the storm water discharge;

   2. The basis for submission of the NOT, including: final stabilization has been achieved on all portions of the site for which the permittee is responsible; another operator/permittee has assumed control over all areas of the site that have not been finally stabilized; coverage under an alternative NPDES permit has been obtained; or, for residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner;

   3. You, the operator's name, address, telephone number and your organization's Employer Identification Number (EIN) as established by the U.S. Internal Revenue Service;

   4. The name of the project and address (or a description of location if no street address is available) of the construction site for which the notification is submitted; and

   5. A certification statement, signed and dated by an authorized representative as defined in Appendix G, Section 11 and the name and title of that authorized representative.

5.3 Where to Submit

A. All NOTs must be submitted to one of the following addresses:

For Regular U.S. Mail Delivery:
EPA Storm Water Notice Processing Center
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

For Overnight/Express Mail Delivery:
EPA Storm Water Notice Processing Center
Room 7420
U.S. EPA
1201 Constitution Avenue, NW
Washington, DC 20004

B. In lieu of Subpart 5.3.A, you can submit your NOT to EPA using EPA's electronic system (i.e., eNOI), when available. Check www.epa.gov/npdes/stormwater/cgp for updates.

PART 6: RETENTION OF RECORDS

Copies of the SWPPP and all documentation required by this permit, including records of all data used to complete the NOI to be covered by this permit, must be retained for at least three years from the date that permit coverage expires or is terminated. This period may be extended by request of EPA at any time.

PART 7: REOPENER CLAUSE

7.1 Procedures for Modification or Revocation

Permit modification or revocation will be conducted according to 40 CFR §122.62, §122.63, §122.64 and §124.5.

7.2 Water Quality Protection

If there is evidence indicating that the storm water discharges authorized by this permit cause, have the reasonable potential to cause or contribute to an excursion above any applicable water quality standard, you may be required to obtain an individual permit in accordance with Part 4.5 of this permit, or the permit may be modified to include different limitations and/or requirements.

7.3 Timing of Permit Modification

EPA may elect to modify the permit prior to its expiration (rather than waiting for the new permit cycle) to comply with any new statutory or regulatory requirements, such as for effluent limitation guidelines, that may be promulgated in the course of the current permit cycle.

PART 8: STANDARD PERMIT CONDITIONS

The federal regulations require that the Standard Conditions provisioned at 40 CFR §122.41 be applied to all NPDES permits. You are required to comply with those Standard Conditions, details of which are provided in Appendix G.

PART 9: PERMIT CONDITIONS APPLICABLE TO SPECIFIC STATES, INDIAN COUNTRY, OR TERRITORIES

The provisions of this Part provide modifications or additions to the applicable conditions of this permit to reflect specific additional conditions required as part of the state or tribal CWA Section 401 certification process, or the Coastal Zone Management Act (CZMA) certification process, or as otherwise established by the permitting authority. The specific additional revisions and requirements only apply to activities in those specific states, Indian country, and federal facilities. States, Indian country, and federal facilities not included in this Part do not have any modifications or additions to the applicable conditions of this permit.

State Coastal Zone Management Act (CZMA) certification was not received from Massachusetts in time for that state to be included in this permit. As such, large construction activities in Massachusetts covered under the 1998 CGP will continue to be covered under that permit. EPA will reissue the CGP for Massachusetts for large and small construction activities at a later date, and will include any state-specific modifications or additions as part of the State's CZMA certification process.

A. Region 1

1. MAR100000: Commonwealth of Massachusetts, except Indian country

   a. State Water Quality Statutes, Regulations, and Policies:

      i. You must comply with the Massachusetts Clean Waters Act (Ch. 21, ss. 23-56).

      ii. You must comply with the conditions in 314 CMR 4.00 - Surface Water Quality Standards.

      iii. You must comply with the conditions in 314 CMR 3.00 - Surface Water Discharge Permit Program.

      iv. You must comply with the Wetlands Protection Act, Ch. 131, s. 40 and its regulations, 310 CMR 10.00 and any order of Conditions issued by a Conservation Commission or a Superseding Order of Conditions issued by the Massachusetts Department of Environmental Protection.

   b. Department of Environmental Protection Storm Water Management Policy:

      i. You must comply with the Massachusetts Storm Water Management Policy, March 1997 and applicable Storm Water Performance Standards, as prescribed by state regulations promulgated under the authority of the Massachusetts Clean Waters Act, MGL Ch. 21, ss. 23-56 and the Wetlands Protection Act Ch. 131, s. 40.

   c. Other State Environmental Laws, Regulations, Policies:

      i. You must comply with the Massachusetts Endangered Species Act [MESA] (MGL Ch. 313A and regulations at 321 CMR 10.00) and any actions undertaken to comply with this storm water permit, shall not result in non-compliance with the MESA.

      ii. You must not conduct activities under this permit that will interfere with implementation of mosquito control work conducted in accordance with Chapter 252 including, s. 5A thereunder and DEP Guideline Number BRP G01-02, West Nile Virus Application of Pesticides to Wetland Resource Areas and Buffer Zones, and Public Water Systems.

   d. Other Department Directives:

      i. The Department may require you to perform water quality monitoring during the permit term if monitoring is necessary for the protection of public health or the environment as designated under the authority at 314 CMR 3.00.

      ii. The Department may require you to provide measurable verification of the effectiveness of BMPs and other control measures in your management program, including water quality monitoring.

      iii. The Department has determined that compliance with this permit does not protect you from enforcement actions deemed necessary by the Department under its associated regulations to address an imminent threat to the public health or a significant adverse environmental impact which results in a violation of the Massachusetts Clean Waters Act, Ch. 21, ss. 26-53.

      iv. The Department reserves the right to modify the 401 Water Quality Certification if any changes, modifications or deletions are made to the general permit. In addition, the Department reserves the right to add and/or alter the terms and conditions of its 401 Water Quality Certification to carry out its responsibilities during the term of this permit with respect to water quality, including any revisions to 314 CMR 4.00, Surface Water Quality Standards.

   e. Permit Compliance

      i. Should any violation of the Massachusetts Surface Water Quality Standards (314 CMR 4.00) or the conditions of this certification occur, the Department will direct you to correct the violations(s). The Department has the right to take any action as authorized by the General Laws of the Commonwealth to address the violation of this permit or the MA Clean Waters Act and the regulations promulgated thereunder. Substantial civil and criminal penalties are authorized under MGL Ch. 21, s. 42 for discharging into Massachusetts' waters in violation of an order or permit issued by this Department. This certification does not relieve the you of the duty to comply with other applicable Massachusetts statutes and regulations.

2. NHR100000: State of New Hampshire

   a. If you disturb 100,000 square feet or more of contiguous area, you must also apply for a "Significant Alteration of the Terrain Permit from DES pursuant to RSA 485-A:17 and Env-Ws 415. This requirement

applies to the disturbances of only 50,000 square feet when construction occurs within the protected shoreline (see RSA 483-B and Env-Ws 1400).

b. You must determine that any excavation dewatering discharges are not contaminated before they will be authorized as an allowable non-storm water discharge under this permit (see Subpart 1.3.B). The water is considered uncontaminated if there is no groundwater contamination within 1,000 feet of the discharge. Information on groundwater contamination can be generated over the Internet via the NHDES web site www.des.state.nh.us (One Stop Data Retrieval, Onestop Master Site Table). The web site also provides E-mail access to an NHDES Site Remediation Contact to answer questions about using the Web site.

c. You must treat any uncontaminated excavation dewatering discharges as necessary to remove suspended solids and turbidity. The discharges must be sampled at a location prior to mixing with storm water at least once per week during weeks when discharges occur. The samples must be analyzed for total suspended solids (TSS) and must meet monthly average and maximum daily TSS limitations of 50 milligrams per liter (mg/L) and 100 mg/L, respectively. TSS (a.k.a. Residue, Nonfilterable) analysis and sampling must be performed in accordance with Tables IB (parameter, units and method) and II (required containers, preservation techniques and holding times) in 40 CFR 136.3 (see: http://www.access.gpo.gov/nara/cfr/waisidx_02/40cfr136_02.html). Records of any sampling and analysis must be maintained and kept with the SWPPP for at least three years after final site stabilization.

d. During site design and preparation of the storm water pollution prevention plan (SWPPP), you must consider opportunities for groundwater recharge using on-site infiltration. The SWPPP must include a description of any on-site infiltration that will be installed as a post construction storm water management measure (see Subpart 3.4.E) or reasons for not employing such measures. For design considerations for infiltration measures see the September 2001 DES publication titled “Managing Storm Water as a Valuable Resource” which is available online at: www.des.state.nh.us/StormWater/construction.htm. Loss of annual recharge to groundwater should be minimized through the use of infiltration measures wherever feasible.

B. Region 2

1. NYR10000I: Indian country within the State of New York

St. Regis Mohawk Territory at Akwesasne

a. NOIs shall also be submitted to the St. Regis Mohawk Tribe, Environment Division, at the same time they are submitted to EPA, at the following address:

St. Regis Mohawk Tribe, Environment Division
412 State Route 37
Akwesasne, NY 13655
Attn: Clean Water Program Manager.

b. In addition, Storm Water Pollution Prevention Plans (and any updates or amendments thereto) must be submitted to the Environment Division and to the Tribal Historic Preservation Officer at least thirty (30) days in advance of corresponding Notices of Intent. This will allow the Environment Division and the THPO to make an informed determination as to whether any proposed discharges might adversely impact the quality of its surface or groundwater, or disturb sites of historic or cultural significance to the Tribe that may be listed, or eligible to be listed, on the National Register of Historic Places.

c. Within 10 days of the inspection required under Subpart 3.10.G of this permit, the permittee shall provide a copy of the Inspection Report to the Environment Division.

C. Region 6

1. NMR150000: The State of New Mexico, except Indian country

NOTE: Conditions in the New Mexico Environment Department (NMED) certification of the permit resulted in permit requirements adding further restrictions on eligibility for discharges to Outstanding National Resource Waters (ONRWs), expanding on requirements for pollution prevention plans, and limiting options provided in the permit related to inspection frequency and final stabilization.

a. In addition to all other provisions of this permit, operators who intend to obtain authorization under this permit for all new storm water discharges must satisfy the conditions in Subpart 9.C.1.a.i, unless a TMDL has been established for the receiving stream which specifies a waste load allocation (WLA) for

construction storm water discharges or the receiving stream is a Tier 3 water, in which case Subpart 9.C.1.a.ii applies.

i. The operator must include a Sediment Control Plan (SCP) as a part of the Storm Water Pollution Prevention Plan (SWPPP). The SCP must include site-specific interim and permanent stabilization, managerial, and structural solids, erosion, and sediment control BMPs and/or other controls that are designed to prevent an increase in the sediment yield and flow velocity from pre-construction, undisturbed conditions. This applies to discharges both during construction and after construction operations have been completed. The SCP must identify, and document the rationale for selecting these BMPs and/or other controls. The SCP must also describe design specifications, construction specifications, maintenance schedules (including a long term maintenance plan), criteria for inspections, as well as expected performance and longevity of the BMPs. Using appropriate soil loss prediction models (such as SEDCAD 4.0, RUSLE, SEDIMONT II, MULTISED, etc.), the operator(s) must demonstrate, and include documentation in the SCP, that implementation of the site-specific practices will result in sediment yields that will not be greater than the sediment yield levels from pre-construction, undisturbed conditions. The SCP must be prepared in accordance with good engineering practices and certified by a registered professional engineer. The operator(s) must design, implement, and maintain BMPs in the manner specified in the SCP and the SWPPP.

ii. Operators are not eligible to obtain authorization under this permit for all new storm water discharges to outstanding national resource waters (ONRWs) (also referred to as "Tier 3: waters). According to the Antidegradation Policy at Paragraph 3 of Subsection A of 20.6.4.8 NMAC, in part, "ONRWs may include, but are not limited to, surface waters of the state within national and state monuments, parks, wildlife refuges, waters of exceptional recreational or ecological significance, and waters identified under the Wild and Scenic Rivers Act." No ONRWs exist at the time this permit is being finalized; however, during the term of the permit, if a receiving water is designated as an ONRW, the operator must obtain an individual permit for storm water discharges from large and small construction activities.

b. Storm water discharges associated with industrial activity to Clean Water Act section 303(d) waters as well as all other "waters of the State" that the New Mexico Environment Department, Surface Waters Quality Bureau (SWQB) has determined to be or may reasonably be expected to be contributing to a violation of a water quality standard and/or that do not comply with the applicable anti-degradation provisions of the State's WQS are not authorized by this permit.

Note: Upon receipt of this determination, NMED anticipates that, within a reasonable period of time, EPA will notify the general permittee to apply for and obtain an individual NPDES permit for these discharges per 40 CFR Part 122.28(b)(3).

c. Inspections required under Subpart 3.10 must be conducted at least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater. The option for inspections at least once per 7 calendar days is not available. The Inspection Waivers provided in Parts 3.10.B and C still apply.

d. Permittees can not use temporary erosion controls as described in item 3 of the Appendix A definition of "Final Stabilization"as a method for final stabilization under the permit.

e. Signed copies of discharge monitoring reports, individual permit applications, and all other reports required by the permit to be submitted, shall also be sent to:

Program Manager
Point Source Regulation Section
Surface Water Quality Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502

2. NMR15000I: Indian country within the State of New Mexico, except Navajo Reservation Lands that are covered under Arizona permit AZR10000I and Ute Mountain Reservation Lands that are covered under Colorado permit COR10000I

a. *Pueblo of Acoma* The following conditions apply only to discharges on the Pueblo of Acoma.

i. A copy of the storm water pollution prevention plan, Notice of Intent, and Notice of Termination must be submitted to the Haaku Water Office at the address below. The pollution prevention plan must be submitted to the Pueblo at least thirty (30) days in advance of submitting the Notice of Intent to EPA.

HAAKU WATER OFFICE
Pueblo of Acoma
P.O. Box 309
Pueblo of Acoma, NM 87034

b. *Pueblo of Isleta* The following conditions apply only to discharges on the Pueblo of Isleta.

i. Subpart 1.3.C.4, (Eligibility, Limitations on Coverage) first sentence, is revised to read: "This permit does not authorize discharges that EPA or the Pueblo of Isleta, prior to authorization under this permit, determines will cause, have the reasonable potential to cause, or contribute to an excursion above any applicable water quality standard or impairment of a designated use of receiving waters."

ii. Subpart 2.4. (Where to Submit) is amended to add the following section (2.4.C):

C. Copies of all Notices of Intent submitted to EPA must also be sent concurrently to the Pueblo of Isleta at the following address. Discharges are not authorized by this permit unless an accurate and complete Notice of Intent has been submitted to the Pueblo of Islet

Regular U.S. Mail Delivery	OR	Overnight/Express Mail Delivery
Environment Department Pueblo of Isleta P.O. Box 1270 Isleta, NM 87022		Environment Department Building L 11000 Broadway, SE Albuquerque, NM 87105

iii. Part 2 (Authorizations for Discharges of Storm Water from Construction Activity), second sentence, is amended to read: " Discharges are not authorized if your NOI is incomplete or inaccurate, if you failed to submit a copy of the NOI to the Pueblo of Isleta, or if you were never eligible for permit coverage.

iv. Subpart 3.4. (Pollution Prevention Plan Contents: Controls to Reduce Pollutants), section A, last sentence, is amended to read: "For each major activity identified in the project description the SWPPP must clearly describe appropriate control measures, the general sequence during the construction process in which the measures will be implemented, and which operator is responsible for the control measure's implementation and maintenance."

v. Subpart 3.8 (Copy of Permit Requirements), first sentence, is revised to read "Copies of this permit and of the signed and certified NOI form that was submitted to the Pueblo of Isleta and EPA must be included in the SWPPP."

vi. Subpart 3.10.(Inspections), section A is revised to read "Inspections must be conducted at least once every 7 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater."

vii. Subpart 3.10. (Inspections), section G, last paragraph, is amended to add: "Copies of inspection reports that identify incidents of noncompliance shall be sent to Pueblo of Isleta at the address listed in Subpart 2.4.C." (See above)

viii. Subpart 3.12. (Signature, Plan Review and Making Plans Available), section A, first sentence is amended to read: "A copy of the SWPPP (including a copy of the permit) must be retained at the construction site (or other location easily accessible during normal business hours to the Pueblo of Isleta's Environmental Department, EPA, a state, tribal or local agency approving sediment and erosion plans, grading plans, or storm water management plans; local government officials; the operator of a municipal separate storm sewer receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service) from the date of commencement of construction activities to the date of final stabilization."

ix. Subpart 3.12. (Signature, Plan Review and Making Plans Available), section C. is amended to read: "SWPPPs must be made available upon request by EPA; representatives of the Pueblo of Isleta Environment Department, a state, tribal or local agency approving sediment and erosion plans, grading plans, or storm water management plans; local government officials; the operator of a municipal separate storm sewer receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service to the requestor. The copy of the

SWPPP that is required to be kept on-site or locally available must be made available, in its entirety, to the EPA staff and the Pueblo of Isleta's Environment Department staff for review and copying at the time of an on-site inspection.

x. Subpart 3.13. (Management Practices), section A is amended to add: "Erosion and sediment controls shall be designed to retain sediment on-site."

xi. Subpart 4.3 (Releases in Excess of Reportable Quantities), first bullet is amended to read: "you must provide notice to the Pueblo of Isleta Environment Department (505-869-5748) and the National Response Center (NRC) (800–424–8802; in the Washington, DC, metropolitan area call 202–426–2675) in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117 and 40 CFR Part 302 as soon as site staff have knowledge of the discharge; and"

xii. Subpart 4.5 (Attainment of Water Quality Standards After Authorization), is amended to add the following fourth bullet:

"You must provide the Pueblo of Isleta, at the address listed in Subpart 2.4.C, with a copy of the EPA notification, the supplemental action plan, data and certification required by EPA."

xiii. Subpart 5.3. (Where to Submit) is amended to add the following section (5.3.C):

C. Copies of all Notices of Termination submitted to EPA must also be sent concurrently to the Pueblo of Isleta at the following address.

Regular U.S. Mail Delivery	OR	Overnight/Express Mail Delivery
Environment Department Pueblo of Isleta P.O. Box 1270 Isleta, NM 87022		Environment Department Building L 11000 Broadway, SE Albuquerque, NM 87105

xiv. Any correspondence, other than NOIs and NOTs, with the Pueblo of Isleta concerning storm water discharges authorized by this permit shall sent one of the addresses in Subpart 5.3.C (see above).

xv. Appendix G, Section 9, first sentence is amended to read:

"You must allow the Pueblo of Isleta's Environment Department, EPA, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:"

xvi. Appendix G, Section 12, subsections A, B, C, F, G and H are amended to require that when you must notify EPA of an event (e.g., planned changes, anticipated noncompliance, transfers, required reporting due to potential adverse effects or environmental impacts or other noncompliance matters), the Pueblo of Isleta must also be notified.

xvii. Parties wishing to apply for an Equivalent Analysis Waiver (see Appendix D, Section C) must provide a copy of the waiver analysis to the Pueblo of Isleta at the address specified in Subpart 5.3.C (See above) at the time it is submitted to EPA.

c. *Pueblo of San Juan.* The following conditions apply only to discharges on the Pueblo of San Juan.

i. Copies of the Notice of Intent (NOI) and Notice of Termination (NOT) must be provided to the Pueblo at the time it is provided to the Environmental Protection Agency, at the following address:

Office of Environmental Affairs
Pueblo of San Juan
P.O. Box 717
San Juan, NM 87566

ii. Appendix G, Section 10 (Monitoring and records), item D is amended to add:

"All monitoring must be conducted in accordance with the Pueblo of San Juan's Quality Assurance Project Plan."

d. *Pueblo of Sandia*. The following conditions apply only to discharges on the Pueblo of Sandia.

i. Copies of the Notice of Intent (NOI) and Notice of Termination (NOT) must be provided to the Pueblo at the same time it is submitted to the Environmental Protection Agency.

Environment Department
Pueblo of Sandia
Box 6008
Bernalillo, NM 87004

ii. The Storm Water Pollution Prevention Plan must be available to tribal environmental personnel upon request.

iii. You must telephone the Pueblo of Sandia Environment Department at (505) 867-4533 of any noncompliance that may endanger human health or the environment within ten (10) hours of becoming aware of the circumstance.

e. *Santa Clara Pueblo*. The following conditions apply only to discharges on the Santa Clara Pueblo.

i. Copies of the Notice of Intent (NOI) and Notice of Termination (NOT) must be provided to the Santa Clara Pueblo Office of Environmental Affairs at the same time it is submitted to the Environmental Protection Agency.

Santa Clara Pueblo
Office of Environmental Affairs
One Knee Street
P.O. Box 580
Espanola, NM 87532

f. *Pueblo of Tesuque* The following conditions apply only to discharges on the Pueblo of Tesuque.

i. A copy of the storm water pollution prevention plan, Notice of Intent, and Notice of Termination must be submitted to the Pueblo of Tesuque Environment Department at the address below. The Notice of Intent and the Notice of Termination must be submitted at the same time they are submitted to EPA. The pollution prevention plan must be submitted before the project begins. Phone: 505- 983-2667 FAX: 505-982-2331

Pueblo of Tesuque
Environment Department
Rt. 42, Box 360-T
Santa Fe, NM 87506

3. OKR15000F: Discharges in the State of Oklahoma that are not under the authority of the Oklahoma Department of Environmental Quality, including activities associated with oil and gas exploration, drilling, operations, and pipelines (includes SIC Groups 13 and 46, and SIC codes 492 and 5171), and point source discharges associated with agricultural production, services, and silviculture (includes SIC Groups 01, 02, 07, 08, 09).

a. Subpart 1.3.C. (Limitations on Coverage) is modified to add paragraphs 8 and 9 as follows:

"8. For activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Big Lee Creek or an water or watershed designated "ORW" (Outstanding Resource Water) in Oklahoma's Water Quality Standards, this permit may only be used to authorize discharges from temporary construction activities. Discharges from ongoing activities such as sand and gravel mining or any other mineral mining are not authorized.

9. Activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Big Lee Creek or an water or watershed designated "ORW" (Outstanding Resource Water) in Oklahoma's Water Quality Standards, this permit may not be used to authorize discharges from concrete or asphalt batch plants."

D. Region 8

1. MTR10000I: Indian country within the State of Montana

a. Confederated Salish and Kootenai Tribes of the Flathead Nation. The following conditions apply only for projects on the Flathead Indian Reservation:

i. The permittee must send the SWPPP to the Tribes at least 30 days before construction starts. The 30 day period will give Tribal staff time to become familiar with the project site, prepare for construction inspections and determine compliance with Tribal water quality standards, as required by the Tribe's Water Quality Management Ordinance 89B (1990) and Surface Water Quality Standards & Antidegradation Policy (1995). Copies of the SWPPP should be sent to the following address:

Confederated Salish and Kootenai Tribes
Natural Resources Department
Department Head
P.O. Box 278
Pablo, MT 59855

ii. Before submitting the Notice of Termination, permittees must clearly demonstrate to an appointed tribal staff person during an on-site inspection that requirements for site stabilization have been met and all temporary erosion control structures removed. The staff person performing the on-site inspection will be determined by the Environmental Protection Division Manager. The staff person will draft a short letter stating the stabilization requirements have been met to add to the permittees Notice of Termination submission to EPA.

iii. The permittee must send a copy of the Notice of Intent (NOI) and the Notice of Termination (NOT) to the Tribes at the same time that the NOI and NOT is sent to EPA. Copies of the NOI and NOT should be sent to the address above.

b. Fort Peck Tribes - Assiniboine & Sioux. The following conditions apply only for projects within the Fort Peck Indian Reservation:

i. The permittee must send a copy of the Notice of Intent (NOI) and the Notice of Termination (NOT) to the Tribes at the same time that the NOI and NOT is sent to EPA. Copies of the NOI and NOT should be sent to the following address:

Deb Madison
Environmental Program Manager
Fort Peck Assiniboine & Sioux Tribes
P.O. Box 1027
Poplar, MT 59255

E. Region 9

1. ASR100000: The Island of American Samoa

a. Discharges authorized by the general permit shall meet all applicable American Samoa water quality standards.

b. Permittees discharging under the general permit shall comply with all conditions of the permit.

2. AZR10000I: Indian country lands within the State of Arizona, including Navajo Reservation lands in New Mexico and Utah

a. White Mountain Apache Tribe. The following condition applies only for projects on the White Mountain Apache Reservation: All NOIs for proposed storm water discharge coverage shall be provided to the following address:

Tribal Environmental Planning Office
P.O. Box 2109
Whiteriver, AZ 85941

3. NIR100000: Commonwealth of the Northern Mariana Islands (CNMI)

a. An Earthmoving and Erosion Control Permit shall be obtained from the CNMI DEQ prior to any construction activity covered under the NPDES general permit.

b. All conditions and requirements set forth in the USEPA NPDES general permit for discharges from large and small construction must be complied with.

c. A SWPPP for storm water discharges from construction activity must be approved by the Director of the CNMI DEQ prior to the submission of the NOI to USEPA. The CNMI address for the submittal of the SWPPP for approval is:

Commonwealth of the Northern Mariana Islands
Office of the Governor
Director, Division of Environmental Quality (DEQ)
P.O. Box 501304 C.K.
Saipan, MP 96950-1304

d. An NOI to be covered by the general permit for discharges from large and small construction sites must be submitted to CNMI DEQ (use above address) and USEPA, Region 9, in the form prescribed by USEPA, accompanied by a SWPPP approval letter from CNMI DEQ.

e. The NOI must be postmarked seven (7) calendar days prior to any storm water discharges and a copy must be submitted to the Director of CNMI DEQ (use above address) no later than seven (7) calendar days prior to any stormwater discharges.

f. Copies of all monitoring reports required by the NPDES general permit must be submitted to CNMI DEQ (use above address).

g. In accordance with section 10.3(h) and (i) of the CNMI water quality standards, CNMI DEQ reserves the right to deny coverage under the general permit and to require submittal of an application for an individual NPDES permit based on a review of the NOI or other information made available to the Director.

F. Region 10

1. AKR100000: The State of Alaska, except Indian country

a. Operators of construction projects disturbing five or more acres occurring outside the Municipality of Anchorage must submit a copy of the Storm Water Pollution Prevention Plan (SWPPP) and a copy of the Notice of Intent (NOI) to the State of Alaska Department of Environmental Conservation (ADEC) for review, and shall be accompanied by the state-required fee of $400. Submittal of the SWPPP and the NOI to the ADEC should be made at the same time the NOI is submitted to the EPA.

b. Operators of publicly-funded projects disturbing five or more acres occurring within the Municipality of Anchorage must submit a copy of the SWPPP and a copy of the NOI to the ADEC for review, and shall be accompanied by the state-required fee of $400. Submittal of the SWPPP and the NOI to the ADEC should be made at the same time the NOI is submitted to the EPA.

c. Operators of construction projects disturbing at least one acre and less than five acres must submit a copy of the NOI to the ADEC at the same time it is submitted to the EPA.

d. Storm Water Pollution Prevention Plans and Notices of Intent must be submitted to ADEC at the following address:

Alaska Department of Environmental Conservation
Water Quality Permitting/Storm Water
555 Cordova Street
Anchorage, Alaska 99501

e. Operators of private construction projects disturbing one or more acres within the Municipality of Anchorage shall submit a copy of the Storm Water Pollution Prevention Plan to the Municipality at the following address:

Municipality of Anchorage, Office of Planning Development and Public Works
4700 S. Bragaw Street
P.O. Box 196650
Anchorage, Alaska 99519-6650

f. Submittal of the SWPPP to the Municipality of Anchorage should be made before or at the same time the NOI is submitted to the EPA and the ADEC and shall be accompanied by any Municipality-required fee.

2. IDR100000: The State of Idaho, except Indian country
   a. Any construction related storm water discharges to impaired water bodies on Idaho's Clean Water Act (CWA) Section 303(d) list with EPA-approved Total Maximum Daily Loads (TMDL) must be consistent with any load allocations established by the applicable TMDL.
   b. No net increase of listed pollutants is allowed in any construction related storm water discharges to an impaired water body considered "high priority" as included on Idaho's CWA Section 303(d) list that does not yet have an EPA-approved TMDL.
   c. If a TMDL has not been established for an impaired water body considered "medium priority" or "low priority" as included on Idaho's CWA Section 303(d) list, BMPs shall be employed as necessary to prohibit further impairment of the designated or existing beneficial uses.
   d. Only BMPs authorized by the appropriate designated agency as defined in the Idaho Water Quality Standards and Wastewater Treatment Requirements (IDAPA 58.01.02 et seq.), or otherwise approved by the Idaho Department of Environmental Quality, will be allowed.
   e. Use of the "Equivalent Analysis Waiver" in Addendum D is not authorized.
   f. Operators may contact the Idaho Department of Environmental Quality regional office nearest the construction activity for more information about impaired waterways:

Boise Regional Office:
1445 N. Orchard
Boise ID 83706-2239
Tel: (208)373-0550
Fax: (208)373-0287

Cascade Satellite Office:
109 N. Main St., PO Box 247
Cascade, ID 83611
Tel: (208)382-6808
Fax: (208)382-3327

Coeur d'Alene Regional Office:
2110 Ironwood Parkway
Coeur d'Alene ID 83814
Tel: (208)769-1422
Fax: (208)769-1404

Grangeville Satellite Office:
300 W. Main
Grangeville ID 83530
Tel: (208)983-0808
Fax: (208)983-2873

Idaho Falls Regional Office:
900 N. Skyline, Suite B
Idaho Falls, ID 83402
Tel: (208)528-2650
Fax: (208)528-2695

Lewiston Regional Office:
1118 "F" Street
Lewiston, ID 83501
Tel: (208)799-4370
Toll Free: 1-877-541-3304
Fax: (208)799-3451

Pocatello Regional Office:
444 Hospital Way #300
Pocatello ID 83201
Tel: (208)236-6160
Fax: (208)236-6168

Twin Falls Regional Office:
601 Pole Line Road, Suite 2
Twin Falls, ID 83301
Tel: (208)736-2190
Fax: (208)736-2194

3. ORR10000I: Indian country within the State of Oregon, except Fort McDermitt Reservation lands (see Region 9):
   a. Confederated Tribes of the Umatilla Indian Reservation. The following conditions apply only for projects within the exterior boundaries of the Umatilla Indian Reservation:
      i. The operator shall be responsible for achieving compliance with the Confederated Tribes of the Umatilla Indian Reservation's (CTUIR) Water Quality Standards.
      ii. The operator shall submit all Erosion Control and/or Storm Water Pollution Prevention Plans to the CTUIR Water Resources Program for review and approval by the Department of Natural Resources Director prior to submitting the Notice of Intent to EPA and prior to beginning any discharge activities.
      iii. The operator shall contact the CTUIR Tribal Historic Preservation Office (THPO) prior to beginning any construction activities to determine whether a cultural resource survey of the project area or other investigation is required. All cultural resource fieldwork must be conducted by qualified personnel and documented using Oregon Reporting Standards. The resulting report must be submitted to the THPO for concurrence at least 30 days before any ground disturbing work can occur at the site. The operator must obtain THPO concurrence in the form of a letter, which (if necessary) will include any measures that must be taken to prevent or mitigate adverse effects to potentially eligible historic properties, prior to any ground disturbing work.
      iv. The operator shall submit copies of the Notice of Intent to the CTUIR Water Resources Program and the CTUIR Tribal Historic Preservation Office at the same time it is submitted to EPA.

v. Erosion Control and Storm Water Pollution Prevention Plans and Notices of Intent shall be submitted to:

Confederated Tribes of the Umatilla Indian Reservation
Water Resources Program
P.O. Box 638
Pendleton, OR 97801
(541) 276-3447

Confederated Tribes of the Umatilla Indian Reservation
Cultural Resources Protection Program
Tribal Historic Preservation Office
P.O. Box 638
Pendleton, OR 97801
(541) 276-3629

b. Confederated Tribes of Warm Springs. The following conditions apply only for projects on the Warm Springs Indian Reservation:

i. All activities covered by this NPDES general permit occurring within a designated riparian buffer zone as established in Ordinance 74 (Integrated Resource Management Plan or IRMP) must be reviewed, approved and permitted through the Tribe's Hydraulic Permit Application process, including payment of any applicable fees.

ii. All activities covered by this NPDES general permit must follow all applicable land management and resource conservation requirements specified in the IRMP.

iii. Operators of activities covered by this NPDES general permit must submit a Storm Water Pollution Prevention Plan to the Tribe's Water Control Board at the following address for approval at least 30 days prior to beginning construction activity:

Chair, Warm Springs Water Control Board
P.O. Box C
Warm Springs, Oregon 97761

4. WAR10000F: Federal Facilities in the State of Washington, except those located on Indian Country

The following conditions apply to stormwater discharges from all permitted construction sites which disturb one acre or more and which discharge to surface waters (40 CFR part 122.26(b)(14)(x) and 122.26 (b)(15)):

a. Discharges must not cause or contribute to a violation of surface water quality standards (Chapter 173-201A WAC), sediment management standards (Chapter 173-204 WAC), ground water quality standards (Chapter 173-200 WAC), and human health-based criteria in the National Toxics Rule (Federal Register, Vol. 57, No. 246, Dec. 22, 1992, pages 60848-60923). Discharges that are not in compliance with these standards are not authorized.

b. You must apply all known available and reasonable methods of prevention, control and treatment (AKART), including the preparation and implementation of an adequate Stormwater Pollution Prevention Plan (SWPPP), with all appropriate BMPs installed and maintained in accordance with the SWPPP and the terms and conditions of this permit.

c. Stormwater BMPs must be properly designed, constructed, maintained and operated to:

i. Prevent pollution of state waters and protect water quality, including compliance with applicable state water quality standards;

ii. Satisfy state requirements for all known available and reasonable methods of prevention, control and treatment (AKART) of wastes (including construction stormwater runoff) prior to discharge to waters of the state; and

iii. Satisfy the federal technology-based treatment requirements under 40 CFR part 125.3.

d. You must document the technical basis for the design criteria used to select and design your stormwater management BMPs. You must document within your Stormwater Pollution Prevention Plan (SWPPP) how stormwater BMPs were selected, the pollutant removal performance expected from the BMP being selected, the technical basis (scientific, technical studies, and/or modeling) which support the performance claims for the BMPs being selected, and an assessment of how the selected BMP will

comply with state water quality standards, satisfy the state AKART requirements, and satisfy the federal technology-based treatment requirements.

If you choose to follow the stormwater management practices contained in stormwater technical manuals approved by Washington State, including the proper selection, implementation and maintenance of appropriate BMPs, you are presumed to have satisfied this demonstration requirement and do not need to include within the SWPPP the technical basis which support the performance claims for the BMPs being used. The SWPPP must include a reference to the manual used. Approved stormwater technical manuals include:

i. Stormwater Management Manual for Western Washington, August 2001, for sites west of the crest of the Cascade Mountains;

ii. Stormwater Management Manual for Eastern Washington, (completion expected in the fall of 2003) for sites east of the crest of the Cascade Mountains; or

iii. Other equivalent stormwater management guidance documents approved by Ecology.

e. Stormwater discharges from construction sites which disturb 5 acres or more (40 CFR part 122.26(b)(14)(x)) and which discharge to surface waters listed as impaired by the state under Section 303(d) of the Clean Water Act for turbidity, fine sediment, high pH, and/or phosphorus are subject to an effluent limitation that is equal to the applicable water quality standards at the point of discharge. If impairment is due to turbidity and/or fine sediment, the turbidity at the point of discharge shall not exceed the background (upstream) turbidity of the receiving water.

i. Effluent limitations apply to direct discharges to listed waterbodies as well as indirect discharges via a stormwater conveyance system.

ii. All references and requirements associated with Section 303(d) of the Clean Water Act shall use the most current listing by Ecology of impaired waters that exists at the time of application for coverage under this permit

f. Stormwater discharges from construction sites which disturb 5 acres or more (40 CFR part 122.26(b)(14)(x)) and which discharge to surface waters for which there is a total maximum daily load (TMDL) allocation or other control plan that addresses sediment (including turbidity, fine sediment, total suspended solids or siltation), high pH, or phosphorus must be consistent with the requirements in the approved TMDL or applicable control plan. Control plans may be total maximum daily load (TMDL) determinations, restrictions for the protection of endangered species, ground water management plans, or other limitations that regulate or set limits on discharges to a specific waterbody or groundwater recharge area.

Information on impaired waterways is available from the Department of Ecology web site at: http://www.ecy.wa.gov/programs/wq/stormwater. You may also contact the Department of Ecology for more information about impaired waterways at:

Mailing Address:
Department of Ecology
Stormwater Unit
PO Box 47600
Olympia, WA 98504-7600
Phone: 360-407-6000

Physical Address:
Department of Ecology
300 Desmond Drive
Lacey, WA 98503
Phone: 360-407-6000

5. WAR10000I: Indian country within the State of Washington

a. Puyallup Tribe of Indians. The following conditions apply only for projects on the Puyallup Reservation:

i. Each operator shall be responsible for achieving compliance with the Puyallup Tribe's Water Quality Standards.

ii. Each operator shall submit all Pollution Prevention Plans to the Puyallup Tribe Environmental Department for review and approval prior to beginning any discharge activities.

iii. Each operator shall submit a copy of the Notice of Intent to the Puyallup Tribal Environmental Department at the same time it is submitted to EPA.

iv. Storm Water Pollution Prevention Plans and Notices of Intent shall be submitted to:

Puyallup Tribe Natural Resources, Environmental Department
1850 Alexander Avenue
Tacoma, WA 98421

b. Confederated Tribes of the Chehalis Reservation. The following conditions apply only for projects on the Chehalis Reservation:

i. The operator shall be responsible for achieving compliance with the Chehalis Tribe's Water Quality Standards.

ii. The operator shall submit a Storm Water Pollution Prevention Plan to the Chehalis Tribe Department of Natural Resources for review and approval at least thirty (30) days prior to beginning any discharge activities.

iii. The operator shall submit a copy of the Notice of Intent to the Chehalis Tribe Department of Natural Resources at the same time it is submitted to EPA.

iv. Storm Water Pollution Prevention Plans and Notices of Intent shall be submitted to:

Chehalis Tribe Department of Natural Resources
420 Howanut Road
Oakville, WA 98568

Appendix A - Definitions and Acronyms

Definitions

"Arid Areas" means areas with an average annual rainfall of 0 to 10 inches.

"Best Management Practices" (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the United States. BMPs also include treatment requirements, operating procedures, and practice to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

"Commencement of Construction Activities" means the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction-related activities (e.g., stockpiling of fill material).

"Control Measure" as used in this permit, refers to any BMP or other method used to prevent or reduce the discharge of pollutants to waters of the United States.

"CWA" means the Clean Water Act or the Federal Water Pollution Control Act, 33 U.S.C. section 1251 et seq.

"Discharge" when used without qualification means the ''discharge of a pollutant.''

"Discharge of Storm Water Associated with Construction Activity" as used in this permit, refers to a discharge of pollutants in storm water from areas where soil disturbing activities (e.g., clearing, grading, or excavation), construction materials or equipment storage or maintenance (e.g., fill piles, borrow area, concrete truck washout, fueling), or other industrial storm water directly related to the construction process (e.g., concrete or asphalt batch plants) are located.

"Eligible" means qualified for authorization to discharge storm water under this general permit.

"Facility" or "Activity" means any "point source" or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.

"Federal Facility" means any buildings, installations, structures, land, public works, equipment, aircraft, vessels, and other vehicles and property, owned by, or constructed or manufactured for the purpose of leasing to, the Federal government.

"Final Stabilization" means that:

1. All soil disturbing activities at the site have been completed and either of the two following criteria are met:
    a. a uniform (e.g,, evenly distributed, without large bare areas) perennial vegetative cover with a density of 70 percent of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or
    b. equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.
2. When background native vegetation will cover less than 100 percent of the ground (e.g., arid areas, beaches), the 70 percent coverage criteria is adjusted as follows: if the native vegetation covers 50 percent of the ground, 70 percent of 50 percent (0.70 X 0.50 = 0.35) would require 35 percent total cover for final stabilization. On a beach with no natural vegetation, no stabilization is required.
3. In arid and semi-arid areas only, all soil disturbing activities at the site have been completed and both of the following criteria have been met:
    a. Temporary erosion control measures (e.g., degradable rolled erosion control product) are selected, designed, and installed along with an appropriate seed base to provide erosion control for at least three years without active maintenance by you,
    b. The temporary erosion control measures are selected, designed, and installed to achieve 70 percent vegetative coverage within three years.
4. For individual lots in residential construction, final stabilization means that either:
    a. The homebuilder has completed final stabilization as specified above, or

b. The homebuilder has established temporary stabilization including perimeter controls for an individual lot prior to occupation of the home by the homeowner and informing the homeowner of the need for, and benefits of, final stabilization.

5. For construction projects on land used for agricultural purposes (e.g., pipelines across crop or range land, staging areas for highway construction, etc.), final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to ‘‘water of the United States,’’ and areas which are not being returned to their preconstruction agricultural use must meet the final stabilization criteria (1) or (2) or (3) above.

“Indian country” is defined at 40 CFR §122.2 to mean:

1. All land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation;
2. All dependent Indian communities with the borders of the United States whether within the originally or subsequently acquired territory thereof, and whether within or without the limits of a state; and
3. All Indian allotments, the Indian titles to which have not been extinquished, including rights-of-ways running through the same.

“Large Construction Activity” is defined at 40 CFR §122.26(b)(14)(x) and incorporated here by reference. A large construction activity includes clearing, grading, and excavating resulting in a land disturbance that will disturb equal to or greater than five acres of land or will disturb less than five acres of total land area but is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than five acres. Large construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site.

“Municipal Separate Storm Sewer System” or “MS4" is defined at 40 CFR §122.26(b)(8) to mean a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):

1. Owned and operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;
2. Designed or used for collecting or conveying storm water;
3. Which is not a combined sewer; and
4. Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR §122.2.

“New Project” means the “commencement of construction activities” occurs after the effective date of this permit.

“Ongoing Project” means the “commencement of construction activities” occurs before the effective date of this permit.

“Operator” for the purpose of this permit and in the context of storm water associated with construction activity, means any party associated with a construction project that meets either of the following two criteria:

1. The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
2. The party has day-to-day operational control of those activities at a project which are necessary to ensure compliance with a SWPPP for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions). This definition is provided to inform permittees of EPA’s interpretation of how the regulatory definitions of ‘‘owner or operator’’ and ‘‘facility or activity’’ are applied to discharges of storm water associated with construction activity.

“Owner or operator” means the owner or operator of any ‘‘facility or activity’’ subject to regulation under the NPDES program.

"Permitting Authority" means the United States Environmental Protection Agency, EPA, a Regional Administrator of the Environmental Protection Agency or an authorized representative.

"Point Source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

"Pollutant" is defined at 40 CFR §122.2. A partial listing from this definition includes: dredged spoil, solid waste, sewage, garbage, sewage sludge, chemical wastes, biological materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial or municipal waste.

"Project Area" means:

- The areas on the construction site where storm water discharges originate and flow toward the point of discharge into the receiving waters (including areas where excavation, site development, or other ground disturbance activities occur) and the immediate vicinity. (Example: 1. Where bald eagles nest in a tree that is on or bordering a construction site and could be disturbed by the construction activity or where grading causes storm water to flow into a small wetland or other habitat that is on the site that contains listed species.)
- The areas where storm water discharges flow from the construction site to the point of discharge into receiving waters. (Example: Where storm water flows into a ditch, swale, or gully that leads to receiving waters and where listed species (such as amphibians) are found in the ditch, swale, or gully.)
- The areas where storm water from construction activities discharge into receiving waters and the areas in the immediate vicinity of the point of discharge. (Example: Where storm water from construction activities discharges into a stream segment that is known to harbor listed aquatic species.)
- The areas where storm water BMPs will be constructed and operated, including any areas where storm water flows to and from BMPs. (Example: Where a storm water retention pond would be built.)
- The areas upstream and /or downstream from construction activities discharges into a stream segment that may be affected by the said discharges. (Example: Where sediment discharged to a receiving stream settles downstream and impacts a breeding area of a listed aquatic species.)

"Receiving water" means the "Water of the United States" as defined in 40 CFR §122.2 into which the regulated storm water discharges.

"Runoff coefficient" means the fraction of total rainfall that will appear at the conveyance as runoff.

"Semi-Arid Areas" means areas with an average annual rainfall of 10 to 20 inches.

"Site" means the land or water area where any "facility or activity" is physically located or conducted, including adjacent land used in connection with the facility or activity.

"Small Construction Activity" is defined at 40 CFR §122.26(b)(15) and incorporated here by reference. A small construction activity includes clearing, grading, and excavating resulting in a land disturbance that will disturb equal to or greater than one (1) acre and less than five (5) acres of land or will disturb less than one (1) acre of total land area but is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than one (1) acre and less than five (5) acres. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site.

"Storm Water" means storm water runoff, snow melt runoff, and surface runoff and drainage.

"Storm Water Discharge-Related Activities" as used in this permit, include: activities that cause, contribute to, or result in storm water point source pollutant discharges, including but not limited to: excavation, site development, grading and other surface disturbance activities; and measures to control storm water including the siting, construction and operation of BMPs to control, reduce or prevent storm water pollution.

"Total Maximum Daily Load" or "TMDL" means the sum of the individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background. If a receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the LAs for any nonpoint sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure.

"Waters of the United States" is as defined at 40 CFR §122.2.

"Wetland" means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

ACRONYMS

BMP - Best Management Practices

CGP - Construction General Permit

CFR - Code of Federal Regulations

CWA - Clean Water Act

EPA - United States Environmental Protection Agency

ESA - Endangered Species Act

FWS - United States Fish and Wildlife Service

MS4 - Municipal Separate Storm Sewer System

MSGP - Multi-Sector General Permit

NHPA - National Historic Preservation Act

NMFS - United States National Marine Fisheries Service

NOI - Notice of Intent

NOT - Notice of Termination

NPDES - National Pollutant Discharge Elimination System

POTW - Publicly Owned Treatment Works

SHPO - State Historic Preservation Officer

SWPPP - Storm Water Pollution Prevention Plan

THPO - Tribal Historic Preservation Officer

TMDL - Total Maximum Daily Load

WQS - Water Quality Standard

Appendix B - Permit Areas Eligible for Coverage

Permit coverage for storm water discharges from construction activity occurring within the following areas is provided by legally separate and distinctly numbered permits:

1. EPA Region 1: CT, MA, ME, NH, RI, VT

US EPA, Region 01
Office of Ecosystem Protection
NPDES Storm Water Program
1 Congress St, Suite 1100 (CMU)
Boston, MA 02114-2023

The States of Connecticut, Maine, Rhode Island, and Vermont are the NPDES Permitting Authority for the majority of discharges within their respective states. The 1998 CGP was issued in the State of Massachusetts on February 17, 1998 (63 FR 78116) and the terms and conditions of the 1998 permit are effective for large construction activities in Massachusetts until further noticed. EPA will reissue this permit for the State of Massachusetts and for Indian Country within the State of Massachusetts for both large and small construction activities at a future date.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
CTR10000I	Indian country within the State of Connecticut
NHR100000	State of New Hampshire
RIR10000I	Indian country within the State of Rhode Island
VTR10000F	Federal Facilities in the State of Vermont

2. EPA Region 2: NJ, NY, PR, VI

For NJ, NY, and VI:

US EPA, Region 02
NPDES Storm Water Program
290 Broadway, 24th Floor
New York, NY 10007-1866

For PR:

US EPA, Region 02
Caribbean Environmental Protection Division
NPDES Storm Water Program
1492 Ponce de Leon Ave
Central Europa Building, Suite 417
San Juan, PR 00907-4127

The State of New York is the NPDES Permitting Authority for the majority of discharges within its state. The State of New Jersey and the Virgin Islands are the NPDES Permitting Authority for all discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
NYR10000I	Indian country within the State of New York
PRR100000	The Commonwealth of Puerto Rico

3. EPA Region 3: DE, DC, MD, PA, VA, WV

US EPA, Region 03
NPDES Storm Water Program
1650 Arch St
Philadelphia, PA 19103

The State of Delaware is the NPDES Permitting Authority for the majority of discharges within its state. Maryland, Pennsylvania, Virginia, and West Virginia are the NPDES Permitting Authority for all discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
DCR100000	The District of Columbia
DER10000F	Federal Facilities in the State of Delaware

4. EPA Region 4: AL, FL, GA, KY, MS, NC, SC, TN

US EPA, Region 04
Water Management Division
NPDES Storm Water Program
61 Forsyth St SW
Atlanta, GA 30303-3104

Coverage Not Available. Construction activities in Region 4 must obtain permit coverage under an alternative permit.

5. EPA Region 5: IL, IN, MI, MN, OH, WI

US EPA, Region 05
NPDES & Technical Support
NPDES Storm Water Program
77 W Jackson Blvd
(WN-16J)
Chicago, IL 60604-3507

The States of Michigan, Minnesota, and Wisconsin are the NPDES Permitting Authority for the majority of discharges within their respective states. The States of Illinois, Indiana, and Ohio are the NPDES Permitting Authorities for all discharges within their respective states.

Permit No.	Areas of coverage/where EPA is Permitting Authority
MIR10000I	Indian country within the State of Michigan
MNR10000I	Indian country within the State of Minnesota
WIR10000I	Indian country within the State of Wisconsin, except the Sokaogon Chippewa (Mole Lake) Community.

6. EPA Region 6: AR, LA, OK, TX, NM (except see Region 9 for Navajo lands, and see Region 8 for Ute Mountain Reservation lands)

US EPA, Region 06
NPDES Storm Water Program
1445 Ross Ave, Suite 1200
Dallas, TX 75202-2733

The States of Louisiana, Oklahoma, and Texas are the NPDES Permitting Authority for the majority of discharges within their respective state. The State of Arkansas is the NPDES Permitting Authority for all discharges within its respective state.

Permit No.	Areas of coverage/where EPA is Permitting Authority
LAR15000I	Indian country within the State of Louisiana
NMR150000	The State of New Mexico, except Indian country
NMR15000I	Indian country within the State of New Mexico, except Navajo Reservation Lands that are covered under Arizona permit AZR10000I and Ute Mountain Reservation Lands that are covered under Colorado permit COR10000I.
OKR15000I	Indian country within the State of Oklahoma
OKR15000F	Discharges in the State of Oklahoma that are not under the authority of the Oklahoma Department of Environmental Quality, including activities associated with with oil and gas exploration, drilling, operations, and pipelines (includes SIC Groups 13 and 46, and SIC codes 492 and 5171), and point source discharges associated with agricultural production, services, and silviculture (includes SIC Groups 01, 02, 07, 08, 09).
TXR15000F	Discharges in the State of Texas that are not under the authority of the Texas Commission on Environmental Quality (formerly TNRCC), including activities associated with the exploration, development, or production of oil or gas or geothermal resources, including transportation of crude oil or natural gas by pipeline.
TXR15000I	Indian country within the State of Texas.

7. EPA Region 7: IA, KS, MO, NE (except see Region 8 for Pine Ridge Reservation Lands)

US EPA, Region 07
NPDES Storm Water Program
901 N 5th St
Kansas City, KS 66101

The States of Iowa, Kansas, and Nebraska are the NPDES Permitting Authority for the majority of discharges within their respective states. The State of Missouri is the NPDES Permitting Authority for all discharges within its state.

Permit No.	Areas of coverage/where EPA is Permitting Authority
IAR10000I	Indian country within the State of Iowa
KSR10000I	Indian country within the State of Kansas
NER10000I	Indian country within the State of Nebraska, except Pine Ridge Reservation lands (see Region 8)

8. EPA Region 8: CO, MT, ND, SD, WY, UT (except see Region 9 for Goshute Reservation and Navajo Reservation Lands), the Ute Mountain Reservation in NM, and the Pine Ridge Reservation in NE.

US EPA, Region 08
NPDES Storm Water Program
999 18th St, Suite 300
(EPR-EP)
Denver, CO 80202-2466

The States of Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of coverage/where EPA is Permitting Authority
COR10000F	Federal Facilities in the State of Colorado, except those located on Indian country
COR10000I	Indian country within the State of Colorado, as well as the portion of the Ute Mountain Reservation located in New Mexico
MTR10000I	Indian country within the State of Montana
NDR10000I	Indian country within the State of North Dakota, as well as that portion of the Standing Rock Reservation located in South Dakota (except for the portion of the lands within the former boundaries of the Lake Traverse Reservation which is covered under South Dakota permit SDR10000I listed below)
SDR10000I	Indian country within the State of South Dakota, as well as the portion of the Pine Ridge Reservation located in Nebraska and the portion of the lands within the former boundaries of the Lake Traverse Reservation located in North Dakota (except for the Standing Rock Reservation which is covered under North Dakota permit NDR10000I listed above)
UTR10000I	Indian country within the State of Utah, except Goshute and Navajo Reservation lands (see Region 9)
WYR10000I	Indian country within the State of Wyoming

9. EPA Region 9: CA, HI, NV, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, the Goshute Reservation in UT and NV, the Navajo Reservation in UT, NM, and AZ, the Duck Valley Reservation in ID, and the Fort McDermitt Reservation in OR.

US EPA, Region 09
NPDES Storm Water Program
75 Hawthorne St
San Francisco, CA 94105-3901

The States of Arizona, California and Nevada are the NPDES Permitting Authority for the majority of discharges within their respective states. The State of Hawaii is the NPDES Permitting Authority for all discharges within its state.

Permit No.	Areas of coverage/where EPA is Permitting Authority
ASR100000	The Island of American Samoa
AZR10000I	Indian country within the State of Arizona, as well as Navajo Reservation lands in New Mexico and Utah
CAR10000I	Indian country within the State of California
GUR100000	The Island of Guam
JAR100000	Johnston Atoll
MWR100000	Midway Island and Wake Island
NIR100000	Commonwealth of the Northern Mariana Islands
NVR10000I	Indian country within the State of Nevada, as well as the Duck Valley Reservation in Idaho, the Fort McDermitt Reservation in Oregon and the Goshute Reservation in Utah

10. EPA Region 10: AK, WA, ID (except see Region 9 for Duck Valley Reservation Lands), and OR (except see Region 9 for Fort McDermitt Reservation).

US EPA, Region 10
NPDES Storm Water Program
1200 6th Ave (OW-130)
Seattle, WA 98101-1128
Phone: (206) 553-6650

The States of Oregon and Washington are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of coverage/where EPA is Permitting Authority
AKR100000	The State of Alaska, except Indian country
AKR10000I	Indian country within the state of Alaska
IDR100000	The State of Idaho, except Indian country
IDR10000I	Indian country within the State of Idaho, except Duck Valley Reservation lands (see Region 9)
ORR10000I	Indian country within the State of Oregon, except Fort McDermitt Reservation lands (see Region 9)
WAR10000F	Federal Facilities in the State of Washington, except those located on Indian country
WAR10000I	Indian country within the State of Washington

Appendix C - Endangered Species Act Review Procedures

You must meet at least one of the six criteria in Subpart 1.3.C.6 to be eligible for coverage under this permit. You must follow the procedures in this Appendix to assess the potential effects of storm water discharges and storm water discharge-related activities on listed species and their critical habitat. When evaluating these potential effects, operators must evaluate the entire project area.

For purposes of this Appendix, the term "project area" is inclusive of the term "Action Area." Action area is defined in 50 CFR §402.02 as all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action. This includes areas beyond the footprint of the construction area that may be affected by storm water discharges and storm water discharge related activities. "Project area" is defined in Appendix A.

(Operators who are eligible and able to certify eligibility under Criterion B, C, D, or F of Subpart 1.3.C.6 because of a previously issued ESA section 10 permit, a previously completed ESA section 7 consultation, or because the operator's activities were already addressed in another operator's certification of eligibility may proceed directly to Step Four.)

Step One: Determine if Listed Threatened or Endangered Species are Present On or Near Your Project Area

You must determine, to the best of your knowledge, whether listed species are located on or near your project area. To make this determination, you should:

- Determine if listed species are in your county or township. The local offices of the U.S. Fish and Wildlife Service (FWS), National Marine Fisheries Service (NMFS), and State or Tribal Heritage Centers often maintain lists of federally listed endangered or threatened species on their internet sites. Visit www.epa.gov/npdes/stormwater/cgp to find the appropriate site for your state or check with your local office. In most cases, these lists allow you to determine if there are listed species in your county or township.
- If there are listed species in your county or township, check to see if critical habitat has been designated and if that area overlaps or is near your project area.
- Contact your local FWS, NMFS, or State or Tribal Heritage Center to determine if the listed species could be found on or near your project area and if any critical habitat areas have been designated that overlap or are near your project area. Critical habitat areas maybe designated independently from the listed species for your county, so even if there are no listed species in your county or township, you must still contact one of the agencies mentioned above to determine if there are any critical habitat areas on or near your project area.

You can also find critical habitat designations and associated requirements at 50 CFR Parts 17 and 226. http://www.access.gpo.gov.

- If there are no listed species in your county or township, no critical habitat areas on or near your project area, or if your local FWS, NMFS, or State or Tribal Heritage Center indicates that listed species are not a concern in your part of the county or township, you may check box A on the Notice of Intent Form.
- If there are listed species and if your local FWS, NMFS, or State or Tribal Heritage Center indicates that these species could exist on or near your project area, you will need to do one or more of the following:
    - Conduct visual inspections: This method may be particularly suitable for construction sites that are smaller in size or located in non-natural settings such as highly urbanized areas or industrial parks where there is little or no natural habitat, or for construction activities that discharge directly into municipal storm water collection systems.
    - Conduct a formal biological survey. In some cases, particularly for larger construction sites with extensive storm water discharges, biological surveys may be an appropriate way to assess whether species are located on or near the project area and whether there are likely adverse effects to such species. Biological surveys are frequently performed by environmental consulting firms. A biological survey may in some cases be useful in conjunction with Steps Two, Three, or Four of these instructions.
    - Conduct an environmental assessment under the National Environmental Policy Act (NEPA). Such reviews may indicate if listed species are in proximity to the project area. Coverage under the CGP does not trigger such a review because the CGP does not regulate new sources (that is, dischargers subject to New Source Performance Standards under section 306 of the Clean Water Act), and is thus statutorily

exempted from NEPA. See CWA section 511(c). However, some construction activities might require review under NEPA for other reasons such as federal funding or other federal involvement in the project.

If listed threatened or endangered species or critical habitat are present in the project area, you must look at impacts to species and/or habitat when following Steps Two through Four. Note that many but not all measures imposed to protect listed species under these steps will also protect critical habitat. Thus, meeting the eligibility requirements of this CGP may require measures to protect critical habitat that are separate from those to protect listed species.

Step Two: Determine if the Construction Activity's Storm Water Discharges or Storm Water Discharge-Related Activities Are Likely to Adversely Affect Listed Threatened or Endangered Species or Designated Critical Habitat

To receive CGP coverage, you must assess whether your storm water discharges or storm water discharge-related activities is likely to adversely affect listed threatened or endangered species or designated critical habitat that are present on or near your project area.

Potential adverse effects from storm water discharges and storm water discharge-related activities include:

- *Hydrological.* Storm water discharges may cause siltation, sedimentation or induce other changes in receiving waters such as temperature, salinity or pH. These effects will vary with the amount of storm water discharged and the volume and condition of the receiving water. Where a storm water discharge constitutes a minute portion of the total volume of the receiving water, adverse hydrological effects are less likely. Construction activity itself may also alter drainage patterns on a site where construction occurs that can impact listed species or critical habitat.
- *Habitat.* Excavation, site development, grading, and other surface disturbance activities from construction activities, including the installation or placement of storm water BMPs, may adversely affect listed species or their habitat. Storm water may drain or inundate listed species habitat.
- *Toxicity.* In some cases, pollutants in storm water may have toxic effects on listed species.

The scope of effects to consider will vary with each site. If you are having difficulty determining whether your project is likely to adversely affect listed species or critical habitat, or one of the Services has already raised concerns to you, you must contact the appropriate office of the FWS, NMFS or Natural Heritage Center for assistance. If adverse effects are not likely, then you may check box E on the NOI form and apply for coverage under the CGP. If the discharge may adversely effect listed species or critical habitat, you must follow Step Three.

Step Three: Determine if Measures Can Be Implemented to Avoid Adverse Effects

If you make a preliminary determination that adverse effects are likely to occur, you can still receive coverage under Criterion E of Subpart 1.3.C.6 of the CGP if appropriate measures are undertaken to avoid or eliminate the likelihood of adverse effects prior to applying for CGP coverage. These measures may involve relatively simple changes to construction activities such as re-routing a storm water discharge to bypass an area where species are located, relocating BMPs, or by changing the "footprint" of the construction activity. You should contact the FWS and/or NMFS to see what appropriate measures might be suitable to avoid or eliminate the likelihood of adverse impacts to listed species and/or critical habitat. (See 50 CFR §402.13(b)). This can entail the initiation of informal consultation with the FWS and/or NMFS (described in more detail in Step Four).

If you adopt measures to avoid or eliminate adverse affects, you must continue to abide by those measures for the duration of the construction project and coverage under the CGP. These measures must be described in the SWPPP and are enforceable CGP conditions and/or conditions for meeting the eligibility criteria in Subpart 1.3. If appropriate measures to avoid the likelihood of adverse effects are not available, you must follow Step Four.

Step Four: Determine if the Eligibility Requirements of Criterion B, C, D, or F of Subpart 1.3.C.6 Can Be Met

Where adverse effects are likely, you must contact the FWS and/or NMFS. You may still be eligible for CGP coverage if any likely adverse effects can be addressed through meeting Criterion B, C, D, or F of Subpart 1.3.C.6 of the CGP. These criteria are as follows:

1. *An ESA Section 7 Consultation Is Performed for Your Activity (See Criterion B or C of Subpart 1.3.C.6 of the CGP).*

Formal or informal ESA section 7 consultation is performed with the FWS and/or NMFS that addresses the effects of your storm water discharges and storm water discharge-related activities on federally-listed and threatened

species and designated critical habitat. FWS and/or NMFS may request that consultation take place if any actions are identified that may affect listed species or critical habitat. In order to be eligible for coverage under this permit, consultation must result in a "no jeopardy opinion" or a written concurrence by the Service(s) on a finding that your storm water discharge(s) and storm water discharge-related activities are not likely to adversely affect listed species or critical habitat (For more information on consultation, see 50 CFR §402). If you receive a "jeopardy opinion," you may continue to work with the FWS and/or NMFS and your permitting authority to modify your project so that it will not jeopardize listed species or designated critical habitat.

Most consultations are accomplished through informal consultation. By the terms of this CGP, EPA has automatically designated operators as non-federal representatives for the purpose of conducting informal consultations. See Subpart 1.3.C.6 and 50 CFR §402.08 and §402.13. When conducting informal ESA section 7 consultation as a non-federal representative, you must follow the procedures found in 50 CFR Part 402 of the ESA regulations. You must notify FWS and/or NMFS of your intention and agreement to conduct consultation as a non-federal representative.

Consultation may occur in the context of another federal action at the construction site (e.g., where ESA section 7 consultation was performed for issuance of a wetlands dredge and fill permit for the project or where a NEPA review is performed for the project that incorporates a section 7 consultation). Any terms and conditions developed through consultations to protect listed species and critical habitat must be incorporated into the SWPPP. As noted above, operators may, if they wish, initiate consultation with the Services at Step Four.

Whether ESA section 7 consultation must be performed with either the FWS, NMFS or both Services depends on the listed species that may be affected by the operator's activity. In general, NMFS has jurisdiction over marine, estuaries, and anadromous species. Operators should also be aware that while formal section 7 consultation provides protection from incidental takings liability, informal consultation does not.

2. *An Incidental Taking Permit Under Section 10 of the ESA is Issued for the Operators Activity (See Criterion D of Subpart 1.3.C.6 of the CGP).*

Your construction activities are authorized through the issuance of a permit under section 10 of the ESA and that authorization addresses the effects of your storm water discharge(s) and storm water discharge-related activities on federally-listed species and designated critical habitat. You must follow FWS and/or NMFS procedures when applying for an ESA Section 10 permit (see 50 CFR §17.22(b)(1) for FWS and §222.22 for NMFS). Application instructions for section 10 permits for FWS and NMFS can be obtained by accessing the FWS and NMFS websites (http://www.fws.gov and http://www.nmfs.noaa.gov) or by contacting the appropriate FWS and NMFS regional office.

3. *You are Covered Under the Eligibility Certification of Another Operator for the Project Area (See Criterion F of Subpart 1.3.C.6 of the CGP).*

Your storm water discharges and storm water discharge-related activities were already addressed in another operator's certification of eligibility under Criteria A through E of Subpart 1.3.C.6 which also included your project area. For example, a general contractor or developer may have completed and filed an NOI for the entire project area with the necessary Endangered Species Act certifications (criteria A-E), subcontractors may then rely upon that certification and must comply with any conditions resulting from that process. By certifying eligibility under Criterion F of Subpart 1.3.C.6, you agree to comply with any measures or controls upon which the other operator's certification under Criterion B, C, or D of Subpart 1.3.C.6 was based. Certification under Criterion F of Subpart 1.3.C.6 is discussed in more detail in the Fact Sheet that accompanies this permit.

You must comply with any terms and conditions imposed under the eligibility requirements of Criterion A through F to ensure that your storm water discharges and storm water discharge-related activities are protective of listed species and/or critical habitat. Such terms and conditions must be incorporated in the project's SWPPP. If the eligibility requirements of Subpart 1.3.C.6 cannot be met, then you are not eligible for coverage under the CGP. In these instances, you may consider applying to EPA for an individual permit.

Appendix D - Small Construction Waivers and Instructions

These waivers are only available to storm water discharges associated with small construction activities (i.e., 1-5 acres). As the operator of a small construction activity, you may be able to qualify for a waiver in lieu of needing to obtain coverage under this general permit based on: (A) a low rainfall erosivity factor, (B) a TMDL analysis, or (C) an equivalent analysis that determines allocations for small construction sites are not needed. Each operator, otherwise needing permit coverage, must notify EPA of its intention for a waiver. It is the responsibility of those individuals wishing to obtain a waiver from coverage under this general permit to submit a complete and accurate waiver certification as described below. Where the operator changes or another is added during the construction project, the new operator must also submit a waiver certification to be waived.

A. Rainfall Erosivity Waiver

Under this scenario the small construction project's rainfall erosivity factor calculation ("R" in the Revised Universal Soil Loss Equation) is less than 5 during the period of construction activity. The operator must certify to the Permitting Authority that construction activity will occur only when the rainfall erosivity factor is less than 5. The period of construction activity begins at initial earth disturbance and ends with final stabilization. Where vegetation will be used for final stabilization, the date of installation of a stabilization practice that will provide interim non-vegetative stabilization can be used for the end of the construction period, provided the operator commits (as a condition of waiver eligibility) to periodically inspect and properly maintain the area until the criteria for final stabilization as defined in the construction general permit have been met. If use of this interim stabilization eligibility condition was relied on to qualify for the waiver, signature on the waiver with its certification statement constitutes acceptance of and commitment to complete the final stabilization process. The operator must submit a waiver certification to EPA prior to commencing construction activities.

> *Note: The rainfall erosivity factor "R" is determined in accordance with Chapter 2 of Agriculture Handbook Number 703, Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE), pages 21–64, dated January 1997; United States Department of Agriculture (USDA), Agricultural Research Service.*

EPA funded a cooperative agreement with Texas A&M University to develop an online rainfall erosivity calculator. You can access the calculator from EPA's website at: www.epa.gov/npdes/stormwater/cgp. Use of the calculator allows you to determine potential eligibility for the rainfall erosivity waiver. It may also be useful in determining the time periods during which construction activity could be waived from permit coverage. You may find that moving your construction activity by a few weeks or expediting site stabilization will allow you to qualify for the waiver.

If you are the operator of the construction activity and eligible for a waiver based on low erosivity potential, you must provide the following information on the waiver certification in order to be waived from permitting requirements:

1. Name, address and telephone number of the construction site operators;
2. Name (or other identifier), address, county or similar governmental subdivision, and latitude/longitude of the construction project or site;
3. Estimated construction start and completion (i.e., final stabilization) dates, and total acreage (to the nearest quarter acre) to be disturbed;
4. The rainfall erosivity factor calculation that applies to the active construction phase at your project site; and
5. A statement, signed and dated by an authorized representative as provided in Appendix G, Subsection 11, that certifies that the construction activity will take place during a period when the value of the rainfall erosivity factor is less than five.

At the time of publication, a Low Erosivity Waiver Form is not available. If EPA does create a form, it will be noticed (either directly, by public notice, or by making information available on the Internet at www.epa.gov/npdes/stormwater/cgp.

> *Note: If the R factor is 5 or greater, you cannot apply for the rainfall erosivity waiver, and must apply for permit coverage as per Subpart 2.1 of the construction general permit, unless you qualify for the Water Quality Waiver as described below.*

If your small construction project continues beyond the projected completion date given on the waiver certification, you must recalculate the rainfall erosivity factor for the new project duration. If the R factor is below five (5), you

must update all applicable information on the waiver certification and retain a copy of the revised waiver as part of the site SWPPP. The new waiver certification must be submitted prior to the projected completion date listed on the original waiver form to assure your exemption from permitting requirements is uninterrupted. If the new R factor is five (5) or above, you must submit an NOI as per Part 2.

B. TMDL Waiver

This waiver is available if EPA has established or approved a TMDL that addresses the pollutant(s) of concern and has determined that controls on storm water discharges from small construction activity are not needed to protect water quality. The pollutant(s) of concern include sediment (such as total suspended solids, turbidity or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the construction activity. Information on TMDLs that have been established or approved by EPA is available from EPA online at http://www.epa.gov/owow/tmdl/ and from state and tribal water quality agencies.

If you are the operator of the construction activity and eligible for a waiver based on compliance with an EPA established or approved TMDL, you must provide the following information on the Waiver Certification form in order to be waived from permitting requirements:

1. Name, address and telephone number of the construction site operator(s);
2. Name (or other identifier), address, county or similar governmental subdivision, and latitude/longitude of the construction project or site;
3. Estimated construction start and completion (i.e., final stabilization) dates, and total acreage (to the nearest quarter acre) to be disturbed;
4. The name of the water body(s) that would be receiving storm water discharges from your construction project;
5. The name and approval date of the TMDL;
6. A statement, signed and dated by an authorized representative as provided in Appendix G, Subsection 11, that certifies that the construction activity will take place and that the storm water discharges will occur, within the drainage area addressed by the TMDL.

C. Equivalent Analysis Waiver

This waiver is available for non-impaired waters only. The operator can develop an equivalent analysis that determines allocations for his small construction site for the pollutant(s) of concern or determines that such allocations are not needed to protect water quality. This waiver requires a small construction operator to develop an equivalent analysis based on existing in-stream concentrations, expected growth in pollutant concentrations from all sources, and a margin of safety.

If you are a construction operator who wants to use this waiver, you must develop your equivalent analysis and provide the following information to be waived from permitting requirements:

1. Name, address and telephone number of the construction site operator(s);
2 Name (or other identifier), address, county or similar governmental subdivision, and latitude/longitude of the construction project or site;
3 Estimated construction start and completion (i.e., final stabilization) dates, and total acreage (to the nearest quarter acre) to be disturbed;
4. The name of the water bodies that would be receiving storm water discharges from your construction project;
5. Your equivalent analysis;
6. A statement, signed and dated by an authorized representative as provided in Appendix G, Subsection 11, that certifies that the construction activity will take place and that the storm water discharges will occur, within the drainage area addressed by the equivalent analysis.

D. Waiver Deadlines and Submissions

1. Waiver certifications must be submitted prior to commencement of construction activities.

2. If you submit a TMDL or equivalent analysis waiver request, you are not waived until EPA approves your request. As such, you may not commence construction activities until receipt of approval from EPA.
3. Late Notifications: Operators are not prohibited from submitting waiver certifications after initiating clearing, grading, excavation activities, or other construction activities. The Agency reserves the right to take enforcement for any unpermitted discharges or permit noncompliance that occur between the time construction commenced and waiver authorization is granted.

Submittal of a waiver certification is an optional alternative to obtaining permit coverage for discharges of storm water associated with small construction activity, provided you qualify for the waiver. Any discharge of storm water associated with small construction activity not covered by either a permit or a waiver may be considered an unpermitted discharge under the Clean Water Act. As mentioned above, EPA reserves the right to take enforcement for any unpermitted discharges or permit noncompliance that occur between the time construction commenced and either discharge authorization is granted or a complete and accurate waiver certification is submitted. EPA may notify any operator covered by a waiver that they must apply for a permit. EPA may notify any operator who has been in non-compliance with a waiver that they may no longer use the waiver for future projects. Any member of the public may petition EPA to take action under this provision by submitting written notice along with supporting justification.

Complete and accurate Rainfall Erosivity waiver certifications must be sent to the following address:

Regular U.S. Mail Delivery

EPA Storm Water Notice Processing Center
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Overnight/Express Mail Delivery

EPA Storm Water Notice Processing Center
Room 7420
U.S. EPA
1201Constitution Avenue, NW
Washington, DC 20004

Complete and accurate TMDL or equivalent analysis waiver requests must be sent to the applicable EPA Region office specified in Appendix B.

Appendix E - Notice of Intent Form and Instructions

From the effective date of this permit, operators are to use the Notice of Intent Form contained in this Appendix to obtain permit coverage.

This Form Replaces Form 3510-9 (8-98)
Refer to the Following Pages for Instructions

Form Approved OMB Nos. 2040-0188 and 2040-0211

NPDES Form

EPA

United States Environmental Protection Agency
Washington, DC 20460

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under an NPDES General Permit

Submission of this Notice of Intent (NOI) constitutes notice that the party identified in Section II of this form requests authorization to discharge pursuant to the NPDES Construction General Permit (CGP) permit number identified in Section I of this form. Submission of this NOI also constitutes notice that the party identified in Section II of this form meets the eligibility requirements of the CGP for the project identified in Section III of this form. Permit coverage is required prior to commencement of construction activity until you are eligible to terminate coverage as detailed in the CGP. To obtain authorization, you must submit a complete and accurate NOI form. Refer to the instructions at the end of this form.

I. Permit Number

II. Operator Information

Name:

IRS Employer Identification Number (EIN): -

Mailing Address:

Street:

City: State: Zip Code: -

Phone: - - Fax (optional): - -

E-mail (optional):

III. Project/Site Information

Project/Site Name:

Project Street/Location:

City: State: Zip Code: -

County or similar government subdivision:

Latitude/Longitude (Use one of three possible formats, and specify method)

Latitude
1. __° __′ __″ N (degrees, minutes, seconds)
2. __° __.__′ N (degrees, minutes, decimal)
3. __.____° N (decimal)

Longitude
1. ___° __′ __″ W (degrees, minutes, seconds)
2. ___° __.__′ W (degrees, minutes, decimal)
3. ___.____° W (decimal)

Method: U.S.G.S. topographic map EPA web site GPS Other:
• If you used a U.S.G.S. topographic map, what was the scale:

Project Located in Indian country? Yes No
If so, name of Reservation or if not part of a Reservation, put "Not Applicable":

Estimated Project Start Date: / / (Month Date Year)

Estimated Project Completion Date: / / (Month Date Year)

Estimated Area to be Disturbed (to the nearest quarter acre): .

IV. SWPPP Information

Has the SWPPP been prepared in advance of filing this NOI? Yes No

Location of SWPPP for viewing: Address in Section II Address in Section III Other

If Other:

SWPPP Street:

City:

State: Zip Code: -

SWPPP Contact Information (if different than that in Section II):

Name:

Phone: - - Fax (optional): - -

E-mail (optional):

V. Discharge Information

Identify the name(s) of waterbodies to which you discharge.

Is this discharge consistent with the assumptions and requirements of applicable EPA approved or established TMDL(s)?

Yes No

VI. Endangered Species Information

Under which criterion of the permit have you satisfied your ESA eligibility obligations?

A B C D E F

- If you select criterion F, provide permit tracking number of operator under which you are certifying eligibility:

VII. Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name:

Print Title:

Signature:

Date:

Instructions for Completing EPA Form 3510-9

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under an NPDES General Permit

NPDES Form | This Form Replaces Form 3510-9 (8/98) | Form Approved OMB Nos. 2040-0188 and 2040-0211

Who Must File an NOI Form
Under the provisions of the Clean Water Act, as amended (33 U.S.C. 1251 et.seq.; the Act), federal law prohibits storm water discharges from certain construction activities to waters of the U.S. unless that discharge is covered under a National Pollutant Discharge Elimination System (NPDES) Permit. Operator(s) of construction sites where one or more acres are disturbed, smaller sites that are part of a larger common plan of development or sale where there is a cumulative disturbance of at least one acre, or any other site specifically designated by the Director, must submit an NOI to obtain coverage under an NPDES general permit. Each person, firm, public organization, or any other entity that meets either of the following criteria must file this form: (1) they have operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or (2) they have day-to-day operational control of those activities at the project necessary to ensure compliance with SWPPP requirements or other permit conditions. If you have questions about whether you need an NPDES storm water permit, or if you need information to determine whether EPA or your state agency is the permitting authority, refer to *www.epa.gov/npdes/stormwater/cgp* or telephone the Storm Water Notice Processing Center at (866) 352-7755.

Where to File NOI Form
See the applicable CGP for information on where to send your completed NOI form.

Completing the Form
Obtain and read a copy of the appropriate EPA Storm Water Construction General Permit for your area. To complete this form, type or print, using uppercase letters, in the appropriate areas only. Please place each character between the marks (abbreviate if necessary to stay within the number of characters allowed for each item). Use one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions on this form, refer to *www.epa.gov/npdes/stormwater/cgp* or telephone the Storm Water Notice Processing Center at (866) 352-7755. Please submit original document with signature in ink - do not send a photocopied signature.

Section I. Permit Number
Provide the number of the permit under which you are applying for coverage (see Appendix B of the general permit for the list of eligible permit numbers).

Section II. Operator Information
Provide the legal name of the person, firm, public organization, or any other entity that operates the project described in this application. An operator of a project is a legal entity that controls at least a portion of site operations and is not necessarily the site manager. Provide the employer identification number (EIN from the Internal Revenue Service; IRS), also commonly referred to as your taxpayer ID. If the applicant does not have an EIN enter "NA" in the space provided. Also provide the operator's mailing address, telephone number, fax number (optional) and e-mail address (if you would like to be notified via e-mail of NOI approval when available). Correspondence for the NOI will be sent to this address.

Section III. Project/Site Information
Enter the official or legal name and complete street address, including city, state, zip code, and county or similar government subdivision of the project or site. If the project or site lacks a street address, indicate the general location of the site (e.g., Intersection of State Highways 61 and 34). Complete site information must be provided for permit coverage to be granted.

The applicant must also provide the latitude and longitude of the facility either in degrees, minutes, seconds; degrees, minutes, decimal; or decimal format. The latitude and longitude of your facility can be determined in several different ways, including through the use of global positioning system (GPS) receivers, U.S. Geological Survey (U.S.G.S.) topographic or quadrangle maps, and EPA's web-based siting tools, among others. Refer to *www.epa.gov/npdes/stormwater/cgp* for further guidance on the use of these methodologies. For consistency, EPA requests that measurements be taken from the approximate center of the construction site. Applicants must specify which method they used to determine latitude and longitude. If a U.S.G.S. topographic map is used, applicants are required to specify the scale of the map used.

Indicate whether the project is in Indian country, and if so, provide the name of the Reservation. If the project is in Indian Country Lands that are not part of a Reservation, indicate "not applicable" in the space provided.

Enter the estimated construction start and completion dates using four digits for the year (i.e., 05/27/1998). Enter the estimated area to be disturbed including but not limited to: grubbing, excavation, grading, and utilities and infrastructure installation. Indicate to the nearest quarter acre. Note: 1 acre = 43,560 sq. ft.

Section IV. SWPPP Information
Indicate whether or not the SWPPP was prepared in advance of filing the NOI form. Check the appropriate box for the location where the SWPPP may be viewed. Provide the name,

fax number (optional), and e-mail address (optional) of the contact person if different than that listed in Section II of the NOI form.

Section V. Discharge Information

Enter the name(s) of receiving waterbodies to which the project's storm water will discharge. These should be the first bodies of water that the discharge will reach. (Note: If you discharge to more than one waterbody, please indicate all such waters in the space provided and attach a separate sheet if necessary.) For example, if the discharge leaves your site and travels through a roadside swale or a storm sewer and then enters a stream that flows to a river, the stream would be the receiving waterbody. Waters of the U.S. include lakes, streams, creeks, rivers, wetlands, impoundments, estuaries, bays, oceans, and other surface bodies of water within the confines of the U.S. and U.S. coastal waters. Waters of the U.S. do not include man-made structures created solely for the purpose of wastewater treatment. U.S. Geological Survey topographical maps may be used to make this determination. If the map does not provide a name, use a format such as "unnamed tributary to Cross Creek". If you discharge into a municipal separate storm sewer system (MS4), you must identify the waterbody into which that portion of the storm sewer discharges. That information should be readily available from the operator of the MS4.

Indicate whether your storm water discharges from construction activities will be consistent with the assumptions and requirements of applicable EPA approved or established TMDL(s). To answer this question, refer to *www.epa.gov/npdes/stormwater/cgp* for state- and regional-specific TMDL information related to the construction general permit. You may also have to contact your EPA regional office or state agency. If there are no applicable TMDLs or no related requirements, please check the "yes" box in the NOI form.

Section VI. Endangered Species Information

Indicate for which criterion (i.e., A, B, C, D, E, or F) of the permit the applicant is eligible with regard to protection of federally listed endangered and threatened species, and designated critical habitat. See Part 1.3.C.6 and Appendix C of the permit. If you select criterion F, provide the permit tracking number of the operator under which you are certifying eligibility. The permit tracking number is the number assigned to the operator by the Storm Water Notice Processing Center after EPA acceptance of a complete NOI.

Section VII. Certification Information

All applications, including NOIs, must be signed as follows:
For a corporation: By a responsible corporate officer. For the purpose of this Section, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

Include the name and title of the person signing the form and the date of signing. An unsigned or undated NOI form will not be considered eligible for permit coverage.

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 3.7 hours. This estimate includes time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form, including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch 2136, U.S. Environmental Protection, Agency, 1200 Pennsylvania Avenue, NW, Washington, D.C. 20460. Include the OMB control number on any correspondence. Do not send the completed form to this address.

Appendix F - Notice of Termination Form and Instructions

From the effective date of this permit, operators are to use the Notice of Termination Form contained in this Appendix to terminate permit coverage.

This Form Replaces Form 3517-7 (8-98)
Refer to the Following Page for Instructions

Form Approved OMB Nos. 2040-0086 and 2040-0211

NPDES Form

United States Environmental Protection Agency
Washington, DC 20460

Notice of Termination (NOT) of Coverage Under an NPDES General Permit for Storm Water Discharges Associated with Construction Activity

Submission of this Notice of Termination constitutes notice that the party identified in Section II of this form is no longer authorized to discharge storm water associated with construction activity under the NPDES program from the site identified in Section III of this form. All necessary information must be included on this form. Refer to the instructions at the end of this form.

I. Permit Information

NPDES Storm Water General Permit Tracking Number: _____

Reason for Termination (Check only one):

Final stabilization has been achieved on all portions of the site for which you are responsible.

Another operator has assumed control, according to Appendix G, Section 11.C of the CGP, over all areas of the site that have not been finally stabilized.

Coverage under an alternative NPDES permit has been obtained.

For residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

II. Operator Information

Name: _____

IRS Employer Identification Number (EIN): ___ - _____

Mailing Address:

Street: _____

City: _____ State: ___ Zip Code: _____ - _____

Phone: ___ - ___ - ___ Fax (optional): ___ - ___ - ___

E-mail (optional): _____

III. Project/Site Information

Project/Site Name: _____

Project Street/Location: _____

City: _____ State: ___ Zip Code: _____ - _____

County or similar government subdivision: _____

IV. Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name:

Print Title:

Signature:

Date:

Instructions for Completing EPA Form 3510-13

Notice of Termination (NOT) of Coverage Under an NPDES General Permit for Storm Water Discharges Associated with Construction Activity

NPDES Form This Form Replaces Form 3517-7 (8-98) Form Approved OMB Nos. 2040-0086 and 2040-0211

Who May File an NOT Form

Permittees who are presently covered under the EPA-issued National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity may submit an NOT form when final stabilization has been achieved on all portions of the site for which you are responsible; another operator has assumed control in accordance with Appendix G, Section 11.C of the General Permit over all areas of the site that have not been finally stabilized; coverage under an alternative NPDES permit has been obtained; or for residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

"Final stabilization" means that all soil disturbing activities at the site have been completed and that a uniform perennial vegetative cover with a density of at least 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed. See "final stabilization" definition in Appendix A of the Construction General Permit for further guidance where background native vegetation covers less than 100 percent of the ground, in arid or semi-arid areas, for individual lots in residential construction, and for construction projects on land used for agricultural purposes.

Completing the Form

Type or print, using uppercase letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions about this form, refer to *www.epa.gov/npdes/stormwater/cgp* or telephone the Storm Water Notice Processing Center at (866) 352-7755. Please submit original document with signature in ink - do not send a photocopied signature.

Section I. Permit Number

Enter the existing NPDES Storm Water General Permit Tracking Number assigned to the project by EPA's Storm Water Notice Processing Center. If you do not know the permit tracking number, refer to *www.epa.gov/npdes/stormwater/cgp* or contact the Storm Water Notice Processing Center at (866) 352-7755.

Indicate your reason for submitting this Notice of Termination by checking the appropriate box. Check only one:

Final stabilization has been achieved on all portions of the site for which you are responsible.

Another operator has assumed control according to Appendix G, Section 11.C over all areas of the site that have not been finally stabilized.

Coverage under an alternative NPDES permit has been obtained.

For residential construction only, if temporary stabilization has been completed and the residence has been transferred to the homeowner.

Section II. Operator Information

Provide the legal name of the person, firm, public organization, or any other entity that operates the project described in this application and is covered by the permit tracking number identified in Section I. The operator of the project is the legal entity that controls the site operation, rather than the site manager. Provide the employer identification number (EIN from the Internal Revenue Service; IRS). If the applicant does not have an EIN enter "NA" in the space provided. Enter the complete mailing address and telephone number of the operator. *Optional:* enter the fax number and e-mail address of the operator.

Section III. Project/Site Information

Enter the official or legal name and complete street address, including city, state, zip code, and county or similar government subdivision of the project or site. If the project or site lacks a street address, indicate the general location of the site (e.g., Intersection of State Highways 61 and 34). Complete site information must be provided for termination of permit coverage to be valid.

Section IV. Certification Information

All applications, including NOIs, must be signed as follows:

For a corporation: By a responsible corporate officer. For the purpose of this Part, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

Include the name and title of the person signing the form and the date of signing. An unsigned or undated NOT form will not be considered valid termination of permit coverage.

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 0.5 hours per notice, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, 2136, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460. Include the OMB number on any correspondence. Do not sent the completed form to this address.

Appendix G - Standard Permit Conditions

STANDARD PERMIT CONDITIONS

1. Duty To Comply

You must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

A. You must comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

B. The Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. §2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. §3701 note) (currently $27,500 per day for each violation).

   The Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than 2 years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

C. Any person may be assessed an administrative penalty by the Administrator for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Pursuant to 40 CFR Part 19 and the Act, administrative penalties for Class I violations are not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. §2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. §3701 note) (currently $11,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $27,500). Pursuant to 40 CFR Part 19 and the Act, penalties for Class II violations are not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. §2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. §3701 note) (currently $11,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $137,500).

2. Duty to Reapply

If you wish to continue an activity regulated by this permit after the expiration date of this permit, you must apply for and obtain a new permit.

3. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for you in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. Duty to Mitigate

You must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. Proper Operation and Maintenance

You must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by you to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by you only when the operation is necessary to achieve compliance with the conditions of this permit.

6. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. Your filing of a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

7. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privileges.

8. Duty to Provide Information

You must furnish to EPA, within a reasonable time, any information which EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. You must also furnish to EPA upon request, copies of records required to be kept by this permit.

9. Inspection and Entry

You must allow EPA, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

A. Enter upon your premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

C. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

D. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

10. Monitoring and Records

A. Samples and measurements taken for the purpose of monitoring must be representative of the monitored activity.

B. You must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of EPA at any time.

C. Records of monitoring information must include:

   1. The date, exact place, and time of sampling or measurements;

   2. The individual(s) who performed the sampling or measurements;

   3. The date(s) analyses were performed

4. The individual(s) who performed the analyses;
5. The analytical techniques or methods used; and
6. The results of such analyses.

D. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.

E. The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

11. Signatory Requirements

A. All applications, including NOIs, must be signed as follows:

1. For a corporation: By a responsible corporate officer. For the purpose of this Part, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
2. For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or
3. For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

B. All reports required by this permit, including SWPPPs, must be signed by a person described in Appendix G, Subsection 11.A above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described in Appendix G, Subsection 11.A;
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
3. The signed and dated written authorization is included in the SWPPP. A copy must be submitted to EPA, if requested.

C. Changes to Authorization. If an authorization under Subpart 2.1 is no longer accurate because a different operator has responsibility for the overall operation of the construction site, a new NOI satisfying the requirements of Subpart 2.1 must be submitted to EPA prior to or together with any reports, information, or applications to be signed by an authorized representative. The change in authorization must be submitted within the time frame specified in Subpart 2.2, and sent to the address specified in Subpart 2.3.

D. Any person signing documents required under the terms of this permit must include the following certification:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is,

to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

E. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

12. Reporting Requirements

A. Planned changes. You must give notice to EPA as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR §122.29(b); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR §122.42(a)(1).

B. Anticipated noncompliance. You must give advance notice to EPA of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

C. Transfers. This permit is not transferable to any person except after notice to EPA. EPA may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act. (See 40 CFR §122.61; in some cases, modification or revocation and reissuance is mandatory.)

D. Monitoring reports. Monitoring results must be reported at the intervals specified elsewhere in this permit.

1. Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by EPA for reporting results of monitoring of sludge use or disposal practices.
2. If you monitor any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by EPA.
3. Calculations for all limitations which require averaging of measurements must use an arithmetic mean.

E. Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date.

F. Twenty-four hour reporting.

1. You must report any noncompliance which may endanger health or the environment. Any information must be provided orally within 24 hours from the time you become aware of the circumstances. A written submission must also be provided within five days of the time you become aware of the circumstances. The written submission must contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
2. The following shall be included as information which must be reported within 24 hours under this paragraph.
   a. Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR §122.41(g).)
   b. Any upset which exceeds any effluent limitation in the permit
   c. Violation of a maximum daily discharge limitation for any of the pollutants listed by EPA in the permit to be reported within 24 hours. (See 40 CFR §122.44(g).)

3. EPA may waive the written report on a case-by-case basis for reports under Appendix G, Subsection 12.F.2 if the oral report has been received within 24 hours.

G. Other noncompliance. You must report all instances of noncompliance not reported under Appendix G, Subsections 12.D, 12.E, and 12.F, at the time monitoring reports are submitted. The reports must contain the information listed in Appendix G, Subsection 12.F.

H. Other information. Where you become aware that you failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Permitting Authority, you must promptly submit such facts or information.

13. Bypass

A. Definitions.

1. Bypass means the intentional diversion of waste streams from any portion of a treatment facility

2. Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

B. Bypass not exceeding limitations. You may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Appendix G, Subsections 13.C and 13.D.

C. Notice–

1. Anticipated bypass. If you know in advance of the need for a bypass, you must submit prior notice, if possible at least ten days before the date of the bypass.

2. Unanticipated bypass. You must submit notice of an unanticipated bypass as required in Appendix G, Subsection 12.F (24-hour notice).

D. Prohibition of bypass.

1. Bypass is prohibited, and EPA may take enforcement action against you for bypass, unless:

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

c. You submitted notices as required under Appendix G, Subsection 13.C.

2. EPA may approve an anticipated bypass, after considering its adverse effects, if EPA determines that it will meet the three conditions listed above in Appendix G, Subsection 13.D.1.

14. Upset

A. Definition. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond your reasonable control. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

B. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Appendix G, Subsection 14.C are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

C. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and that you can identify the cause(s) of the upset;

2. The permitted facility was at the time being properly operated; and

3. You submitted notice of the upset as required in Appendix G, Subsection 12.F.2.b(24 hour notice).
4. You complied with any remedial measures required under Appendix G, Section 4.

D. Burden of proof. In any enforcement proceeding, you, as the one seeking to establish the occurrence of an upset, has the burden of proof.

This page was intentionally left blank for duplex printing.

THIS FORM REPLACES PREVIOUS FORM 3510-6 (8-98)
See Reverse for Instructions

Form Approved. OMB No. 2040-0188

NPDES FORM

United States Environmental Protection Agency
Washington, DC 20460

Notice of Intent (NOI) for Storm Water Discharges Associated with CONSTRUCTION ACTIVITY Under a NPDES General Permit

Submission of this Notice of Intent constitutes notice that the party identified in Section I of this form intends to be authorized by a NPDES permit issued for storm water discharges associated with construction activity in the State/Indian Country Land identified in Section II of this form. Submission of this Notice of Intent also constitutes notice that the party identified in Section I of this form meets the eligibility requirements in Part I.B. of the general permit (including those related to protection of endangered species determined through the procedures in Addendum A of the general permit), understands that continued authorization to discharge is contingent on maintaining permit eligibility, and that implementation of the Storm Water Pollution Prevention Plan required under Part IV of the general permit will begin at the time the permittee commences work on the construction project identified in Secion II below. IN ORDER TO OBTAIN AUTHORIZATION, ALL INFORMATION REQUESTED MUST BE INCLUDED ON THIS FORM. SEE INSTRUCTIONS ON BACK OF FORM.

I. Owner/Operator (Applicant) Information

Name: _____ Phone: _____

Address: _____ Status of Owner/Operator: P

City: _____ State: ____ Zip Code: _____–____

II. Project/Site Information

Is the facility located on Indian Country Lands? Yes ☐ No ☐

Project Name: _____

Project Address/Location: _____

City: _____ State: ____ Zip Code: _____–____

Latitude: _____ Longitude: _____ County: _____

Has the Storm Water Pollution Prevention Plan (SWPPP) been prepared? Yes ☐ No ☐

Optional: Address of location of SWPPP for viewing ☐ Address in Section I above ☐ Address in Section II above ☐ Other address (if known) below:

SWPPP Address: _____ Phone: _____

City: _____ State: ____ Zip Code: _____–____

Name of Receiving Water: _____

Estimated Construction Start Date: Month Day Year

Estimated Completion Date: Month Day Year

Estimate of area to be disturbed (to nearest acre): _____

Estimate of Likelihood of Discharge (choose only one):

1. ☐ Unlikely
2. ☐ Once per month
3. ☐ Once per week
4. ☐ Once per day
5. ☐ Continual

Based on instruction provided in Addendum A of the permit, are there any listed endangered or threatened species, or designated critical habitat in the project area?

Yes ☐ No ☐

I have satisfied permit eligibility with regard to protection of endangered species through the indicated section of Part I.B.3.e.(2) of the permit (check one or more boxes):

(a) ☐ (b) ☐ (c) ☐ (d) ☐

III. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage this system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name: _____ Date: _____

Signature: _____

Instructions – EPA Form 3510-9

Form Approved. OMB No. 2040-0188

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity to be Covered Under a NPDES Permit

Who Must File a Notice of Intent Form

Under the provisions of the Clean Water Act, as amended, (33 U.S.C. 1251 et.seq.; the Act), except as provided by Part I.B.3 the permit, Federal law prohibits discharges of pollutants in storm water from construction activities without a National Pollutant Discharge Elimination System Permit. Operator(s) of construction sites where 5 or more acres are disturbed, smaller sites that are part of a larger common plan of development or sale where there is a cumulative disturbance of at least 5 acres, or any site designated by the Director, must submit an NOI to obtain coverage under an NPDES Storm Water Construction General Permit. If you have questions about whether you need a permit under the NPDES Storm Water program, or if you need information as to whether a particular program is administered by EPA or a State agency, write to or telephone the Notice of Intent Processing Center at (703) 931-3230.

Where to File NOI Form

NOIs must be sent to the following address:

Storm Water Notice of Intent (4203)
USEPA
401 M. Street, SW
Washington, D.C. 20460

Do not send Storm Water Pollution Prevention Plans (SWPPPs) to the above address. For overnight/express delivery of NOIs, please include the room number 2104 Northeast Mall and phone number (202) 260-9541 in the address.

When to File

This form must be filed at least 48 hours before construction begins.

Completing the Form

OBTAIN AND READ A COPY OF THE APPROPRIATE EPA STORM WATER CONSTRUCTION GENERAL PERMIT FOR YOUR AREA. To complete this form, type or print, using uppercase letters, in the appropriate areas only. Please place each character between the marks (abbreviate if necessary to stay within the number of characters allowed for each item). Use one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions on this form, call the Notice of Intent Processing Center at (703) 931-3230.

Section I. Facility Owner/Operator (Applicant) Information

Provide the legal name, mailing address, and telephone number of the person, firm, public organization, or any other entity that meet either of the following two criteria: (1) they have operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or (2) they have the day-to-day operational control of those activities at the project necessary to ensure compliance with SWPPP requirements or other permit conditions. Each person that meets either of these criteria must file this form. Do not use a colloquial name. Correspondence for the permit will be sent to this address.

Enter the appropriate letter to indicate the legal status of the owner/operator of the project: F = Federal; S = State; M = Public (other than federal or state); P = Private.

Section II. Project/Site Information

Enter the official or legal name and complete street address, including city, county, state, zip code, and phone number of the project or site. If it lacks a street address, indicate with a general statement the location of the site (e.g., Intersection of State Highways 61 and 34). Complete site information must be provided for permit coverage to be granted.

The applicant must also provide the latitude and longitude of the facility in degrees, minutes, and seconds to the nearest 15 seconds. The latitude and longitude of your facility can be located on USGS quadrangle maps. Quadrangle maps can be obtained by calling 1-800 USA MAPS. Longitude and latitude may also be obtained at the Census Bureau Internet site: http://www.census.gov/cgi-bin/gazetteer.

Latitude and longitude for a facility in decimal form must be converted to degrees, minutes and seconds for proper entry on the NOI form. To convert decimal latitude or longitude to degrees, minutes, and seconds, follow the steps in the following example.

Convert decimal latitude 45.1234567 to degrees, minutes, and seconds.

1) The numbers to the left of the decimal point are degrees.
2) To obtain minutes, multiply the first four numbers to the right of the decimal point by 0.006. 1234 x .006 = 7.404.
3) The numbers to the left of the decimal point in the result obtained in step 2 are the minutes: 7'.
4) To obtain seconds, multiply the remaining three numbers to the right of the decimal from the result in step 2 by 0.06: 404 x 0.06 = 24.24. Since the numbers to the right of the decimal point are not used, the result is 24".
5) The conversion for 45.1234 = 45° 7' 24".

Indicate whether the project is on Indian Country Lands.

Indicate if the Storm Water Pollution Prevention Plan (SWPPP) has been developed. Refer to Part IV of the general permit for information on SWPPPs. To be eligible for coverage, a SWPPP must have been prepared.

Optional: Provide the address and phone number where the SWPPP can be viewed if different from addresses previously given. Check appropriate box.

Enter the name of the closest water body which receives the project's construction storm water discharge.

Enter the estimated construction start and completion dates using four digits for the year (i.e. 05/27/1998).

Enter the estimated area to be disturbed including but not limited to: grubbing, excavation, grading, and utilities and infrastructure installation. Indicate to the nearest acre; if less than 1 acre, enter "1." Note: 1 acre = 43,560 sq. ft.

Indicate your best estimate of the likelihood of storm water discharges from the project. EPA recognizes that actual discharges may differ from this estimate due to unforeseen or chance circumstances.

Indicate if there are any listed endangered or threatened species, or designated critical habitat in the project area.

Indicate which Part of the permit that the applicant is eligible with regard to protection of endangered or threatened species, or designated critical habitat.

Section III. Certification

Federal Statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means: (i) president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner of the proprietor, or

For a municipality, state, federal, or other public facility: by either a principal executive or ranking elected official. An unsigned or undated NOI form will not be granted permit coverage.

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 3.7 hours. This estimate includes time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form, including any suggestions which may increase or reduce this burden to: Director, OPPE Regulatory Information Division (2137), U.S. Environmental Protection Agency, 401 M Street, SW, Washington, D.C. 20460. Include the OMB control number on any correspondence. Do not send the completed form to this address.

THIS FORM REPLACES PREVIOUS FORM 3510-7 (8-92)

Please See Instructions Before Completing This Form

Form Approved. OMB No. 2040-0086
Approval expires: 8-31-98

NPDES FORM

United States Environmental Protection Agency
Washington, DC 20460

Notice of Termination (NOT) of Coverage Under a NPDES General Permit for Storm Water Discharges Associated with Industrial Activity

Submission of this Notice of Termination constitutes notice that the party identified in Section II of this form is no longer authorized to discharge storm water associated with industrial activity under the NPDES program. ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.

I. Permit Information

NPDES Storm Water General Permit Number: _____

Check Here if You are No Longer the Operator of the Facility: ☐

Check Here if the Storm Water Discharge is Being Terminated: ☐

II. Facility Operator Information

Name: _____ Phone: _____

Address: _____

City: _____ State: _____ ZIP Code: _____

III. Facility/Site Location Information

Name: _____

Address: _____

City: _____ State: _____ ZIP Code: _____

Latitude: _____ Longitude: _____ Quarter: _____ Section: _____ Township: _____ Range: _____

IV. Certification:

I certify under penalty of law that all storm water discharges associated with industrial activity from the identified facility that are authorized by a NPDES general permit have been eliminated or that I am no longer the operator of the facility or construction site. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge storm water associated with industrial activity under this general permit, and that discharging pollutants in storm water associated with industrial activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this Notice of Termination does not release an operator from liability for any violations of this permit or the Clean Water Act.

Print Name: _____ Date: _____

Signature: _____

Instructions for Completing Notice of Termination (NOT) Form

Who May File a Notice of Termination (NOT) Form

Permittees who are presently covered under an EPA-issued National Pollutant Discharge Elimination System (NPDES) General Permit (including the 1995 Multi-Sector Permit) for Storm Water Dicharges Associated with Industrial Activity may submit a Notice of Termination (NOT) form when their facilities no longer have any storm water discharges associated with industrial activity as defined in the storm water regulations at 40 CFR 122.26(b)(14), or when they are no longer the operator of the facilities.

For construction activities, elimination of all storm water discharges associated with industrial activity occurs when disturbed soils at the construction site have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time, or that all storm water discharges associated with industrial activity from the construction site that are authorized by a NPDES general permit have otherwise been eliminated. Final stabilization means that all soil-disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

Where to File NOT Form

Send this form to the the following address:

Storm Water Notice of Termination (4203)
401 M Street, S.W.
Washington, DC 20460

Completing the Form

Type or print, using upper-case letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions about this form, telephone or write the Notice of Intent Processing Center at (703) 931-3230.

Instructions - EPA Form 3510-7
Notice of Termination (NOT) of Coverage Under The NPDES General Permit
for Storm Water Discharges Associated With Industrial Activity

Section I Permit Information

Enter the existing NPDES Storm Water General Permit number assigned to the facility or site identified in Section III. If you do not know the permit number, telephone or write your EPA Regional storm water contact person.

Indicate your reason for submitting this Notice of Termination by checking the appropriate box:

If there has been a change of operator and you are no longer the operator of the facility or site identified in Section III, check the corresponding box.

If all storm water discharges at the facility or site identified in Section III have been terminated, check the corresponding box.

Section II Facility Operator Information

Give the legal name of the person, firm, public organization, or any other entity that operates the facility or site described in this application. The name of the operator may or may not be the same name as the facility. The operator of the facility is the legal entity which controls the facility's operation, rather than the plant or site manager. Do not use a colloquial name. Enter the complete address and telephone number of the operator.

Section III Facility/Site Location Information

Enter the facility's or site's official or legal name and complete address, including city, state and ZIP code. If the facility lacks a street address, indicate the state, the latitude and longitude of the facility to the nearest 15 seconds, or the quarter, section, township, and range (to the nearest quarter section) of the approximate center of the site.

Section IV Certification

Federal statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means: (i) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor; or

For a municipality, State, Federal, or other public facility: by either a principal executive officer or ranking elected official.

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 0.5 hours per application, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form, including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, 2136, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460, or Director, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

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SECTION 01670

RECYCLED / RECOVERED MATERIALS

12/01

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SECTION 01670

RECYCLED / RECOVERED MATERIALS

12/01

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

40 CFR 247	Comprehensive Procurement Guideline for Products Containing Recovered Materials

1.2 OBJECTIVES

Government procurement policy is to acquire, in a cost effective manner, items containing the highest percentage of recycled and recovered materials practicable consistent with maintaining a satisfactory level of competition without adversely affecting performance requirements or exposing suppliers' employees to undue hazards from the recovered materials. The Environmental Protection Agency (EPA) has designated certain items which must contain a specified percent range of recovered or recycled materials. EPA designated products specified in this contract comply with the stated policy and with the EPA guidelines. The Contractor shall make all reasonable efforts to use recycled and recovered materials in providing the EPA designated products and in otherwise utilizing recycled and recovered materials in the execution of the work.

1.3 EPA DESIGNATED ITEMS INCORPORATED IN THE WORK

Various sections of the specifications contain requirements for materials that have been designated by EPA as being products which are or can be made with recovered or recycled materials. These items, when incorporated into the work under this contract, shall contain at least the specified percentage of recycled or recovered materials unless adequate justification (non-availability) for non-use is provided. When a designated item is specified as an option to a non-designated item, the designated item requirements apply only if the designated item is used in the work.

1.4 EPA PROPOSED ITEMS INCORPORATED IN THE WORK

Products other than those designated by EPA are still being researched and are being considered for future Comprehensive Procurement Guideline (CPG) designation. It is recommended that these items, when incorporated in the work under this contract, contain the highest practicable percentage of recycled or recovered materials, provided specified requirements are also met.

1.5 EPA LISTED ITEMS USED IN CONDUCT OF THE WORK BUT NOT INCORPORATED IN THE WORK

There are many products listed in 40 CFR 247 which have been designated or proposed by EPA to include recycled or recovered materials that may be used by the Contractor in performing the work but will not be incorporated into the work. These products include office products, temporary traffic control products, and pallets. It is recommended that these non-construction products, when used in the conduct of the work, contain the highest practicable percentage of recycled or recovered materials and that these products be recycled when no longer needed.

-- End of Section --

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01781

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12/01

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-- End of Section Table of Contents --

SECTION 01781

OPERATION AND MAINTENANCE DATA
12/01

PART 1 GENERAL

1.1 SUBMISSION OF OPERATION AND MAINTENANCE DATA

Submit Operation and Maintenance (O&M) Data specifically applicable to this contract and a complete and concise depiction of the provided equipment, product, or system. Organize and present information in sufficient detail to clearly explain O&M requirements at the system, equipment, component, and subassembly level. Include an index preceding each submittal. Submit in accordance with this section and Section 01330, "Submittal Procedures."

1.1.1 Package Quality

Documents must be fully legible. Poor quality copies and material with hole punches obliterating the text or drawings will not be accepted.

1.1.2 Package Content

Data package content shall be as shown in the paragraph titled "Schedule of Operation and Maintenance Data Packages." Comply with the data package requirements specified in the individual technical sections, including the content of the packages and addressing each product, component, and system designated for data package submission.

1.1.3 Changes to Submittals

Manufacturer-originated changes or revisions to submitted data shall be furnished by the Contractor if a component of an item is so affected subsequent to acceptance of the O&M Data. Changes, additions, or revisions required by the Contracting Officer for final acceptance of submitted data, shall be submitted by the Contractor within 30 calendar days of the notification of this change requirement.

1.2 TYPES OF INFORMATION REQUIRED IN O&M DATA PACKAGES

1.2.1 Operating Instructions

Include specific instructions, procedures, and illustrations for the following phases of operation:

1.2.1.1 Safety Precautions

List personnel hazards and equipment or product safety precautions for all operating conditions.

1.2.1.2 Operator Prestart

Include procedures required to set up and prepare each system for use.

1.2.1.3 Startup, Shutdown, and Post-Shutdown Procedures

Provide narrative description for Startup, Shutdown and Post-shutdown operating procedures including the control sequence for each procedure.

1.2.1.4 Normal Operations

Provide narrative description of Normal Operating Procedures. Include Control Diagrams with data to explain operation and control of systems and specific equipment.

1.2.1.5 Emergency Operations

Include Emergency Procedures for equipment malfunctions to permit a short period of continued operation or to shut down the equipment to prevent further damage to systems and equipment. Include Emergency Shutdown Instructions for fire, explosion, spills, or other foreseeable contingencies. Provide guidance and procedures for emergency operation of all utility systems including required valve positions, valve locations and zones or portions of systems controlled.

1.2.1.6 Operator Service Requirements

Include instructions for services to be performed by the operator such as lubrication, adjustment, inspection, and recording gage readings.

1.2.1.7 Environmental Conditions

Include a list of Environmental Conditions (temperature, humidity, and other relevant data) that are best suited for the operation of each product, component or system. Describe conditions under which the item equipment should not be allowed to run.

1.2.2 Preventive Maintenance

Include the following information for preventive and scheduled maintenance to minimize corrective maintenance and repair.

1.2.2.1 Lubrication Data

Include preventative maintenance lubrication data, in addition to instructions for lubrication provided under paragraph titled "Operator Service Requirements":

a. A table showing recommended lubricants for specific temperature ranges and applications.

b. Charts with a schematic diagram of the equipment showing lubrication points, recommended types and grades of lubricants, and capacities.

c. A Lubrication Schedule showing service interval frequency.

1.2.2.2 Preventive Maintenance Plan and Schedule

Include manufacturer's schedule for routine preventive maintenance, inspections, tests and adjustments required to ensure proper and economical operation and to minimize corrective maintenance. Provide manufacturer's projection of preventive maintenance work-hours on a daily, weekly,

monthly, and annual basis including craft requirements by type of craft. For periodic calibrations, provide manufacturer's specified frequency and procedures for each separate operation.

1.2.3 Corrective Maintenance (Repair)

Include manufacturer's recommended procedures and instructions for correcting problems and making repairs.

1.2.3.1 Troubleshooting Guides and Diagnostic Techniques

Include step-by-step procedures to promptly isolate the cause of typical malfunctions. Describe clearly why the checkout is performed and what conditions are to be sought. Identify tests or inspections and test equipment required to determine whether parts and equipment may be reused or require replacement.

1.2.3.2 Wiring Diagrams and Control Diagrams

Wiring diagrams and control diagrams shall be point-to-point drawings of wiring and control circuits including factory-field interfaces. Provide a complete and accurate depiction of the actual job specific wiring and control work. On diagrams, number electrical and electronic wiring and pneumatic control tubing and the terminals for each type, identically to actual installation configuration and numbering.

1.2.3.3 Maintenance and Repair Procedures

Include instructions and alist of tools required to repair or restore the product or equipment to proper condition or operating standards.

1.2.3.4 Removal and Replacement Instructions

Include step-by-step procedures and a list required tools and supplies for removal, replacement, disassembly, and assembly of components, assemblies, subassemblies, accessories, and attachments. Provide tolerances, dimensions, settings and adjustments required. Instructions shall include a combination of text and illustrations.

1.2.3.5 Spare Parts and Supply Lists

Include lists of spare parts and supplies required for maintenance and repair to ensure continued service or operation without unreasonable delays. Special consideration is required for facilities at remote locations. List spare parts and supplies that have a long lead-time to obtain.

1.2.4 Corrective Maintenance Work-Hours

Include manufacturer's projection of corrective maintenance work-hours including requirements by type of craft. Corrective maintenance that requires completion or participation of the equipment manufacturer shall be identified and tabulated separately.

1.2.5 Appendices

Provide information required below and information not specified in the preceding paragraphs but pertinent to the maintenance or operation of the product or equipment. Include the following:

1.2.6 Parts Identification

Provide identification and coverage for all parts of each component, assembly, subassembly, and accessory of the end items subject to replacement. Include special hardware requirements, such as requirement to use high-strength bolts and nuts. Identify parts by make, model, serial number, and source of supply to allow reordering without further identification. Provide clear and legible illustrations, drawings, and exploded views to enable easy identification of the items. When illustrations omit the part numbers and description, both the illustrations and separate listing shall show the index, reference, or key number that will cross-reference the illustrated part to the listed part. Parts shown in the listings shall be grouped by components, assemblies, and subassemblies in accordance with the manufacturer's standard practice. Parts data may cover more than one model or series of equipment, components, assemblies, subassemblies, attachments, or accessories, such as typically shown in a master parts catalog

1.2.6.1 Warranty Information

List and explain the various warranties and include the servicing and technical precautions prescribed by the manufacturers or contract documents in order to keep warranties in force. Include warranty information for primary components such as the compressor of air conditioning system.

1.2.6.2 Personnel Training Requirements

Provide information available from the manufacturers that is needed for use in training designated personnel to properly operate and maintain the equipment and systems.

1.2.6.3 Testing Equipment and Special Tool Information

Include information on test equipment required to perform specified tests and on special tools needed for the operation, maintenance, and repair of components.

1.2.6.4 Contractor Information

Provide a list that includes the name, address, and telephone number of the General Contractor and each Subcontractor who installed the product or equipment, or system. For each item, also provide the name address and telephone number of the manufacturer's representative and service organization most convenient to the project site. Provide the name, address, and telephone number of the product, equipment, and system manufacturers.

1.3 SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES

Furnish the O&M data packages specified in individual technical sections. The required information for each O&M data package is as follows:

1.3.1 Data Package 1

a. Safety precautions

b. Maintenance and repair procedures

c. Warranty information

d. Contractor information

e. Spare parts and supply list

1.3.2 Data Package 2

a. Safety precautions

b. Normal operations

c. Environmental conditions

d. Lubrication data

e. Preventive maintenance plan and schedule

f. Maintenance and repair procedures

g. Removal and replacement instructions

h. Spare parts and supply list

i. Parts identification

j. Warranty information

k. Contractor information

1.3.3 Data Package 3

a. Safety precautions

b. Normal operations

c. Emergency operations

d. Environmental conditions

e. Lubrication data

f. Preventive maintenance plan and schedule

g. Troubleshooting guides and diagnostic techniques

h. Wiring diagrams and control diagrams

i. Maintenance and repair procedures

j. Removal and replacement instructions

k. Spare parts and supply list

l. Parts identification

m. Warranty information

n. Testing equipment and special tool information

o. Contractor information

1.3.4 Data Package 4

a. Safety precautions

b. Operator prestart

c. Startup, shutdown, and post-shutdown procedures

d. Normal operations

e. Emergency operations

f. Operator service requirements

g. Environmental conditions

h. Lubrication data

i. Preventive maintenance plan and schedule

j. Troubleshooting guides and diagnostic techniques

k. Wiring diagrams and control diagrams

l. Maintenance and repair procedures

m. Removal and replacement instructions

n. Spare parts and supply list

o. Corrective maintenance man-hours

p. Parts identification

q. Warranty information

r. Personnel training requirements

s. Testing equipment and special tool information

t. Contractor information

1.3.5 Data Package 5

a. Safety precautions

b. Operator prestart

c. Start-up, shutdown, and post-shutdown procedures

d. Normal operations

e. Environmental conditions

f. Preventive maintenance plan and schedule

g. Troubleshooting guides and diagnostic techniques

h. Wiring and control diagrams

i. Maintenance and repair procedures

j. Spare parts and supply list

k. Testing equipments and special tools

l. Warranty information

m. Contractor information

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

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SECTION 15951

DIRECT DIGITAL CONTROL FOR HVAC

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AIR MOVEMENT AND CONTROL ASSOCIATION INTERNATIONAL(AMCA)

AMCA 500-D	(1998) Laboratory Methods of Testing Dampers for Rating

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI C12.1	(2001) Electric Meters Code for Electricity Metering

ASME INTERNATIONAL (ASME)

ASME B40.1	(1991) Gauges - Pressure Indicating Dial Type - Elastic Element

ELECTRONIC INDUSTRIES ALLIANCE (EIA)

EIA ANSI/EIA/TIA-232-F	(2002) Interface Between Data Terminal Equipment and Data Circuit-Terminating Equipment Employing Serial Binary Data Interchange

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE C62.41	(1991) Recommended Practice for Surge Voltages in Low-Voltage AC Power Circuits
IEEE Std 142	(1992) Recommended Practice for Grounding of Industrial and Commercial Power Systems - Green Book

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA 250	(1997) Enclosures for Electrical Equipment (1000 Volts Maximum)
NEMA ICS 1	(2000) Industrial Control and Systems: General Requirements
NEMA ST 1	(1988; R 1994; R 1997) Specialty Transformers (Except General Purpose Type)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2002) National Electrical Code
NFPA 90A	(2002) Installation of Air Conditioning and Ventilating Systems

UNDERWRITERS LABORATORIES (UL)

UL 268A	(1998; Rev thru Apr 2003) Smoke Detectors for Duct Application
UL 508	(1999; Rev thru Dec 2002) Industrial Control Equipment
UL 555S	(1999; Rev thru Apr 2003) Smoke Dampers
UL 916	(1998; Rev thru Nov 2001) Energy Management Equipment

1.2 GENERAL REQUIREMENTS

The direct digital control (DDC) shall be a complete system suitable for the heating, ventilating and air-conditioning (HVAC) system.

Standard Products

Material and equipment shall be the standard products of Johnson Controls, Inc. or of other manufacturers as described herein, and each component shall provide the discrete functions specified. Combining of components or discrete component functions by using multiple function devices which have not been specified, and deviation from indicated logic shall not be permitted. Items of equipment (individual control system components such as pressure sensors, controllers, temperature probes) shall essentially duplicate equipment that has been in satisfactory use at least 2 years prior to bid opening. All equipment, including installation materials, shall conform to the requirements of the Buy American Act or shall be of American manufacture and assembly. Specific acceptable items of foreign manufacture are identified herein. Any equipment or material which does not meet these requirement shall be subject to removal and replacement at no additional cost to the Government.

Identical Items

Items of equipment that perform the same function shall be identical, including equipment, assemblies, parts, and components.

Configuration

The Contractor shall configure the Direct Digital Control (DDC) system as described. System shall be listed per UL 916. Direct Digital Control panels shall be fully capable of controlling their respective systems with or without communication with any host computer system. The system shall provide operator interaction through the existing METASYS workstation in **building 1324**. DDC panels shall manage all control functions within their data environment as specified. Every connected analog output (AO), analog input (AI), Binary output (BO), and Binary input (BI), represents a point

where referred to in this specification.

Connection to Base-Wide METASYS System

The contractor shall be responsible for connection and integration of the Direct Digital Control (DDC) system to the existing base-wide Johnson Controls Inc. METASYS Energy Management and Control System (EMCS). This includes providing all equipment, cabling, software, programming, installation, commissioning, and training unless noted otherwise.

Database Definition and Graphic Generation

Contractor shall generate required database definitions compatible with the existing EMCS databases. They shall also generate complete and accurate dynamic graphics representations of each air handling unit system and all other systems shall be identified on I/O summary charts as well as complete building floor plans showing individual space sensed and set point temperature and humidity conditions.

Sole Source Requirement

Notwithstanding Section 00700 Contract Clauses FAR 52.236-5, Material and Workmanship, DDC controllers, DDC/EMCS shall be manufactured by Johnson Controls Inc. in order that the systems installed are Johnson Controls Inc., and fully integrated and connected to the Base Johnson Controls Inc. METASYS EMCS System. No other product will be acceptable. The Competition Advocate authorizes sole source procurement.

1.2.1 Nameplates, Lens Caps, and Tags

Nameplates and lens caps bearing legends and tags bearing device-unique identifiers shall have engraved or stamped characters provided. A plastic or metal tag shall be mechanically attached directly to each device or attached by a metal chain or wire. Each airflow measurement station shall have a tag showing flow rate range for signal output range, duct size, and identifier specified.

1.2.2 Verification of Dimensions

After becoming familiar with all details of the work, the Contractor shall verify all dimensions in the field, and shall advise the Contracting Officer of any discrepancy before performing any work.

1.2.3 Drawings

Because of the small scale of the drawings, it is not possible to indicate all offsets, fittings, and accessories that may be required. The Contractor shall carefully investigate the mechanical, electrical, and finish conditions that could affect the work to be performed, shall arrange such work accordingly, and shall furnish all work necessary to meet such conditions.

1.2.4 Power-Line Surge Protection

Equipment connected to ac circuits shall be protected from power-line surges. Equipment protection shall meet the requirements of IEEE C62.41. Fuses shall not be used for surge protection.

1.2.5 Surge Protection for Transmitter and Control Wiring

DDC system control-panel equipment shall be protected against surges induced on control and transmitter wiring installed outside. The equipment protection shall be tested in the normal mode and in the common mode, using the following two waveforms:

a. A 10-microsecond by 1,000-microsecond waveform with a peak voltage of 1,500 volts and a peak current of 60 amperes.

b. An eight microsecond by 20-microsecond waveform with a peak voltage of 1,000 volts and a peak current of 500 amperes.

1.2.6 System Overall Reliability Requirement

The system shall be configured and installed to yield a mean time between failure (MTBF) of at least 40,000 hours. Each DDC controller shall be designed, configured, installed and programmed to provide for stand alone operation with minimal performance degradation on failure of other system components to which it is connected or with which it communicates.

1.2.7 DDC System Network Accessibility

Where the systems to be controlled by the DDC system are located in multiple mechanical rooms, each mechanical room shall have at least one communication port for the portable workstation/tester. DDC controllers shall be located in the same room as the equipment being controlled or in an adjacent space which has direct access to the equipment room.

1.2.8 System Accuracy and Display

The system shall maintain an end-to-end accuracy for one year from sensor to operator's console display for the applications specified and shall display the value as specified. Each temperature shall be displayed and printed to nearest 0.1 degree F.

1.2.8.1 Space Temperature

Space temperature with a range of 50 to 85 degrees F plus or minus 0.75 degree F for conditioned space; 30 to 130 degrees F plus or minus 1 degree F for unconditioned space.

1.2.8.2 Duct Temperature

Duct temperature with a range of 40 to 140 degrees F plus or minus 2 degrees F.

1.2.8.3 Outside Air Temperature

Outside air (OA) temperature with a range of minus 30 to plus 130 degrees F plus or minus 2 degrees F; with a subrange of 30 to 100 degrees F plus or minus 1 degree F.

1.2.8.4 Water Temperature

Water temperature with a range of 30 to 100 degrees F plus or minus 0.75 degree F; the range of 100 to 250 degrees F plus or minus 2 degrees F; and water temperatures for the purpose of performing Btu calculations

using differential temperatures to plus or minus 0.5 degree F using matched sensors.

1.2.8.5 Not Used

1.2.8.6 Relative Humidity

Relative humidity, within a range of 20 to 80 percent, plus or minus 6.0 percent of range (display and print to nearest 1.0 percent).

1.2.8.7 Pressure

Pressure with a range for the specific application plus or minus 2.0 percent of range (display and print to nearest psi.)

1.2.8.8 Flow

Flow with a range for the specific application plus or minus 3.0 percent of range, and flows for the purpose of thermal calculations to plus or minus 2.0 percent of actual flow (display and print to nearest unit, such as gallons per minute).

1.2.8.9 KWh and kW Demand

KWh and kW demand with a range for the specific application plus or minus 1.0 percent of reading (display and print to nearest kWh or kW).

1.2.8.10 Analog Value Input

An analog value input to the system's equipment via an AI with a maximum error of 0.50 percent of range, not including the sensor or transmitter error. This accuracy shall be maintained over the specified environmental conditions.

1.3 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Equipment Compliance Booklet; G-DO.

The HVAC Control System Equipment Compliance Booklet (ECB) shall be in booklet form and indexed, with numbered tabs separating the information on each device. It shall consist of, but not be limited to, data sheets and catalog cuts which document compliance of all devices and components with the specifications. The ECB shall be indexed in alphabetical order by the unique identifiers. Devices and components which do not have unique identifiers shall follow the devices and components with unique identifiers and shall be indexed in alphabetical order according to their functional name. The ECB shall include a Bill of Materials for each HVAC Control System. The Bill of Materials shall function as the Table of Contents for the ECB and shall include the device's unique identifier, device function, manufacturer, model/part/catalog number used for ordering, and tab number where the device information is located in the ECB. The ECB shall be submitted along with Submittal SD-02, Shop Drawings.

Commissioning Procedures; G-AO.

Six copies of the HVAC control system commissioning procedures, in booklet form and indexed, 60 days prior to the scheduled start of commissioning. Commissioning procedures shall be provided for each HVAC control system, and for each type of terminal unit control system. The Commissioning procedures shall reflect the format and language of this specification, and refer to devices by their unique identifiers. The Commissioning procedures shall be specific for each HVAC system, and shall give detailed step-by-step procedures for commissioning of the system.

a. The Commissioning procedures shall include detailed, product specific set-up procedures, configuration procedures, adjustment procedures, and calibration procedures for each device. Where the detailed product specific commissioning procedures are included in manufacturer supplied manuals, reference may be made in the HVAC control system commissioning procedures to the manuals.

b. An HVAC control system commissioning procedures equipment list shall be included that lists the equipment to be used to accomplish commissioning. The list shall include manufacturer name, model number, equipment function, the date of the latest calibration, and the results of the latest calibration.

Performance Verification Test Procedures; G-AO.

Six copies of the HVAC Control System Performance Verification Test Procedures, in booklet form and indexed, 60 days before the Contractor's scheduled test dates. The performance verification test procedures shall refer to the devices by their unique identifiers, shall explain, step-by-step, the actions and expected results that will demonstrate that the HVAC control system performs in accordance with the sequences of operation, and other contract documents. An HVAC control system performance verification test equipment list shall be included that lists the equipment to be used during performance verification testing. The list shall include manufacturer name, model number, equipment function, the date of the latest calibration, and the results of the latest calibration.

Training Course Requirements; G-AO

An outline for the HVAC control system training course with a proposed time schedule. Approval of the planned training schedule shall be obtained from the Government at least 60 days prior to the start of the training. Six copies of HVAC control system training course material 30 days prior to the scheduled start of the training course. The training course material shall include the operation manual, maintenance and repair manual, and paper copies of overheads used in the course.

Service Organizations; G-DO.

Six copies of a list of service organizations qualified to service the HVAC control system. The list shall include the service organization name, address, technical point of contact and telephone number, and contractual point of contact and telephone number.

SD-02 Shop Drawings

HVAC Control System; G-DO.

Drawings shall be on 34 by 22 inch sheets in the form and arrangement shown. The drawings shall use the same abbreviations, symbols, nomenclature and identifiers shown. Each control system element on a drawing shall have a unique identifier. The HVAC Control System Drawings shall be delivered together as a complete submittal. Deviations must be approved by the Contracting Officer. Drawings shall be submitted along with Submittal SD-03, Product Data.

a. HVAC Control System Drawings shall include the following:

Sheet One: Drawing Index, HVAC Control System Legend.
Sheet Two: Valve Schedule, Damper Schedule.
Sheet Three: Not Used.
Sheet Four: Control System Schematic and Equipment Schedule.
Sheet Five: Sequence of Operation and Data Terminal Strip Layout.
Sheet Six: Control Loop Wiring Diagrams.
Sheet Seven: Motor Starter and Relay Wiring Diagram.
Sheet Eight: Communication Network and Block Diagram.
Sheet Nine: DDC Panel Installation and Block Diagram.

(Repeat Sheets Four through Seven for each AHU System.)

b. The HVAC Control System Drawing Index shall show the name and number of the building, military site, State or other similar designation, and Country. The Drawing Index shall list HVAC Control System Drawings, including the drawing number, sheet number, drawing title, and computer filename when used. The HVAC Control System Legend shall show generic symbols and the name of devices shown on the HVAC Control System Drawings.

c. The valve schedule shall include each valve's unique identifier, size, flow coefficient Cv, pressure drop at specified flow rate, spring range, actuator size, close-off pressure data, dimensions, and access and clearance requirements data. Valve schedules may be submitted in advance but shall be included in the complete submittal.

d. The damper schedule shall contain each damper's and each actuator's identifier, nominal and actual sizes, orientation of axis and frame, direction of blade rotation, spring ranges, operation rate, locations of actuators and damper end switches, arrangement of sections in multi-section dampers, and methods of connecting dampers, actuators, and linkages. The Damper Schedule shall include the maximum leakage rate at the operating static-pressure differential. The Damper Schedule shall contain actuator selection data supported by calculations of the torque required to move and seal the dampers, access and clearance requirements. Damper schedules may be submitted in advance but shall be included in the complete submittal.

e. Not Used.

f. The HVAC control system schematics shall be in the form shown, and shall show all control and mechanical devices associated with the HVAC system. A system schematic drawing shall be submitted for each HVAC system.

g. The HVAC control system equipment Schedule shall be in the form shown. All devices shown on the drawings having unique identifiers shall be referenced in the equipment schedule. Information to be included in the equipment schedule shall be the control loop, device unique identifier, device function, setpoint, input range, and additional important parameters

(i.e., output range). An equipment schedule shall be submitted for each HVAC system.

h. The HVAC control system sequence of operation shall reflect the language and format of this specification, and shall refer to the devices by their unique identifiers. No operational deviations from specified sequences will be permitted without prior written approval of the Contracting Officer. Sequences of operation shall be submitted for each HVAC control system including each type of terminal unit control system.

i. The HVAC control system wiring diagrams shall be functional wiring diagrams which show the interconnection of conductors and cables to HVAC control panel terminal blocks and to the identified terminals of devices, starters and package equipment. The wiring diagrams shall show necessary jumpers and ground connections. The wiring diagrams shall show the labels of all conductors. Sources of power required for HVAC control systems and for packaged equipment control systems shall be identified back to the panel board circuit breaker number, HVAC system control panel, magnetic starter, or packaged equipment control circuit. Each power supply and transformer not integral to a controller, starter, or packaged equipment shall be shown. The connected volt-ampere load and the power supply volt-ampere rating shall be shown. Wiring diagrams shall be submitted for each HVAC control system.

SD-06 Test Reports

Commissioning Report; G-AO.

Six copies of the HVAC Control System Commissioning Report, in booklet form and indexed, within 30 days after completion of the system commissioning. The commissioning report shall include data collected during the HVAC control system commissioning procedures and shall follow the format of the commissioning procedures. The commissioning report shall include all configuration checksheets with final values listed for all parameters, setpoints, P, I, D setting constants, calibration data for all devices, results of adjustments, and results of testing.

Performance Verification Test Report; G-AO.

Six copies of the HVAC Control System Performance Verification Test Report, in booklet form and indexed, within 30 days after completion of the test. The HVAC control system performance verification test report shall include data collected during the HVAC control system performance verification test. The original copies of all data gathered during the performance verification test shall be turned over to the Government after Government approval of the test results.

SD-10 Operation and Maintenance Data

Operation Manual; G-AO.

Maintenance and Repair Manual; G-AO.

Six copies of the HVAC Control System Operation Manual and HVAC Control System Maintenance and Repair Manual, for each HVAC control system, 30 days before the date scheduled for the training course.

1.4 DELIVERY AND STORAGE

Products shall be stored with protection from the weather, humidity and temperature variations, dirt and dust, and other contaminants, within the storage condition limits published by the equipment manufacturer. Dampers shall be stored so that seal integrity, blade alignment and frame alignment are maintained.

1.5 OPERATION MANUAL

An HVAC control system operation manual in indexed booklet form shall be provided for each HVAC control system. The operation manual shall include the HVAC control system sequence of operation, and procedures for the HVAC system start-up, operation and shut-down. The operation manual shall include as-built HVAC control system detail drawings. The operation manual shall include the as-built configuration checksheets, the procedures for changing HVAC control system setpoints, and the procedures for placing HVAC system controllers in the manual control mode.

a. The procedures for changing HVAC control system setpoints shall describe the step-by-step procedures required to change the process variable setpoints, the alarm setpoints, the bias settings, and setpoint reset schedules.

b. The procedures for placing HVAC system controllers in the manual control mode shall describe step-by-step procedures required to obtain manual control of each controlled device and to manually adjust their positions.

1.6 MAINTENANCE AND REPAIR MANUAL

An HVAC control system maintenance and repair manual in indexed booklet form in hardback binders shall be provided for each HVAC control system. The maintenance and repair manual shall include the routine maintenance checklist, a recommended repair methods list, a list of recommended maintenance and repair tools, the qualified service organization list, the as-built commissioning procedures and report, the as-built performance verification test procedures and report, and the as-built equipment data booklet.

a. The routine maintenance checklist shall be arranged in a columnar format. The first column shall list all devices listed in the equipment compliance booklet, the second column shall state the maintenance activity or state no maintenance required, the third column shall state the frequency of the maintenance activity, and the fourth column for additional comments or reference.

b. The recommended repair methods list shall be arranged in a columnar format and shall list all devices in the equipment data compliance booklet and state the guidance on recommended repair methods, either field repair, factory repair, or whole-item replacement.

c. The as-built equipment data booklet shall include the equipment compliance booklet and manufacturer supplied user manuals and information.

d. If the operation manual and the maintenance and repair manual are provided in a common volume, they shall be clearly differentiated and separately indexed.

1.7 MAINTENANCE AND SERVICE

Services, materials and equipment shall be provided as necessary to maintain the entire system in an operational state as specified for a period of one year after successful completion and acceptance of the Performance Verification Test. Impacts on facility operations shall be minimized.

1.7.1 Description of Work

The adjustment and repair of the system shall include the manufacturer's required adjustments of computer equipment, software updates, transmission equipment and instrumentation and control devices.

1.7.2 Personnel

Service personnel shall be qualified to accomplish work promptly and satisfactorily. The Government shall be advised in writing of the name of the designated service representative, and of any changes in personnel.

1.7.3 Scheduled Inspections

Two inspections shall be performed at six-month intervals (or less if required by the manufacturer), and all work required shall be performed. Inspections shall be scheduled in June and December. These inspections shall include:

a. Visual checks and operational tests of equipment.

b. Fan checks and filter changes for control system equipment.

c. Clean control system equipment including interior and exterior surfaces.

d. Check and calibrate each field device. Check and calibrate 50 percent of the total analog points during the first inspection. Check and calibrate the remaining 50 percent of the analog points during the second major inspection. Certify analog test instrumentation accuracy to be twice that of the device being calibrated. Randomly check at least 25 percent of all digital points for proper operation during the first inspection. Randomly check at least 25 percent of the remaining digital points during the second inspection.

e. Run system software diagnostics and correct diagnosed problems.

f. Resolve any previous outstanding problems.

1.7.4 Scheduled Work

This work shall be performed during regular working hours, Monday through Friday, excluding legal holidays.

1.7.5 Emergency Service

The Government will initiate service calls when the system is not functioning properly. Qualified personnel shall be available to provide service to the system. A telephone number where the service supervisor can be reached at all times shall be provided. Service personnel shall be at the site within 24 hours after receiving a request for service. The

control system shall be restored to proper operating condition within three calendar days after receiving a request for service. This requirement shall be for one year in addition to the warranty period at no cost to the Government.

1.7.6 Operation

Scheduled adjustments and repairs shall include verification of the control system operation as demonstrated by the applicable tests of the performance verification test.

1.7.7 Records and Logs

Dated records and logs shall be kept of each task, with cumulative records for each major component, and for the complete system chronologically. A continuous log shall be maintained for all devices. The log shall contain initial analog span and zero calibration values and digital points. Complete logs shall be kept and shall be available for inspection onsite, demonstrating that planned and systematic adjustments and repairs have been accomplished for the control system.

1.7.8 Work Requests

Each service call request shall be recorded as received and shall include the serial number identifying the component involved, its location, date and time the call was received, nature of trouble, names of the service personnel assigned to the task, instructions describing what has to be done, the amount and nature of the materials to be used, the time and date work started, and the time and date of completion. A record of the work performed shall be submitted within 5 days after work is accomplished.

1.7.9 System Modifications

Recommendations for system modification shall be submitted in writing. No system modifications, including operating parameters and control settings, shall be made without prior approval of the Government. Any modifications made to the system shall be incorporated into the operations and maintenance manuals, and other documentation affected.

1.7.10 Software

Updates to the software shall be provided for system, operating and application software, and operation in the system shall be verified. Updates shall be incorporated into operations and maintenance manuals, and software documentation. There shall be at least one scheduled update near the end of the first year's warranty period, at which time the latest released version of the Contractor's software shall be installed and validated.

PART 2 PRODUCTS

2.1 GENERAL EQUIPMENT REQUIREMENTS

Units of the same type of equipment shall be products of a single manufacturer. Each major component of equipment shall have the manufacturer's name and address, and the model and serial number in a conspicuous place. Materials and equipment shall be standard products of a manufacturer regularly engaged in the manufacturing of such products, which are of a similar material, design and workmanship. The standard products

shall have been in a satisfactory commercial or industrial use for two years prior to use on this project. The two years' use shall include applications of equipment and materials under similar circumstances and of similar size. The two years' experience shall be satisfactorily completed by a product which has been sold or is offered for sale on the commercial market through advertisements, manufacturers' catalogs, or brochures. Products having less than a two-year field service record will be acceptable if a certified record of satisfactory field operation, for not less than 6,000 hours exclusive of the manufacturer's factory tests, can be shown. The equipment items shall be supported by a service organization. Items of the same type and purpose shall be identical, including equipment, assemblies, parts and components. Automatic temperature controls shall be direct digital controls that will provide the required sequence of operation.

2.1.1 Electrical and Electronic Devices

Electrical, electronic, and electropneumatic devices not located within a DDC panel shall have a NEMA ICS 1 enclosure in accordance with NEMA 250 unless otherwise shown.

2.1.2 Standard Signals

Except for air distribution terminal unit control equipment, the output of all analog transmitters and the analog input and output of all DDC controllers shall be 4-to-20 mAdc signals. The signal shall originate from current-sourcing devices and shall be received by current-sinking devices.

2.1.3 Ambient Temperature Limits

DDC panels shall have ambient condition ratings of 35 to 120 degrees F and 10 to 95 percent relative humidity, noncondensing. Devices installed outdoors shall operate within limit ratings of minus 35 to plus 150 degrees F. Instrumentation and control elements shall be rated for continuous operation under the ambient environmental temperature, pressure, humidity, and vibration conditions specified or normally encountered for the installed location.

2.2 NOT USED

2.3 WIRING

2.3.1 Terminal Blocks

Terminal blocks shall be insulated, modular, feed-through, clamp style with recessed captive screw-type clamping mechanism, shall be suitable for rail mounting, and shall have end plates and partition plates for separation or shall have enclosed sides.

2.3.2 Control Wiring for 24-Volt Circuits

Control wiring for 24-volt circuits shall be 18 AWG minimum, stranded copper and shall be rated for 300-volt service.

2.3.3 Wiring for 120-Volt Circuits

Wiring for 120-volt circuits shall be 18 AWG minimum, stranded copper and shall be rated for 600-volt service.

2.3.4 Instrumentation Cable

Instrumentation cable shall be 18 AWG, stranded copper, single- or multiple-twisted, minimum 2 inch lay of twist, 100 percent shielded pairs, and shall have a 300-volt insulation. Each pair shall have a 20 AWG tinned-copper drain wire and individual overall pair insulation. Cables shall have an overall aluminum-polyester or tinned-copper cable-shield tape, overall 20 AWG tinned-copper cable drain wire, and overall cable insulation.

2.3.5 Transformers

Step down transformers shall be utilized where control equipment operates at lower than line circuit voltage. Transformers, other than transformers in bridge circuits, shall have primaries wound for the voltage available and secondaries wound for the correct control circuit voltage. Transformer shall be sized so that the connected load is 80 percent of the rated capacity or less. Transformers shall conform to UL 508 and NEMA ST 1.

2.4 ACTUATORS

Actuators shall be electric or electronic and shall be provided with mounting and connecting hardware. Electric or electronic actuators shall be used for variable air volume (VAV) air terminal units. Actuators shall fail to their spring-return positions on signal or power failure ,except that VAV terminal unit actuators may be of the floating type. The actuator stroke shall be limited in the direction of power stroke by an adjustable stop. Actuators shall have a visible position indicator. Actuators shall smoothly open or close the devices to which they are applied and shall have a full stroke response time of 90 seconds or less. Electric actuators shall have an oil-immersed gear train. Electric or electronic actuators operating in series shall have an auxiliary actuator driver. Electric or electronic actuators used in sequencing applications shall have an adjustable operating range and start point.

2.4.1 Valve Actuators

Valve actuators shall be selected to provide a minimum of 125 percent of the motive power necessary to operate the valve over its full range of operation.

2.5 AUTOMATIC CONTROL VALVES

Valves shall have stainless-steel stems and stuffing boxes with extended necks to clear the piping insulation. Unless otherwise stated, valves shall have globe style bodies. Valve bodies shall be designed for not less than 125 psig working pressure or 150 percent of the system operating pressure, whichever is greater. Valve leakage rating shall be 0.01 percent of rated Cv. Unless otherwise specified, bodies for valves 1-1/2 inches and smaller shall be brass or bronze, with threaded or union ends; bodies for 2 inch valves shall have threaded ends; and bodies for valves 2 to 3 inches shall be of brass, bronze or iron. Bodies for valves 2-1/2 inches and larger shall be provided with flanged-end connections. Valve Cv shall be within 100 to 125 percent of the Cv shown.

2.5.1 Butterfly Valve Assembly

Butterfly valves shall be threaded lug type suitable for dead-end service and modulation to the fully-closed position, with carbon-steel bodies and

noncorrosive discs, stainless steel shafts supported by bearings, and EPDM seats suitable for temperatures from minus 20 to plus 250 degrees F. Valves shall have a manual means of operation independent of the actuator. The rated Cv for butterfly valves shall be the value Cv at 70% open (60 degrees open).

2.5.2 Two-Way Valves

Two-way modulating valves shall have equal-percentage characteristics.

2.5.3 Three-Way Valves

Three-way valves shall provide linear flow control with constant total flow throughout full plug travel.

2.5.4 Terminal-Unit-Coil Valves

Control valves with either flare-type or solder-type ends shall be provided for duct or terminal-unit coils. Flare nuts shall be furnished for each flare-type end valve.

2.5.5 Valves for Chilled-Water, and Glycol Service

Internal valve trim shall be bronze except that valve stems may be type 316 stainless steel. Valve Cv shall be within 100 to 125 percent of the Cv shown. Valves 4 inches and larger shall be butterfly.

2.5.6 Valves for Hot-Water Service

For hot water service below 250 degrees F, internal trim (including seats, seat rings, modulating plugs, and springs) of valves controlling water hotter than 210 degrees F shall be Type 316 stainless steel. Internal trim for valves controlling water 210 degrees F or less shall be brass or bronze. Nonmetallic parts of hot-water control valves shall be suitable for a minimum continuous operating temperature of 250 degrees F or 50 degrees F above the system design temperature, whichever is higher. Valves 4 inches and larger shall be butterfly valves.

2.6 DAMPERS

2.6.1 Damper Assembly

A single damper section shall have blades no longer than 48 inches and shall be no higher than 72 inches. Maximum damper blade width shall be 8 inches. Larger sizes shall be made from a combination of sections. Dampers shall be steel, or other materials where shown. Flat blades shall be made rigid by folding the edges. Blade-operating linkages shall be within the frame so that blade-connecting devices within the same damper section shall not be located directly in the air stream. Damper axles shall be 0.5 inch minimum, plated steel rods supported in the damper frame by stainless steel or bronze bearings. Blades mounted vertically shall be supported by thrust bearings. Pressure drop through dampers shall not exceed 0.04 inch water gauge at 1,000 feet per minute in the wide-open position. Frames shall not be less than 2 inches in width. Dampers shall be tested in accordance with AMCA 500-D.

2.6.2 Operating Links

Operating links external to dampers, such as crankarms, connecting rods,

and line shafting for transmitting motion from damper actuators to dampers, shall withstand a load equal to at least twice the maximum required damper-operating force. Rod lengths shall be adjustable. Links shall be brass, bronze, zinc-coated steel, or stainless steel. Working parts of joints and clevises shall be brass, bronze, or stainless steel. Adjustments of crankarms shall control the open and closed positions of dampers.

2.6.3 Damper Types

Dampers shall be parallel-blade type.

2.6.3.1 Outside Air, Return Air, and Relief Air Dampers

Outside air, return air and relief air dampers shall be provided where shown. Blades shall have interlocking edges and shall be provided with compressible seals at points of contact. The channel frames of the dampers shall be provided with jamb seals to minimize air leakage. Dampers shall not leak in excess of 20 cfm per square foot at 4 inches water gauge static pressure when closed. Seals shall be suitable for an operating temperature range of minus 40 to plus 200 degrees F. Dampers shall be rated at not less than 2,000 feet per minute air velocity.

2.6.3.2 Mechanical and Electrical Space Ventilation Dampers

Mechanical and electrical space ventilation dampers shall be provided as indicated herein. Dampers shall not leak in excess of 80 cfm square foot at 4 inches water gauge static pressure when closed. Dampers shall be rated at not less than 1,500 feet per minute air velocity.

2.6.3.3 Smoke Dampers

Smoke-damper and actuator assembly required per NFPA 90A shall meet the Class II leakage requirements of UL 555S. Dampers shall be rated at not less than 2000 fpm air velocity.

2.6.4 Damper End Switches

Each end switch shall be a hermetically sealed switch with a trip lever and over-travel mechanism. The switch enclosure shall be suitable for mounting on the duct exterior and shall permit setting the position of the trip lever that actuates the switch. The trip lever shall be aligned with the damper blade.

2.7 SMOKE DETECTORS

Duct smoke detectors shall be provided in supply and return air ducts in accordance with NFPA 90A. Duct smoke detectors shall conform to the requirements of UL 268A. Duct smoke detectors shall have perforated sampling tubes extended into the air duct. Detector circuitry shall be mounted in a metallic enclosure exterior to the duct. Detectors shall have manual reset. Detectors shall be rated for air velocities that include air flows between 500 and 4000 fpm. Detectors shall be powered from the fire alarm control panel (FACP). Detectors shall have two sets of normally open alarm contacts and two sets of normally closed alarm contacts. Detectors shall be connected to the building fire alarm panel for alarm initiation. A remote annunciation lamp and accessible remote reset switch shall be provided for duct detectors that are mounted eight feet or more above the finished floor and for detectors that are not readily visible. Remote

lamps and switches as well as the affected fan units shall be properly identified in etched rigid plastic placards.

2.8 INSTRUMENTATION

2.8.1 Measurements

Transmitters shall be calibrated to provide the following measurements, over the indicated ranges, for an output of 4 to 20 mAdc:

a. Conditioned space temperature, from 50 to 85 degrees F.

b. Duct temperature, from 40 to 140 degrees F.

c. Not Used

d. Chilled-water temperature, from 30 to 100 degrees F.

e. Not Used

f. Heating hot-water temperature, from 50 to 250 degrees F.

g. Not Used

h. Outside-air temperature, from minus 30 to 130 degrees F.

2.8.2 Temperature Instruments

2.8.2.1 Resistance Temperature Detectors (RTD)

Temperature sensors shall be 100 ohms 3- or 4-wire RTD. Each RTD shall be platinum with a tolerance of 0.54 degrees F at 32 degrees F with a temperature coefficient of resistance (TCR) of .00214 ohms/ohm/deg F and shall be encapsulated in epoxy, series 300 stainless steel, anodized aluminum, or copper. Each RTD shall be furnished with an RTD transmitter as specified, integrally mounted unless otherwise shown.

2.8.2.2 Continuous Averaging RTD

Continuous averaging RTDs shall have a tolerance of plus or minus 1.0 degree F at the reference temperature, and shall be of sufficient length to ensure that the resistance represents an average over the cross section in which it is installed. The sensing element shall have a bendable copper sheath. Each averaging RTD shall be furnished with an RTD transmitter to match the resistance range of the averaging RTD.

2.8.2.3 RTD Transmitter

The RTD transmitter shall match the resistance range of the RTD. The transmitter shall be a two-wire, loop powered device. The transmitter shall produce a linear 4-to-20 mAdc output corresponding to the required temperature measurement. The output error shall not exceed 0.1 percent of the calibrated measurement.

2.8.3 Relative Humidity Instruments

A relative-humidity instrument for indoor application shall have a measurement range from 0 to 100 percent relative-humidity and be rated for operation at ambient air temperatures within the range of 25 to 130

degrees F. It shall be capable of being exposed to a condensing air stream (100 percent RH) with no adverse effect to the sensor's calibration or other harm to the instrument. The instrument shall be of the wall-mounted or duct-mounted type, as required by the application, and shall be provided with any required accessories. Instruments used in duct high-limit applications shall have a bulk polymer resistive sensing element. Duct-mounted instruments shall be provided with a duct probe designed to protect the sensing element from dust accumulation and mechanical damage. The instrument (sensing element and transmitter) shall be a two-wire, loop-powered device and shall have an accuracy of plus or minus three percent of full scale within the range of 20 to 80 percent relative humidity. The instrument shall have a typical long-term stability of 1 percent or less drift per year. The transmitter shall convert the sensing element's output to a linear 4-20 mAdc output signal in proportion to the measured relative-humidity value. The transmitter shall include offset and span adjustments.

2.8.4 Not Used

2.8.5 Not Used

2.8.6 Differential Pressure Instruments

The instrument shall be a pressure transmitter with an integral sensing element. The instrument over pressure rating shall be 300 percent of the operating pressure. The sensor/transmitter assembly accuracy shall be plus or minus two percent of full scale. The transmitter shall be a two-wire, loop-powered device. The transmitter shall produce a linear 4-to-20 mAdc output corresponding to the required pressure measurement.

2.8.7 Thermowells

Thermowells shall be Series 300 stainless steel with threaded brass plug and chain, 2 inch lagging neck and extension type well. Inside diameter and insertion length shall be as required for the application.

2.8.8 Sunshields

Sunshields for outside air temperature sensing elements shall prevent the sun from directly striking the temperature sensing elements. The sunshields shall be provided with adequate ventilation so that the sensing element responds to the ambient temperature of the surroundings. The top of each sunshield shall have a galvanized metal rainshield projecting over the face of the sunshield. The sunshields shall be painted white.

2.9 THERMOSTATS

Thermostat ranges shall be selected so that the setpoint is adjustable without tools between plus or minus 10 degrees F of the setpoint shown. Thermostats shall be electronic or electric.

2.9.1 Nonmodulating Room Thermostats

Contacts shall be single-pole double-throw (SPDT), hermetically sealed, and wired to identified terminals. Maximum differential shall be 5 degrees F.

2.9.2 Microprocessor Based Room Thermostats

Microprocessor based thermostats shall have built-in keypads for scheduling of day and night temperature settings. When out of the scheduling mode,

thermostats shall have continuous display of time, with AM and PM indicator, continuous display of day of week, and either continuous display of room temperature with display of temperature setpoint on demand, or continuous display of temperature setpoint with display of room temperature on demand. In the programmable mode, the display shall be used for interrogating time program ON-OFF setpoints for all seven days of the week. The time program shall allow two separate temperature setback intervals per day. The thermostats shall have a means for temporary and manual override of the program schedule, with automatic program restoration on the following day. Thermostats shall have a replaceable battery to maintain the timing and maintain the schedule in memory for one year in the event of a power outage. Maximum differential shall be 2 degrees F. When used for heat pump applications, the thermostat shall have an emergency heat switch.

2.9.3 Modulating Room Thermostats

Modulating room thermostats shall have either one output signal, two output signals operating in unison, or two output signals operating in sequence, as required for the application. Each thermostat shall have an adjustable throttling range of 4 to 8 degrees F for each output.

2.9.4 Nonmodulating Capillary Thermostats and Aquastats

Each thermostat shall have a capillary length of at least 5 feet, shall have adjustable direct-reading scales for both setpoint and differential, and shall have a differential adjustable from 6 to 16 degrees F. Aquastats shall be of the strap on type, with 10 degrees F fixed differential.

2.9.5 Freezestats

Freezestats shall be manual reset, low temperature safety thermostats, with NO and NC contacts and a 20 foot element which shall respond to the coldest 18 inch segment.

2.9.6 Modulating Capillary Thermostats

Each thermostat shall have either one output signal, two output signals operating in unison, or two output signals operating in sequence, as required for the application. Thermostats shall have adjustable throttling ranges of 4 to 8 degrees F for each output.

2.10 PRESSURE SWITCHES AND SOLENOID VALVES

2.10.1 Pressure Switches

Each switch shall have an adjustable setpoint with visible setpoint scale. Range shall be required. Differential adjustment shall span 20 to 40 percent of the range of the device.

2.10.2 Differential-Pressure Switches

Each switch shall be an adjustable diaphragm-operated device with two SPDT contacts, with taps for sensing lines to be connected to duct pressure fittings designed to sense air pressure. These fittings shall be of the angled-tip type with tips pointing into the air stream. The setpoint shall not be in the upper or lower quarters of the range and the range shall not be more than three times the setpoint. Differential shall be a maximum of 0.15 inch water gauge at the low end of the range and 0.35 inch water gauge

at the high end of the range.

2.11 INDICATING DEVICES

2.11.1 Thermometers

2.11.1.1 Piping System Thermometers

Piping system thermometers shall have brass, malleable iron or aluminum alloy case and frame, clear protective face, permanently stabilized glass tube with indicating-fluid column, white face, black numbers, and a 9 inch scale. Thermometers for piping systems shall have rigid stems with straight, angular, or inclined pattern.

2.11.1.2 Piping System Thermometer Stems

Thermometer stems shall have expansion heads as required to prevent breakage at extreme temperatures. On rigid-stem thermometers, the space between bulb and stem shall be filled with a heat-transfer medium.

2.11.1.3 Nonaveraging Air-Duct Thermometers

Air-duct thermometers shall have perforated stem guards and 45-degree adjustable duct flanges with locking mechanism.

2.11.1.4 Averaging Air-Duct Thermometers

Averaging thermometers shall have a 3-1/2 inch (nominal) dial, with black legend on white background, and pointer traveling through a 270-degree arc.

2.11.1.5 Accuracy

Thermometers shall have an accuracy of plus or minus one percent of scale range. Thermometers shall have a range suitable for the application.

2.11.2 Pressure Gauges

Gauges shall be 2 inch (nominal) size, back connected, suitable for field or panel mounting as required, shall have black legend on white background, and shall have a pointer traveling through a 270-degree arc. Accuracy shall be plus or minus three percent of scale range. Gauges shall meet requirements of ASME B40.1.

2.11.3 Low Differential Pressure Gauges

Gauges for low differential pressure measurements shall be a minimum of 3.5 inch (nominal) size with two sets of pressure taps, and shall have a diaphragm-actuated pointer, white dial with black figures, and pointer zero adjustment. Gauges shall have ranges and graduations as required. Accuracy shall be plus or minus two percent of scale range.

2.12 CONTROL DEVICES AND ACCESSORIES

2.12.1 Relays

Control relay contacts shall have utilization category and ratings selected for the application, with a minimum of two sets of contacts (two normally open, two normally closed) enclosed in a dustproof enclosure. Relays shall be rated for a minimum life of one million operations. Operating time

shall be 20 milliseconds or less. Relays shall be equipped with coil transient suppression devices to limit transients to 150 percent of rated coil voltage. Time delay relays shall be 2PDT with eight-pin connectors, dust cover, and a matching rail-mounted socket. Adjustable timing range shall be 0 to 5 minutes. Power consumption shall not be greater than three watts.

2.12.2 Not Used

2.12.3 Joule or Watthour Meters

Watthour meters shall be in accordance with ANSI C12.1 and have pulse initiators for remote monitoring of Watthour consumption. Pulse initiator shall consist of form C contacts with a current rating not to exceed two amperes and voltage not to exceed 500 V, with combinations of VA not to exceed 100 VA, and a life rating of one billion operations. Meter sockets shall be in accordance with ANSI C12.1.

2.12.4 Joule or Watthour Meters with Demand Register

Meters shall be in accordance with ANSI C12.1 and shall have pulse initiators for remote monitoring of Watthour consumption and instantaneous demand. Pulse initiators shall consist of form C contacts with a current rating not to exceed two amperes and voltage not to exceed 500 V, with combinations of VA not to exceed 100 VA, and a life rating of one billion operations. Meter sockets shall be in accordance with ANSI C12.1

2.12.5 Joule or Watthour Transducers

Watthour transducers shall have an accuracy of plus or minus 0.25 percent for kW and kWh outputs from full lag to full lead power factor. Input ranges for kW and kWh transducers shall be selectable without requiring the changing of current or potential transformers. The output shall be 4 to 20 mAdc.

2.12.6 Current Sensing Relays

Current sensing relays shall provide a normally-open contact rated at a minimum of 50 volts peak and 1/2 ampere or 25 VA, noninductive. There shall be a single hole for passage of current carrying conductors. The devices shall be sized for operation at 50 percent rated current based on the connected load. Voltage isolation shall be a minimum of 600 volts.

2.12.7 Power-Line Conditioners (PLC)

Power line conditioners shall be furnished for each DDC panel. The PLCs shall provide both voltage regulation and noise rejection. The PLCs shall be of the ferro-resonant design, with no moving parts and no tap switching, while electrically isolating the secondary from the power-line side. The PLCs shall be sized for 125 percent of the actual connected kVA load. Characteristics of the PLC shall be as follows:

a. At 85 percent load, the output voltage shall not deviate by more than plus or minus one percent of nominal when the input voltage fluctuates between minus 20 percent to plus 10 percent of nominal.

b. During load changes of zero to full load, the output voltage shall not deviate by more than plus or minus three percent of nominal voltage. Full correction of load switching disturbances shall be accomplished within

five cycles, and 95 percent correction shall be accomplished within two cycles of the onset of the disturbance.

c. Total harmonic distortion shall not exceed 3-1/2 percent at full load.

2.13 NOT USED

2.14 DIRECT DIGITAL CONTROL (DDC) HARDWARE

All functions, constraints, data base parameters, operator developed programs and any other data shall be downloadable from a portable workstation/tester or the central workstation/tester to network control panels, RIU's, universal programmable controllers, and unitary controllers. Download shall be accomplished through both the primary network and the local DDC portable workstation/tester port.

2.14.1 Network Control Panel

Network control panels shall be microcomputer-based with sufficient memory provided to perform all specified and shown network control panel functions and operations, including spare capacity for all spares and its I/O functions specified. Each network control panel and remote I/O units (RIU) shall have a minimum of 10% of its I/O functions as spare capacity but not less than 2 of each type used in each. The type of spares shall be in the same proportion as the implemented I/O functions on the panel, but in no case shall there be less than two spare points of each type. The panel I/O functions shall be furnished complete, with no changes or additions necessary to support implementation of spare functions. Output relays associated with digital signals shall be considered part of the I/O function, whether physically mounted in the enclosure or separately mounted. Implementation of spare points shall necessitate only providing the additional field sensor or control device, field wiring including connection to the system, and point definition assignment by the operator using the central workstation/tester or portable workstation/tester. The panel shall contain all necessary I/O functions to connect to field sensors and control panels. I/O function operation shall be fully supervised to detect I/O function failures. Network control panels shall operate in an independent stand-alone mode, which is defined as all network control panel operations performed by the network control panel without any continuing input from other Direct digital controls or portable workstation/tester. The network control panel shall be capable of controlling a mix of at least 32 RIUs, unitary controllers, and universal programmable controllers.

2.14.1.1 Integral Features

The network control panel shall include:

a. Main power switch.

b. Power on indicator.

c. Portable workstation/tester port, connector, and if necessary power supply.

d. Manufacturers control network port.

e. On-Off-Auto switches for each DO which controls a device. These switches shall be mounted in the field panel, with the exception of motors,

for which the switch shall be mounted at the motor control center. On-Off-Auto switches are not required for DO associated with a status or alarm such as pilot lights. The status of these switches shall be available to the panel for further processing.

f. Minimum-Maximum-Auto switches, or Auto-Manual switches with manual output override, for each AO. The status of these shall be available to the panel for further processing.

g. An intrusion detection device, connected as an alarm.

2.14.1.2 Communication Interfaces

The following communication capabilities shall function simultaneously.

a. Manufacturers Control Network. Manufacturers control network communications interfaces for each data transmission systems (DTS) circuit between network control panels and RIUs, unitary controllers, and universal programmable controllers, shall be provided. Communication interfaces shall be provided between each network control panel and associated I/O functions. The DTS will provide for transmission speeds necessary to comply with performance requirements specified. DTS equipment shall be installed in the network control panel enclosure.

b. Portable Workstation/Tester Port. A communications port for interfacing to a portable workstation/tester shall be provided. Network control panel workstation/tester port other than RS-232,shall be converted to RS-232, including cabling and power supply, and shall be permanently installed in the panel.

c. Primary Network Port. The network control panel shall either have a built in primary network Port or be capable of accepting a primary network port expansion card for future networking to a base wide utility monitoring and control system (UMCS). The primary network port expansion card shall be either Ethernet (IEEE802.3) or ARCNET.

2.14.1.3 Memory and Real Time Clock (RTC) Backup

The network control panel memory and real time clock functions shall continue to operate for a minimum of 72 hours in the event of a power failure. If rechargeable batteries are provided, automatic charging of batteries shall be provided. Whenever a either a permanent workstation/tester or portable workstation/tester is monitoring the network control panel, a low battery alarm message shall be sent to it.

2.14.1.4 Duplex Outlet

A single phase, 120 Vac electrical service outlet for use with test equipment shall be furnished either inside or within 6 feet of the network control panel enclosure.

2.14.1.5 Locking Enclosures

Locking type mounting cabinets with common keying shall be furnished for each network control panel.

2.14.1.6 Failure Mode

Upon failure of the network control panel, either due to failure of the

network control panel hardware or of the manufacturers control network, the network control panel shall revert to the failure mode.

a. Manufacturers Control Network Failure: Upon failure of the manufacturers control network, the network control panel shall operate in an independent stand-alone mode.

b. Network Control Panel Hardware Failure: Upon failure of the network control panel hardware, the network control panel shall cease operation and stop communications with other network control panels, RIUs, unitary controllers and universal programmable controllers connected to the affected network control panel. The affected network control panel shall respond to this failure as specified and shown.

2.14.2 RIU

The RIU shall be functionally a part of the network control panel as specified, but may be remotely located from the network control panel and communicate over a dedicated communication circuit. When remotely located, the I/O functions shall be subject to the same requirements as for the network control panel hardware. RIUs shall be used to connect remote inputs and outputs to a network control panel and shall contain all necessary I/O functions to connect to field sensors and control devices. RIU operation shall be fully supervised by the network control panel to detect failures. Each RIU shall have a minimum of 10 % of its I/O functions as spare capacity. The type of spares shall be in the same proportion as the implemented I/O functions on the RIU, but in no case shall there be less than two spare points of each type. The RIU shall be furnished complete, with no changes or additions necessary to support implementation of spare functions. Output relays associated with digital signals shall be considered part of the I/O function, whether physically mounted in the enclosure or separately mounted. Implementation of spare points by others shall require only providing the additional field sensor or control device, field wiring including connection to the system, and point definition assignment by the operator. The RIU shall either report the status of all connected points on each scan, or report the status of all points which have changed state or value since the previous scan.

2.14.2.1 Integral Features

The RIU shall include:

a. Main power switch.

b. Power on indicator.

c. Portable workstation/tester port, connector, and if necessary power supply.

d. Manufacturers control network port.

e. On-Off-Auto switches for each DO which controls a device. These switches shall be mounted in the RIU, with the exception of motors, for which the switch shall be mounted at the motor control center. On-Off-Auto switches are not required for DO associated with a status or alarm such as pilot lights. The status of these switches shall be available to the RIU for further processing.

f. Minimum-Maximum-Auto switches, or Auto-Manual switches with manual

output override, for each AO. The status of these shall be available to the panel for further processing.

g. An intrusion detection device, connected as an alarm.

2.14.2.2 Duplex Outlet

A single phase, 120 Vac electrical service outlet for use with test equipment shall be furnished either inside or within 6 feet of the RIU.

2.14.2.3 Locking Enclosures

Locking type mounting cabinets with common keying shall be furnished for each RIU.

2.14.2.4 Failure Mode

Upon failure of the RIU, either due to failure of the RIU hardware or of the DTS, the RIU shall revert to the failure mode shown.

2.14.3 Universal Programmable Controller (UPC)

The universal programmable controller shall be a microprocessor based controller designed and programmed to control and monitor systems. Resident programs shall be contained in reprogramable nonvolatile memory. Each universal programmable controller shall contain necessary power supplies, transformers, memory, I/O functions and communications interfaces necessary to perform its required functions and to provide control and monitoring of connected equipment and devices. It shall contain all necessary I/O functions to connect to field sensors and controls. I/O operation shall be fully supervised to detect I/O function failures. It shall provide for operation as a device connected to the system via the manufacturers control network.

2.14.3.1 Integral Features

The universal programmable controller shall include as a minimum:

a. Main power switch.

b. Power on indicator.

c. Portable workstation/tester port, connector, and if necessary power supply.

d. Manufacturers control network port.

e. I/O functions

(1) 8 DI

(2) 4 DO

(3) 8 AI

(4) 4 AO

(5) 1 PA

f. On-Off-Auto switches for each DO which controls a device. These switches shall be mounted in the universal programmable controller, with the exception of motors, for which the switch shall be mounted at the motor control center. On-Off-Auto switches are not required for DO associated with a status or alarm such as pilot lights. The status of these switches shall be available to the panel for further processing.

g. Minimum-Maximum-Auto switches, or Auto-Manual switches with manual output override, for each AO. The status of these shall be available to the panel for further processing.

2.14.3.2 Communication Interfaces

The UPC shall have the following communication capabilities which shall function simultaneously.

a. Manufacturers Control Network. The manufacturers control network communications interface for a data transmission systems (DTS) circuit between the UPC and a network control panels shall be provided. The DTS will provide for transmission speeds necessary to comply with performance requirements specified. DTS equipment shall be installed in the UPC Panel enclosure.

b. Portable Workstation/Tester Port. A communications port for interfacing to a portable workstation/tester shall be provided. A UPC workstation/tester port other than RS-232, shall be converted to RS-232, including cabling and power supply, and shall be permanently installed in the panel.

2.14.3.3 Memory and RTC Backup

The UPC memory and real time clock functions shall continue to operate for a minimum of 72 hours in the event of a power failure. If rechargeable batteries are provided, automatic charging of batteries shall be provided. Whenever a either a permanent workstation/tester or portable workstation/tester is monitoring the network control panel, a low battery alarm message shall be sent to it.

2.14.3.4 Specific Requirements

Each universal programmable controller shall be accessible for purposes of application selection, control parameters, set point adjustment, and monitoring from any DDC controller connected to the same manufacturers control network as the universal programmable controller. This shall be done using a portable workstation/tester connected to a portable workstation/tester port either directly or via modem.

2.14.3.5 Locking Enclosures

Locking type mounting cabinets with common keying shall be furnished for each enclosure.

2.14.3.6 Failure Mode

Upon failure of the universal programmable controller, it shall revert to the failure mode of operation indicated on I/O summaries.

2.14.4 Unitary Controller

The unitary controller shall be a microprocessor based, stand-alone, dedicated purpose controller, communicating with the network control panel, designed and programmed to control air distribution system mixing boxes, terminal units, or VAV boxes. Each unitary controller shall contain resident programs in nonvolatile memory for each specific application implemented. Each unitary controller shall contain necessary power supplies, transformers, memory, I/O functions and communications interfaces necessary to perform its required functions and to provide control and monitoring of connected equipment and devices. It shall contain all necessary I/O functions to connect to field sensors and controls. I/O operation shall be fully supervised to detect I/O function failures and shall provide for operation as a device connected to the network control panel via the manufacturers control network.

2.14.4.1 Integral Features

The unitary controller shall include:

a. Main power switch.

b. Power on indicator.

c. Portable workstation/tester port, connector, and power supply.

d. Manufacturers control network port.

e. All I/O functions required to implement the requirements shall be provided.

f. On-Off-Auto switches for each DO which controls a device. These switches shall be mounted in the field panel, with the exception of motors, for which the switch shall be mounted at the motor control center. On-Off-Auto switches are not required for DO associated with a status or alarm such as pilot lights. The status of these switches shall be available to the panel for further processing.

g. Minimum-Maximum-Auto switches, or Auto-Manual switches with manual output override, for each AO. The status of these shall be available to the panel for further processing.

2.14.4.2 Communication Interfaces

The unitary controller shall have the following communication capabilities which shall function simultaneously.

a. Manufacturers Control Network. The manufacturers control network communications interface for a data transmission systems (DTS) circuit between the unitary controller and a network control panel shall be provided. The DTS will provide for transmission speeds necessary to comply with performance requirements specified. DTS equipment shall be installed in the unitary control panel enclosure.

b. Portable Workstation/Tester Port. A communications port for interfacing to a portable workstation/tester shall be provided. A unitary controller workstation/tester port other than RS-232, shall be converted to RS-232, including cabling and power supply, and shall be permanently installed in the panel. For unitary controller applications where the

controller is not mounted in an enclosure, such as for fan-coil units or VAV terminal units, a portable conversion device for an RS-232 connection to the portable workstation/tester may be provided.

2.14.4.3 Specific Requirements

Unitary controller components for new air distribution terminal units shall be furnished to the air distribution terminal unit manufacturer for factory mounting and calibration. Existing air distribution terminal units shall be controlled by field installed unitary controllers.

a. Accessibility and Interfaces: Each unitary controller shall be accessible for purposes of application selection, control parameters, set point adjustment, and monitoring using a portable workstation/tester connected to the manufacturers control network. They shall also be accessible with a portable workstation/tester connected to the unitary controller portable workstation/tester port.

b. Air Distribution Terminal Unit Controls - Pressure Independent: Controls shall consist of a transducer for connection to the velocity-sensing device provided by the terminal unit supplier in the primary air entering the terminal unit, a room temperature sensor, a damper actuator, and an adjustable microprocessor-based controller. The room temperature sensor shall have occupant setpoint adjustment and temperature display, timed override of unoccupied mode, and a communication port. The controller shall operate the damper for cooling and heating and provide control outputs for duct heating coil if applicable. This controller capability shall allow the sequencing of the damper and the heating coil to maintain conditions in the space.

c. Air Distribution Terminal Unit Controls - Pressure Independent with Recirculating Fan: Controls for pressure-independent boxes with recirculating fans shall consist of a transducer for connection to the velocity-sensing device provided by the terminal unit supplier in the primary air entering the terminal unit, a room temperature sensing element, a damper actuator, an adjustable microprocessor-based terminal unit controller, and a switch to operate the recirculation fan, provided by the terminal unit supplier. The room temperature sensor shall have occupant setpoint adjustment and temperature display, timed override of unoccupied mode, and a communication port. The controller shall operate the damper for cooling and shall provide outputs for controlling the recirculation fan and duct heating coil in sequence for heating.

d. Air Distribution Terminal Unit Damper Actuator: Air distribution terminal unit damper actuator shall open or close the device to which it is connected within 60 seconds. The damper actuator shall utilize spring return to fail to the position shown on loss of power or control signal.

2.14.4.4 Failure Mode

Upon failure of the unitary controller, it shall revert to the failure mode of operation.

2.14.5 Chiller Control Panel

Chiller control panel shall be microprocessor-based and shall provide, both locally and through the Manufacturers Control Network, the control, monitoring, and safety equipment functions provided by the chiller manufacturer's control panel(s) (two communications ports total). The

chiller control panel instrumentation and control ranges and accuracies shall match those of the chiller manufacturer's control devices. The chiller panel shall have a communication port for interface to a Portable Workstation/Tester through either the Manufacturers Control Network or modem for chiller(s) start/stop, chilled water temperature reset, and monitoring of chiller operating status, alarms, and power consumption.

2.14.6 Boiler Control Panel

Boiler control panel shall be microprocessor-based and shall provide, both locally and through the Manufacturers Control Network, the control, monitoring, and safety equipment functions provided by the boiler manufacturer's control panel(s) (two communications ports total). The boiler control panel instrumentation and controls ranges and accuracies shall match those of the boiler manufacturer's control devices. The boiler panel shall have a communication port for interface to a Portable Workstation/Tester through either the Manufacturers Control Network or modem for boiler(s) and start/stop, boiler water temperature reset, and monitoring of boiler operating status, alarms.

2.14.7 I/O Functions

2.14.7.1 DDC Hardware I/O Functions

I/O Functions shall be provided as part of the DDC system and shall be in accordance with the following:

a. The analog input (AI) function shall monitor each analog input, perform A-to-D conversion, and hold the digital value in a buffer for interrogation. The A-to-D conversion shall have a minimum resolution of 10 bits plus sign. Signal conditioning shall be provided for each analog input. Analog inputs shall be individually calibrated for zero and span, in hardware or in software. The AI shall incorporate common mode noise rejection of 50 dB from 0 to 100 Hz for differential inputs, and normal mode noise rejection of 20 dB at 60 Hz from a source impedance of 10,000 ohms. Input ranges shall be within the range of 4-to-20 mAdc.

b. The analog output (AO) function shall accept digital data, perform D-to-A conversion, and output a signal within the range of 4-to-20 mAdc. D-to-A conversion shall have a minimum resolution of eight bits plus sign. Analog outputs shall be individually calibrated for zero and span. Short circuit protection on voltage outputs and open circuit protection on current outputs shall be provided. An individual gradual switch for manual override of each analog output and means of physically securing access to these switches shall be provided. Each AO shall have a three-position switch for selection of the DDC control signal, no control, or a locally generated control signal for connection to the controlled device. Feedback shall be provided to the system as to the status of the output (manual control or automatic). Switches for pneumatic control outputs shall provide a connection for an externally generated pneumatic signal. All switches shall be either of a key operated design with the same keying system used for other outputs or otherwise suitably protected from unauthorized access .

c. The digital input (DI) function shall accept on-off, open-close, or other change of state (two state data) indications. Isolation and protection against an applied steady-state voltage up to 180 Vac peak shall be provided.

d. The digital output (DO) function shall provide contact closures for momentary and maintained operation of output devices. Closures shall have a minimum duration of 0.1 second. DO relays shall have an initial breakdown voltage between contacts and coil of at least 500 V peak. Electromagnetic interference suppression shall be furnished on all output lines to limit transients to nondamaging levels. Protection against an applied steady-state voltage up to 180 Vac peak shall be provided. Minimum contact rating shall be one ampere at 24 Vac. Key locked HOA switches shall be provided for manual override of each digital output. Feedback shall be provided to the system as to the status of the output (manual control or automatic). Switches shall be common keyed .

e. The pulse accumulator function shall have the same characteristics as the DI. In addition, a buffer shall be provided to totalize pulses and allow for interrogation by the DDC system. The pulse accumulator shall accept rates up to 20 pulses per second. The totalized value shall be reset to zero upon operator's command.

f. Signal conditioning for sensors shall be provided as specified.

g. The binary coded decimal (BCD) function: The BCD function shall have the same characteristics as the DI, except that, in addition, a buffer shall be provided to totalize inputs and allow for interrogation by the network control panel. The BCD function shall have 16-channel optically isolated buffered inputs to read four digit numbers. The BCD function shall accumulate inputs at rates up to 10 inputs per second.

2.14.7.2 Failure Mode

Upon failure of the I/O function, including data transmission failure, logic power supply failure, DDC processor malfunction, software failure, interposing relay power failure, or any other failure which prevents stand alone operation of any DDC normally capable of stand alone operation, connected outputs shall be forced to the failure mode shown.

2.14.8 Portable Workstation/Tester

A portable workstation/tester shall be provided and shall be able to connect to any DDC hardware. The portable workstation/tester shall consist of a portable computer with a nominal 10 inch active color matrix liquid crystal display, capable of displaying up to 256 colors at a minimum resolution of 640 X 480 pixels, an external VGA monitor port, 32 bit microprocessor operating at a minimum of 100 MHZ. The portable workstation/tester shall have, as a minimum, a 1200 MB hard drive, 16 megabytes of memory, integral pointing device, serial and parallel ports, color VGA video port for an external color monitor, 3.5 inch floppy disk drive, modem, PCMCIA type 3 slot, rechargeable battery, battery charger and 120 Vac power supply. It shall include carrying case, extra battery, charger and a compatible network adapter. The workstation/tester shall:

a. Run DDC diagnostics.

b. Load all DDC memory resident programs and information, including parameters and constraints.

c. Display any AI, DI, AO, DO, or PA point in engineering units for analog points or status for digital points.

d. Control any AO or DO.

e. Provide an operator interface, contingent on password level, allowing the operator to use full English language words and acronyms, or an object oriented graphical user interface.

f. Display database parameters.

g. Modify database parameters.

h. Accept DDC software and information for subsequent loading into a specific DDC. Provide all necessary software and hardware required to support this function, including an EIA ANSI/EIA/TIA-232-F port.

i. Disable/enable each DDC.

j. Perform all workstation functions as specified.

2.14.9 Central Workstation/Tester

A central workstation/tester shall be provided and shall be able to communicate any network control panel via the primary network. The central workstation/tester shall be functionally equivalent to the portable workstation/tester but is intended to be a stationary unit. The central workstation/tester shall consist of a central computer with a nominal 14 inch VGA color display, capable of displaying up to 256 colors at a minimum resolution of 640 X 480 pixels, 32 bit microprocessor operating at a minimum of 100 MHZ. The central workstation/tester shall have, as a minimum, a 2100 MB hard drive, 32 megabytes of memory, integral pointing device, serial and parallel ports, color VGA video port for an external color monitor, 3.5 inch floppy disk drive, modem, PCMCIA type three slot, rechargeable battery, battery charger, 120 Vac power supply and network adapter (Ethernet IEEE802.3 or ARCNET). The central workstation/tester shall:

a. Run DDC diagnostics.

b. Load all DDC memory resident programs and information, including parameters and constraints.

c. Display any AI, DI, AO, DO, or PA point in engineering units for analog points or status for digital points.

d. Control any AO or DO.

e. Provide an operator interface, contingent on password level, allowing the operator to use full English language words and acronyms, or an object oriented graphical user interface.

f. Display database parameters.

g. Modify database parameters.

h. Accept DDC software and information for subsequent loading into a specific DDC. Provide all necessary software and hardware required to support this function, including an EIA ANSI/EIA/TIA-232-F port.

i. Disable/enable each DDC.

j. Perform all workstation functions as specified.

2.15 DDC SOFTWARE

All DDC software described in this specification shall be furnished as part of the complete DDC System.

2.15.1 Operating System

Each DDC shall contain an operating system that controls and schedules that DDC's activities in real time. The DDC shall maintain a point database in its memory that includes all parameters, constraints, and the latest value or status of all points connected to that DDC. The execution of DDC application programs shall utilize the data in memory resident files. The operating system shall include a real time clock function that maintains the seconds, minutes, hours, date and month, including day of the week. Each DDC real time clock shall be automatically synchronized with the network control panel real time clock at least once per day to plus or minus 10 seconds. When the network control panel is connected to a central workstation/tester, the network control panel RTC shall be updated by the central workstation/tester RTC. The time synchronization shall be accomplished without operator intervention and without requiring system shutdown. The operating system shall allow loading of software, data files data entry, and diagnostics from the central workstation/tester both locally through the central workstation/tester port and remotely through a network control panel and the manufacturers control network.

2.15.1.1 Startup

The DDC shall have startup software that causes automatic commencement of operation without human intervention, including startup of all connected I/O functions. A DDC restart program based on detection of power failure at the DDC shall be included in the DDC software. Upon restoration of power to the DDC, the program shall restart equipment and restore loads to the state at time of power failure, or to the state as commanded by time programs or other overriding programs. The restart program shall include start time delays between successive commands to prevent demand surges or overload trips. The startup software shall initiate operation of self-test diagnostic routines. Upon failure of the DDC, if the database and application software are no longer resident or if the clock cannot be read, the DDC shall not restart and systems shall remain in the failure mode indicated until the necessary repairs are made. If the database and application programs are resident, the DDC shall resume operation after an adjustable time delay of from 0 to 600 seconds. The startup sequence for each DDC shall include a unique time delay setting for each control output when system operation is initiated.

2.15.1.2 Operating Mode

Each DDC shall control and monitor functions as specified, independent of communications with other DDC. This software shall perform all DDC functions and DDC resident application programs as specified using data obtained from I/O functions and based upon the DDC real time clock function. When communications circuits between the DDC are operable, the DDC shall obtain real time clock updates and any required global data values transmitted from other network control panels. The DDC software shall execute commands after performing constraints checks in the DDC. Status and analog values, including alarms and other data shall be transmitted from other network control panels when communications circuits are operable. If communications are not available, each DDC shall function

in stand-alone mode and operational data, including the latest status and value of each point and results of calculations, normally transmitted from other network control panels shall be stored for later transmission to the network control panel. Storage for the latest 256 values shall be provided at each network control panel. Each DDC shall accept software downloaded from the network control panel. Constraints shall reside at the DDC.

2.15.1.3 Failure Mode

Upon failure for any reason, each DDC shall perform an orderly shutdown and force all DDC outputs to a predetermined (failure mode) state, consistent with the failure modes shown and the associated control device.

2.15.2 Functions

The Contractor shall provide software necessary to accomplish the following functions, as appropriate, fully implemented and operational, within each network control panel, RIU, unitary controller and universal programmable controller.

a. Scanning of inputs.

b. Control of outputs.

c. Reporting of analog changes outside a selectable differential.

d. Reporting of unauthorized digital status.

e. Reporting of alarms automatically to network control panel.

f. Reporting of I/O status to network control panel upon request.

g. Maintenance of real time, updated by the network control panel at least once a day.

h. Communication with the network control panel.

i. Execution of DDC resident application programs.

j. Averaging or filtering of AIs.

k. Constraints checks (prior to command issuance).

l. Diagnostics.

m. Portable workstation/tester operation as specified.

n. Reset of PA by operator based on time and value.

2.15.2.1 Analog Monitoring

The system shall measure and transmit analog values including calculated analog points. An analog change in value is defined as a change exceeding a preset differential value as specified. The record transmitted for each analog value shall include a readily identifiable flag which indicates the abnormal status of the value when it deviates from operator selectable upper and lower analog limits. Analog values shall be expressed in proper engineering units with sign. Engineering units conversions shall be provided for each measurement. Each engineering units conversion set shall

include range, span, and conversion equation. A vocabulary of engineering unit descriptors shall be provided, using at least three alphanumeric characters to identify information in the system. The system shall support 255 different engineering units.

2.15.2.2 Logic (Virtual) Points

Logic (virtual) points shall be software points entered in the point database which are not directly associated with a physical I/O function. Logic (virtual) points shall be analog or digital points created by calculation from any combination of digital and analog points, or other data having the properties of real points, including alarms, without the associated hardware. Logic (virtual) points shall be defined or calculated and entered into the database by the Contractor. The calculated analog point shall have point identification in the same format as any other analog point. The calculated point shall be used in any program where the real value is not obtainable directly. Constants used in calculations shall be changeable on-line by the operator. Calculated point values shall be current for use by the system within 10 seconds of the time of any input changes.

2.15.2.3 State Variables

If an analog point represents more than two (up to eight) specific states, each state shall be nameable. For example, a level sensor shall be displayed at its measured engineering units plus a state variable with named states usable in programs or for display such as low alarm/low/normal/high/high alarm.

2.15.2.4 Analog Totalization

Any analog point shall be operator assignable to the totalization program. Up to eight analog values shall be totalized within a selectable time period. At the end of the period, the totals shall be stored. Totalization shall then restart from zero for the next time period. The program shall keep track of the peak and total value measured during the current period and for the previous period. The operator shall be able to set or reset each totalized value individually. The time period shall be able to be operator defined, modified or deleted on-line.

2.15.2.5 Energy Totalization

The system shall calculate the heat energy in Btus, for each energy source consumed by the mechanical systems specified, totalize the calculated Btus, the instantaneous rate in Btus per hour, and store totals in thousands of Btus (MBtu). The Btus calculated shall be totalized for an adjustable time period. The time period shall be defined uniquely for each Btu totalization.

2.15.2.6 Trending

Any analog or calculated point shall be operator assignable to the trend program. Up to eight points shall be sampled at individually assigned intervals, selectable between one minute and two hours. A minimum of the most recent 128 samples of each trended point shall be stored. The sample intervals shall be able to be defined, modified, or deleted on-line.

2.15.3 I/O Point Database/Parameter Definition

Each I/O point shall be defined in a database residing in the DDC. The definition shall include all physical parameters associated with each point. Each point shall be defined and entered into the database by the Contractor, including as applicable:

a. Name.

b. Device or sensor type (i.e., sensor, control relay, motors).

c. Point identification number.

d. Unit.

e. Building number.

f. Area.

g. Island.

h. DDC number and channel address.

i. KW (running).

j. KW (starting).

k. Sensor range.

l. Controller range.

m. Sensor span.

n. Controller span.

o. Engineering units conversion (scale factor).

p. Setpoint (analog).

q. High reasonableness value (analog).

r. Low reasonableness value (analog).

s. High alarm limit differential (return to normal).

t. Low alarm limit differential (return to normal).

u. High alarm limit (analog).

v. Low alarm limit (analog).

w. Alarm disable time period upon startup or change of setpoint.

x. Analog change differential (for reporting).

y. Alarm class and associated primary message text.

z. High accumulator limit (pulse).

aa. Status description.

bb. Run time target.

cc. Failure mode as specified and shown.

dd. Constraints as specified.

2.15.4 Alarm Processing

Each DDC shall have alarm processing software for AI, DI, and PA alarms for all real and virtual points connected to that DDC.

2.15.4.1 Digital Alarms Definition

Digital alarms are those abnormal conditions indicated by DIs as specified and shown.

2.15.4.2 Analog Alarms Definition

Analog alarms are those conditions higher or lower than a defined value, as measured by an AI. Analog readings shall be compared to predefined high and low limits, and alarmed each time a value enters or returns from a limit condition. Unique high and low limits shall be assigned to each analog point in the system. Analog alarm limits shall be stored in the DDC database. Each analog alarm limit shall have an associated unique limit differential specifying the amount by which a variable must return into the proper operating range before being annunciated as a return-to-normal-state. All limits and differentials shall be entered on-line by the operator in limits of the measured variable, without interruption or loss of monitoring of the point concerned. The program shall automatically change the high or low limits or both, of any analog point, based on time scheduled operations as specified, allowing for a time interval before the alarm limit becomes effective. In CPA applications, key the limit to a finite deviation traveling with the setpoint. The system shall automatically suppress analog alarm reporting associated with a digital point when that digital point is turned off.

2.15.4.3 Pulse Accumulator Alarms Definition

Pulse accumulator alarms are those conditions calculated from totalized values of accumulator inputs or PA input rates that are outside defined limits as specified and shown. PA totalized values shall be compared to predefined limits and alarmed each time a value enters a limit condition. Unique limits shall be assigned to each PA point in the system. Limits shall be stored in the DDC database.

2.15.5 Constraints

2.15.5.1 Equipment Constraints Definitions

Each control point in the database shall have DDC resident constraints defined and entered by the Contractor, including as applicable:

a. Maximum starts (cycles) per hour.

b. Minimum off time.

c. Minimum on time.

d. High limit (value in engineering units).

e. Low limit (value in engineering units).

2.15.5.2 Constraints Checks

Control devices connected to the system shall have the DDC memory resident constraints checked before each command is issued to insure that no equipment damage will result from improper operation. Each command shall be executed by the DDC only after all constraints checks have been passed. Each command point shall have unique constraints assigned. High and low "reasonableness" values or one differential "rate-of-change" value shall be assigned to each AI. Values outside the reasonableness limits shall be rejected and an alarm message sent to the network control panel or portable workstation/tester. Status changes and analog point values shall be reported to the workstation upon operator request, such as for reports, alphanumeric displays, graphic displays, and application programs. Each individual point shall be capable of being selectively disabled by the operator from a workstation/tester. Disabling a point shall prohibit monitoring and automatic control of that point.

2.15.6 Diagnostics

Each DDC shall have self-test diagnostic routines implemented in firmware. The tests shall include routines that exercise memory. Diagnostic software shall be usable in conjunction with the central workstation/tester and portable workstation/tester. The software shall display messages in English to inform the tester's operator of diagnosed problems.

2.15.7 Summer-Winter Operation Monitoring

The system shall provide software to automatically change the operating parameters, monitoring of alarm limits, and start-stop schedules for each mechanical system from summer to winter and vice-versa. The software shall provide automatic commands to applications programs to coordinate proper summer or winter operation. Change over setpoints shall be operator selectable and settable.

2.15.8 Control Sequences and Control Loops

Sufficient memory shall be provided to implement the requirements specified and shown for each DDC. Specific functions to be implemented are defined in individual system control sequences and database tables shown in the drawings, and shall include, as applicable, the following:

a. PI Control: This function shall provide proportional control and proportional plus integral control.

b. Two Position Control: This function shall provide control for a two state device by comparing a set point against a process variable and an established deadband.

c. Floating Point Control: This function shall exercise control when an error signal exceeds a selected deadband, and shall maintain control until the error is within the deadband limits.

d. Signal Selection: This function shall allow the selection of the highest or lowest analog value from a group of analog values as the basis

of control. The function shall include the ability to cascade analog values so that large numbers of inputs can be reduced to one or two outputs.

e. Signal Averaging: This function shall allow the mathematical calculation of the average analog value from a group of analog values as the basis of control. The function shall include the ability to "weight" the individual analog values so that the function output can be biased as necessary to achieve proper control.

f. Reset Function: This function shall develop an AO based on up to two AIs and one operator specified reset schedule.

g. Cooling/Heating Operation Program: Software shall be provided to change, either automatically or on operator command, the operating parameters, monitoring of alarm limits, and start-stop schedules for each mechanical system where such a change from cooling to heating and vice versa is meaningful. The software shall provide commands to application programs to coordinate cooling or heating mode operation. Software shall automatically switch facilities from cooling to heating, and vice versa, based on schedules or temperatures. All HVAC equipment and systems shall be assigned to the program.

2.15.9 Command Priorities

A scheme of priority levels shall be provided to prevent interaction of a command of low priority with a command of higher priority. The system shall require the latest highest priority command addressed to a single point to be stored for a period of time longer than the longest time constraint in the on and off states, insuring that the correct command shall be issued when the time constraint is no longer in effect or report the rejected command. Override commands entered by the operator shall have higher priority than those emanating from applications programs.

2.15.10 Resident Application Software

The Contractor shall provide resident applications programs to achieve the sequences of operation, parameters, constraints, and interlocks necessary to provide control of the systems connected to the DDC system. Application programs shall be resident and shall execute in the DDC, and shall coordinate with each other, to insure that no conflicts or contentions remain unresolved. The Contractor shall coordinate the application programs specified with the equipment and controls operation, and other specified requirements. A scheme of priority levels shall be provided to prevent interaction of a command of low priority with a command of higher priority. The system shall require the latest highest priority command addressed to a single point to be stored for a period of time longer than the longest time constraint in the ON and OFF states, insuring that the correct command shall be issued when the time constraint is no longer in effect or the rejected command shall be reported. Override commands entered by the operator shall have higher priority than those emanating from application programs.

2.15.10.1 Program Inputs and Outputs

The Contractor shall select the appropriate program inputs listed for each application program to calculate the required program outputs. Where the specific program inputs are not available, a "default" value or virtual point appropriate for the equipment being controlled and the proposed sequence of operation shall be provided to replace the missing input, thus

allowing the application program to operate. AIs to application programs shall have an operator adjustable deadband to preclude short cycling or hunting. Program outputs shall be real analog or digital outputs or logic (virtual) points as required to provide the specified functions. The Contractor shall select the appropriate input and output signals to satisfy the requirements for control of systems.

2.15.10.2 DDC General Conditions

The Contractor shall provide software required to achieve the sequences of operation, parameters, constraints, and interlocks shown. Application software shall be resident in the DDC in addition to any other required software. In the event of a DDC failure, the controlled equipment shall continue to function in the failure mode shown.

2.15.10.3 Scheduled Start/Stop Program

This program shall start and stop equipment based on a time of day schedule for each day of the week, and on a holiday schedule. To eliminate power surges, an operator adjustable time delay shall be provided between consecutive start commands.

a. Program Inputs:

(1) Day of week/holiday.

(2) Time of day.

(3) Cooling and heating high-low alarm limits.

(4) Cooling and heating start-stop schedules.

(5) Cooling or heating mode of operation.

(6) Equipment status.

(7) Equipment constraints.

(8) Consecutive start time delay.

b. Program Outputs: Start/stop signal.

2.15.10.4 Optimum Start/Stop Program

This program shall start and stop equipment as specified for the scheduled start/stop program, but shall include a sliding schedule based on indoor and outdoor air conditions. The program shall take into account the thermal characteristics of the structure, and indoor and outdoor air conditions, using prediction software to determine the minimum time of HVAC system operation needed to satisfy space environmental requirements at the start of the occupied cycle, and determine the earliest time for stopping equipment at the day's end without exceeding space environmental requirements. An adaptive control algorithm shall be utilized to automatically adjust the constants used in the program.

a. Program Inputs:

(1) Day of week/holiday.

(2) Time of day.

(3) Cooling or heating mode of operation.

(4) Equipment status.

(5) Cooling and heating building occupancy schedules.

(6) Space temperature.

(7) Building heating constant (operator adjustable and automatically optimized).

(8) Building cooling constant (operator adjustable and automatically optimized).

(9) OA temperature.

(10) Required space temperature at occupancy (heating).

(11) Required space temperature at occupancy (cooling).

(12) Equipment constraints.

(13) Cooling and heating high-low alarm limits.

b. Program Outputs: Start/stop signal.

2.15.10.5 Day-Night Setback Program

The software shall limit the rise or drop of space temperature (or specified fluid temperature) during unoccupied hours. Whenever the space temperature (or specified fluid temperature) is above (or below for heating) the operator assigned temperature limit, the system shall be turned on until the temperature is within the assigned temperature limit.

a. Program Inputs:

(1) Day of week.

(2) Time of day.

(3) Cooling or heating mode of operation.

(4) Cooling and heating occupancy schedules.

(5) Equipment status.

(6) Space temperature (or specified fluid temperature).

(7) Minimum space temperature (or specified fluid temperature) during unoccupied periods.

(8) Maximum space temperature (or specified fluid temperature) during unoccupied periods.

(9) Equipment constraints.

b. Program Outputs: Start/stop signal.

2.15.10.6 Economizer Program I

The software shall reduce the HVAC system cooling requirements when the OA dry bulb temperature is less than the return air temperature. When the OA dry bulb temperature is above the return air temperature or changeover setpoint, the OA dampers, return air dampers, and relief air dampers shall be positioned to provide minimum required OA. When the OA dry bulb temperature is below a changeover setpoint temperature, the OA dampers, return air dampers, and exhaust air dampers shall be positioned to maintain the required mixed air temperature.

a. Program Input:

(1) Changeover conditions.

(2) OA dry bulb temperature.

(3) RA dry bulb temperature.

(4) Mixed air dry bulb temperature.

(5) Equipment constraints.

b. Program Output: Damper actuator/cooling control signal.

2.15.10.7 Not Used
2.15.10.8 Not Used

2.15.10.9 Reheat Coil Reset Program

The software shall select the zone with the least amount of heat required. The program shall reset the cold deck discharge temperature upward until it satisfies the zone with the lowest demand, or until the zone humidity control requirements cannot be met.

a. Program Inputs:

(1) Zone RH high limit.

(2) Zone temperature (where shown).

(3) Zone RH (where shown).

(4) Cold deck temperature.

(5) Reheat coil valve positions or proportional signals from primary elements.

(6) Minimum space temperature during occupied periods.

(7) Maximum space temperature during occupied periods.

(8) Equipment constraints.

b. Program Output: Cold deck valve actuator control signal.

2.15.10.10 Heating and Ventilating Unit Program

The software shall control hot water/steam coil valve position to maintain space/supply air temperatures for heating and ventilating units. This program shall be coordinated with the ventilation-recirculation program for damper control and the scheduled or optimum start-stop program for fan control.

a. Program Inputs

(1) Space temperature.
(2) Space temperature setpoint.
(3) Supply air temperature.
(4) Supply air temperature setpoint.

b. Program Outputs

(1) Heating or steam coil valve actuator control signal.
(2) Damper actuator control signal.

2.15.10.11 Air Volume Control Program

The software shall monitor supply and return/exhaust air flow volumes and modulate fan controls to maintain required air flow volumes and/or ratio or fixed differential of supply to return air flows. This program shall be coordinated with the ventilation-recirculation program and the economizer program for damper control and with static pressure control requirements for fan control.

a. Program Inputs

(1) Supply air flow.
(2) Return/exhaust air flow.
(3) Required supply air flow - high and low limits.
(4) Required return/exhaust air flow - high and low limits.
(5) Volume offset or ratio, as appropriate.

b. Program Outputs

(1) Supply fan volume control.
(2) Return/exhaust fan volume control.

2.15.10.12 Air Distribution Unitary Controller Software

Software shall be provided for the management and control of the air distribution terminal units. Software shall allow for operator definition of multiple air distribution terminal units as functional groups which may be treated as a single entity; monitoring, alarming and reporting of terminal unit parameters on an individual or group basis; and remote setpoint adjustment on an individual or group basis.

a. Functions:

(1) Volume control in response to temperature.
(2) Volume flow limits, minimum and maximum.
(3) Occupied and unoccupied operation with associated temperature and volume limits.
(4) Temperature setpoint override.

b. Program Inputs

(1) Space temperature.
(2) Space temperature setpoint.
(3) Space temperature setpoint limits.
(4) Supply airflow volume.
(5) Supply airflow volume high and low limits.

c. Program Outputs

(1) Supply volume control signal.
(2) Auxiliary fan start/stop signal.
(3) Supplemental heat control signal.

2.15.10.13 Chiller Selection Program

Chiller program shall be used for chiller selection as well as control and monitoring of chillers. The software shall select the most efficient chiller or combination of chillers based on chiller operating data to satisfy the cooling load. Based on chiller operating data, energy input vs chilled water output, the chiller with the highest efficiency shall be selected to satisfy the cooling load calculated by prediction software. The program shall calculate equipment electrical energy input based on percent full load, current, or other inputs provided, and equipment nameplate data. The program shall prevent the chiller from going to full load for a predetermined period to allow the system to stabilize, in order to determine the actual cooling load. The program shall follow the chiller manufacturer's startup and shutdown sequence requirements. Interlocks between chilled water pumps, condenser water pumps, and chiller shall be in accordance with the chiller manufacturer's requirements.

a. Program Inputs

(1) Efficiency curves.
(2) Chiller water supply temperatures.
(3) Chiller water return temperatures.
(4) Chiller water flows.
(5) Entering condenser water temperatures.
(6) Leaving condenser water temperatures.
(7) Condenser water flows.
(8) Instantaneous KW to chillers.
(9) Instantaneous KW to chilled water pumps (if variable).
(10) Instantaneous KW to condenser water pumps (if variable).
(11) Instantaneous KW to cooling tower fans (if variable).
(12) Common chilled water supply temperatures.
(13) Common chilled water return temperatures.
(14) Total chilled water flow.
(15) Chilled water pumps status.
(16) Refrigerant pressure, suction and discharge.
(17) Equipment constraints.
(18) Steam flow.

b. Program Outputs

(1) Start/stop signals for chillers (manual or automatic to control panel).
(2) Start/stop signals for chilled water pumps (manual or automatic to control panel).
(3) Start/stop signals for condenser water pumps (manual or

automatic to control panel).
(4) Start/stop signals for cooling tower fans (manual or automatic to control panel).
(5) Chilled water supply temperature setpoint control signal.
(6) Chiller efficiency.

2.15.10.14 Not Used
2.15.10.15 Not Used
2.15.10.16 Not Used

2.15.10.17 Chiller Demand Limit Program

The software shall limit maximum available chiller cooling capacity in fixed steps to limit electrical demand. Each fixed step shall be considered as one point in the demand limiting program. Each chiller demand control step shall be assigned an equipment priority level.

a. Program Inputs:

(1) Chiller percent capacity.
(2) Minimum cooling capacity.
(3) Equipment priority schedules.
(4) Equipment constraints.

b. Program Output

(1) Calculated percent load point.
(2) Control signal to chiller controller/panel, new setpoint (manual or automatic).

2.15.10.18 Hot Water OA Reset Program

The software shall reset the hot water temperature supplied by the boiler or converter in accordance with the OA temperature or other specified independent- dent variable. The hot water supply temperature shall be reset downward or upward from a fixed temperature proportionally, as a function of OA temperature or other specified independent variable.

a. Program Inputs

(1) Reset schedule.
(2) OA dry bulb temperature or other specified independent variable.
(3) Hot water supply temperature.
(4) Maximum hot water supply temperature.
(5) Minimum hot water supply temperature.
(6) Equipment constraints.

b. Program Output: Valve actuator control signal.

2.15.10.19 Boiler Monitoring and Control

The software shall remotely monitor and control boiler operation based on boiler operational data. The program shall monitor inputs and discontinue boiler operation if any monitored point exceeds a predetermined value or changes status incorrectly. The operator shall be able to add or delete individual program input points from the list of points that will discontinue boiler operation.

a. Program Inputs

(1) Fuel flow.
(2) Fuel pressure (natural gas).
(3) Fuel temperature (heated fuel oil).
(4) Flame status.
(5) Flue gas oxygen.
(6) Flue gas temperature.
(7) Make-up or feed water flow.
(8) Furnace draft.
(9) Flue gas carbon monoxide (for boilers over 20 million BTUs).
(10) Hot water flow.
(11) Hot water pressure.
(12) Hot water supply temperature.
(13) Hot water return temperature.
(14) Hot water BTUs.
(15) Steam flow.
(16) Steam pressure.
(17) Steam temperature.
(18) Steam BTUs.
(19) Feedwater temperature.
(20) Boiler drum level.

b. Program Outputs

(1) Boiler enable/disable control signal.
(2) Boiler enable/disable permission to boiler operator for manual control.
(3) Boiler efficiency.

PART 3 EXECUTION

3.1 GENERAL INSTALLATION CRITERIA

3.1.1 HVAC Control System

The HVAC control system shall be completely installed and ready for operation. Dielectric isolation shall be provided where dissimilar metals are used for connection and support. Penetrations through and mounting holes in the building exterior shall be made watertight. The HVAC control system installation shall provide clearance for control system maintenance by maintaining access space between coils, access space to mixed-air plenums, and other access space required to calibrate, remove, repair, or replace control system devices. The control system installation shall not interfere with the clearance requirements for mechanical and electrical system maintenance.

3.1.2 Software Installation

Software shall be loaded for an operational system, including databases for all points, operational parameters, and system, command, and application software. The Contractor shall provide original and backup copies of source, excluding the general purpose operating systems and utility programs furnished by computer manufacturers and the non-job-specific proprietary code furnished by the system manufacturer, and object modules for software on each type of media utilized, within 30 days of formal Government acceptance. In addition, a copy of individual floppy disks of software for each DDC panel shall be provided.

3.1.3 Device Mounting Criteria

Devices mounted in or on piping or ductwork, on building surfaces, in mechanical/electrical spaces, or in occupied space ceilings shall be installed in accordance with manufacturer's recommendations. Control devices to be installed in piping and ductwork shall be provided with required gaskets, flanges, thermal compounds, insulation, piping, fittings, and manual valves for shutoff, equalization, purging, and calibration. Strap-on temperature sensing elements shall not be used except as specified.

3.1.4 Wiring Criteria

Wiring external to control panels, including low-voltage wiring, shall be installed in metallic raceways. Nonmetallic-sheathed cables or metallic-armored cables may be installed in areas permitted by NFPA 70 Wiring shall be installed without splices between control devices and DDC panels. Instrumentation grounding shall be installed as necessary to prevent ground loops, noise, and surges from adversely affecting operation of the system. Ground rods installed by the contractor shall be tested as specified in IEEE Std 142. Cables and conductor wires shall be tagged at both ends, with the identifier shown on the shop drawings. Electrical work shall be as specified in Section 16415A ELECTRICAL WORK, INTERIOR.

3.2 CONTROL SYSTEM INSTALLATION

3.2.1 Damper Actuators

Actuators shall not be mounted in the air stream. Multiple actuators operating a common damper shall be connected to a common drive shaft. Actuators shall be installed so that their action shall seal the damper to the extent required to maintain leakage at or below the specified rate and shall move the blades smoothly.

3.2.2 Not Used

3.2.3 Room Instrument Mounting

Room instruments , such as wall mounted thermostats, shall be mounted 60 inches above the floor unless otherwise shown. Temperature setpoint devices shall be recess mounted.

3.2.4 Freezestats

For each 20 square feet of coil face area, or fraction thereof, a freezestat shall be provided to sense the temperature at the location shown. Manual reset freezestats shall be installed in approved, accessible locations where they can be reset easily. The freezestat sensing element shall be installed in a serpentine pattern.

3.2.5 Averaging Temperature Sensing Elements

Sensing elements shall have a total element minimum length equal to 1 linear foot per square foot of duct cross-sectional area.

3.3 CONTROL SEQUENCES OF OPERATION

3.3.1 General Requirements - HVAC Systems

The sequence of operation shall be provided by the Contractor on the

control drawings. Heating and Ventilating Unit HVU-1 & EF-4 shall be as indicated on sheet M6.01 of the RFP documents. The sequences provided below and the technical requirements in section 1006 MECHANICAL REQUIREMENTS shall be used in providing these control sequence of operation. These requirements shall apply to all primary HVAC systems unless modified herein. The sequences describe the actions of the control system for one direction of change in the HVAC process analog variable, such as temperature, humidity or pressure. The reverse sequence shall occur when the direction of change is reversed.

3.3.1.1 Supply Fan Operating

HVAC system outside air, return air, exhaust air and relief air dampers shall function as described for specific modes of operation. Interlocked exhaust fans shall be stopped in the unoccupied and ventilation delay modes and their dampers shall be closed. Interlocked exhaust fans shall run in the occupied mode, and their dampers shall open. Humidification shall energize. Cooling coil control valves and cooling coil distribution pumps shall function as described for the specific modes of operation unless their control is assumed by the freeze protection system. Heating coil valves shall be under control.

3.3.1.2 Supply Fan Not Operating

When an HVAC system is stopped, all interlocked fans shall stop, the outside air, exhaust air and relief air dampers shall close, the return air damper shall open, humidification shall stop, and cooling coil valves for coils shall close to the coil. Heating coil valves shall remain under control.

3.3.1.3 Hydronic Heating - Distribution Pump Operating

Hydronic heat-exchanger valves shall be under control.

3.3.1.4 Hydronic Heating - Distribution Pump Not Operating

Hydronic heat-exchanger valves shall close.

3.3.2 Perimeter Radiation Control Sequence

All Modes - A room thermostat, located by Contractor shall operate a control valve to maintain the setpoint 70 degrees F.

3.3.3 Unit Heater and Cabinet Unit Heater

All Modes - A wall-mounted thermostat with an "AUTO-OFF" switch located by Contractor, shall cycle the fan to maintain its setpoint 60 degrees F. when the switch is in the "AUTO" position. When the switch is in the "OFF" position, the fan shall be stopped.

3.3.4 Exhaust fans

All Modes - A wall-mounted thermostat with an "AUTO-OFF" switch located by Contractor, shall cycle the fan to maintain its setpoint 85 degrees F. when the switch is in the "AUTO" position. When the switch is in the "OFF" position, the fan shall be stopped.

3.3.5 Supply fans

All Modes - A wall-mounted thermostat with an "AUTO-OFF" switch located by Contractor, shall cycle the fan to maintain its setpoint 85 degrees F. when the switch is in the "AUTO" position. When the switch is in the "OFF" position, the fan shall be stopped.

3.3.6 Not Used
3.3.7 Not Used

3.3.8 Single Building Hydronic Heating with Hot Water Boiler & Hot Water Backup boiler

3.3.8.1 All Modes

The DDC system shall accept a signal from a sunshielded outside air temperature sensing element and transmitter. The DDC system shall start and stop lead distribution pump (HWP-1), circulating pump HWP-3, and lead boiler B-1 at the outside air temperatures of 60 degrees F. The DDC system shall start and stop lag distribution pump (HWP-2), circulating pump HWP-4, and lead boiler B-2 at the outside air temperatures of 60 degrees F. The DDC system shall reset the hydronic heating supply temperature setpoint in a linear schedule based on the outside air temperature at 60 degrees F. - 200 degrees F hot water and 75 degrees F - 150 degrees F hot water. The DDC system shall accept a signal from a temperature sensing element and transmitter located in the hydronic heating supply line and the DDC system output shall modulate the hydronic heating system control valve to maintain the reset schedule setpoint in the hydronic heating supply line.

3.3.8.2 Occupied Mode

When the system time schedule places the system in the occupied mode, a space temperature sensing element and transmitter shall signal the DDC system, which shall maintain the space temperature setpoint by modulating the secondary hydronic system zone valve.

3.3.8.3 Unoccupied Mode

When the system is in the unoccupied mode, the space temperature setpoint shall be 55 degrees F Winter and 80 degrees Summer.

3.3.9 Not Used
3.3.10 Not Used
3.3.11 Not Used
3.3.12 Not Used
3.3.13 Not Used
3.3.14 Not Used
3.3.15 Not Used
3.3.16 Not Used
3.3.17 Not Used

3.3.18 Variable Air Volume Control Sequence with Return Fan

3.3.18.1 Occupied, Unoccupied, and Ventilation Delay Modes of Operation

Ventilation delay mode timing shall start prior to the occupied mode timing. During ventilation delay mode, the dampers shall remain in their normal positions, except when under economizer control. At the time shown, the DDC system shall place the system in the occupied mode. At the

expiration of the ventilation delay mode timing period, the DDC system shall place the minimum outside air damper under minimum outside air flow control and shall place the economizer outside air, return air, and relief air dampers under economizer and mixed air temperature control. At the time shown, the DDC system shall place the control system in the unoccupied mode of operation and dampers shall return to their normal positions.Time shall initially be provided for 24 hour operation.

3.3.18.2 Fan Control

a. Occupied and Ventilation Delay Modes - Supply fan and return fan and exhaust fan(s) shall operate continuously.

b. Unoccupied Mode - The supply fan and the return fan and exhaust fan(s)shall cycle according to the night setback schedule. The fans shall start and stop at the setpoints of 60 degrees F/55 degrees F respectfully.

3.3.18.3 Supply Duct Pressurization Control

When the supply fan starts, the DDC system shall thru variable frequency drive from the signal of a static pressure sensing element and transmitter to maintain the setpoint. A high limit static pressure switch in the fan discharge shall stop the supply fan and the return fan and initiate a high static alarm when the static pressure exceeds the setpoint.

3.3.18.4 Return Fan Volume Control

When the return fan starts, the DDC system shall thru variable frequency drivefrom the signals of an air flow measurement station and transmitter in the return air ductwork, in combination with an air flow measurement station and transmitter in the supply air ductwork, to maintain a constant difference between supply air and return air flow rates.

3.3.18.5 Filters

A differential pressure switch across each filter shall initiate a filter alarm when the pressure drop across the filter reaches the setpoint 0.5 inch water.

3.3.18.6 Freeze Protection

A freezestat, located downstream of heating coil, shall stop the supply and return fans, cause the outside air, return air, and relief air dampers to return to their normal position, and shall initiate a low temperature alarm if the temperature drops below the freezestat's setpoint of 38 degrees F. The DDC system shall monitor the freezestat through auxiliary contacts and shall indicate an alarm condition when the freezestat trips.

3.3.18.7 Cooling Coil Control

a. Occupied and Ventilation Delay Modes - The cooling coil control valve shall be modulated by the DDC system from the signal of a temperature sensing element and transmitter located in the coil discharge air to maintain the setpoint.

b. Unoccupied Mode - The cooling coil control valve shall remain closed.

Pre-heating Coil Control:

a. Occupied and Ventilation Delay Modes - The preheating coil control valve shall be modulated by the DDC system from the signal of a temperature sensing element and transmitter located in the coil discharge air to maintain the setpoint of 55 degrees F.

b. Unoccupied Mode - The preheating coil control valve shall remain closed.

3.3.18.8 Minimum Outside Air Flow Control

a. Occupied Mode - The minimum outside air damper shall be modulated to maintain the minimum outside air flow at setpoint, as sensed by an air flow measurement station located in the minimum outside air duct.

b. Unoccupied and Ventilation Delay Modes - The minimum outside air damper shall remain closed.

Humidity Control:

a. Occupied Mode - The DDC system shall accept the signals from a space relative humidity sensor and a duct relative humidity sensor to control the humidifier valve and the cooling coil valve. The DDC system shall gradually open the cooling coil valve in the event that the space relative humidity continues to rise after the humidifier valve is closed. The DDC system shall gradually operate the humidifier valve from the signal of a space relative humidity sensor/transmitter to maintain relative humidity setpoint. The DDC system shall receive a signal from a relative humidity sensor/transmitter in the ductwork downstream of the humidifier and shall limit the relative humidity at that point to a high-limit relative humidity setpoint.

b. Unoccupied and Ventilation Delay Modes - The humidifier valve shall be closed.

3.3.18.9 Economizer and Mixed Air Temperature Control

The DDC system shall accept the signal of an outside air temperature sensing element and transmitter and the signal of a return air temperature sensing element and transmitter. When the return air temperature is above the economizer setpoint of 65 degrees F, and the outside air temperature is sufficiently below the return air temperature to be effective for cooling, the DDC system shall place the AHU in the economizer mode by modulating the economizer outside air, relief air, and the return air dampers to maintain the mixed air temperature at setpoint of 52 degrees F at 78 degrees F return temperature and 65 degrees F at 72 degrees F return air temperature. As the economizer outside air and relief air dampers open, the return air damper closes. When the system is not in economizer mode, the economizer outside air and relief air dampers shall remain closed and the return air damper shall remain open.

3.3.18.10 Pressure Independent Terminal VAV Box with Velocity Controller

All Modes - The control damper of the VAV box shall modulate in response to the signal from a flow sensing element at the discharge or inlet of the VAV box to a microprocessor based VAV box velocity controller. The velocity controller shall control the box damper from the minimum flow position to the full flow position from the signal of a space temperature sensing

element. When the space temperature decreases, the damper shall gradually close to the minimum flow position to maintain the cooling setpoint of 75 degrees F Summer. When the space temperature calls for heating after the minimum flow position is reached, control shall then pass through a temperature dead band. When the space temperature has dropped through the dead band, the duct heating coil shall be gradually controlled to maintain the heating setpoint 70 degrees F.

3.3.18.11 Fan Powered Terminal VAV Box

a. Series Fan Powered Terminal Box. All Modes - The VAV box fan shall be energized from an upstream duct pressure switch confirming HVAC system fan operation. A space temperature sensing element, located in communication equipment room 117 & 173 and electrical equipment room 120, and classroom 128, acting through a microprocessor based VAV box controller, shall modulate the supply air control damper, mixing the supply air and recirculating room air to provide a constant volume of air to the space to maintain the cooling set point 75 degrees F until the supply air damper closes to minimum supply air flow. When the space temperature calls for heat after the supply air damper is closed to minimum flow and the VAV box is in maximum recirculation, control shall then pass through the temperature dead band. When the space temperature has dropped through the temperature dead band, the duct heating coil shall be gradually controlled to maintain the heating setpoint of 70 degrees F.

b. Parallel Fan Powered Terminal VAV Box. All Modes - A space temperature sensing element, located in communications equipment room 117 & 173 and electrical equipment room 120 and classroom 128, acting through a microprocessor based VAV box controller, shall modulate the supply air control damper to maintain the cooling setpoint 75 degrees F until the supply air damper closes to minimum supply air flow. When the space temperature calls for heat after the supply air damper is closed to minimum flow, control shall then pass through the temperature deadband, and the VAV box fan shall be energized. When the space temperature has dropped through a second temperature deadband, the duct heating coil shall be gradually controlled to maintain the heating setpoint of 70 degrees F.

3.3.18.12 Emergency Fan Shutdown

All Modes - Smoke detectors in the supply air and return air ductwork shall stop the supply fan, exhaust fans and the return fan and initiate a smoke alarm if smoke is detected at either location. Restarting the supply fan, exhaust fan(s) and the return fan and exhaust fan(s)shall require manual reset at the smoke detector.

3.4 COMMISSIONING PROCEDURES

3.4.1 Evaluations

The Contractor shall make the observations, adjustments, calibrations, measurements, and tests of the control systems, set the time schedule, and make any necessary control system corrections to ensure that the systems function as described in the sequence of operation.

3.4.1.1 Item Check

Signal levels shall be recorded for the extreme positions of each controlled device. An item-by-item check of the sequence of operation requirements shall be performed using Steps 1 through 4 in the specified

control system commissioning procedures. Steps 1, 2, and 3 shall be performed with the HVAC system shut down; Step 4 shall be performed after the HVAC systems have been started. External input signals to the DDC system (such as starter auxiliary contacts, and external systems) may be simulated in steps 1, 2, and 3. With each operational mode signal change, DDC system output relay contacts shall be observed to ensure that they function.

3.4.1.2 Weather Dependent Test Procedures

Weather dependent test procedures that cannot be performed by simulation shall be performed in the appropriate climatic season. When simulation is used, the actual results shall be verified in the appropriate season.

3.4.1.3 Two-Point Accuracy Check

A two-point accuracy check of the calibration of each HVAC control system sensing element and transmitter shall be performed by comparing the DDC system readout to the actual value of the variable measured at the sensing element and transmitter or airflow measurement station location. Digital indicating test instruments shall be used, such as digital thermometers, motor-driven psychrometers, and tachometers. The test instruments shall be at least twice as accurate as the specified sensing element-to-DDC system readout accuracy. The calibration of the test instruments shall be traceable to National Institute Of Standards And Technology standards. The first check point shall be with the HVAC system in the shutdown condition, and the second check point shall be with the HVAC system in an operational condition. Calibration checks shall verify that the sensing element-to-DDC system readout accuracies at two points are within the specified product accuracy tolerances. If not, the device shall be recalibrated or replaced and the calibration check repeated.

3.4.1.4 Insertion and Immersion Temperatures

Insertion temperature and immersion temperature sensing elements and transmitter-to-DDC system readout calibration accuracy shall be checked at one physical location along the axis of the sensing element.

3.4.1.5 Averaging Temperature

Averaging temperature sensing element and transmitter-to-DDC system readout calibration accuracy shall be checked every 2 feet along the axis of the sensing element in the proximity of the sensing element, for a maximum of 10 readings. These readings shall then be averaged.

3.4.2 Space Temperature Controlled Perimeter Radiation

The heating medium shall be turned on, and the thermostat temperature setpoint shall be raised. The valve shall open. The thermostat temperature shall be lowered and the valve shall close. The thermostat shall be set at the setpoint shown.

3.4.3 Unit Heater and Cabinet Unit Heater

The "OFF/AUTO" switch shall be placed in the "OFF" position. Each space thermostat temperature setting shall be turned up so that it makes contact to turn on the unit heater fans. The unit heater fans shall not start. The "OFF/AUTO" switch shall be placed in the "AUTO" position. It shall be ensured that the unit heater fans start. Each space thermostat temperature

setting shall be turned down, and the unit heater fans shall stop. The thermostats shall be set at their temperature setpoints. The results of testing of one of each type of unit shall be logged.

3.4.4 Supply & Exhaust Fans

The "OFF/AUTO" switch shall be placed in the "OFF" position. Each space thermostat temperature setting shall be turned up so that it makes contact to turn on the fan. The fans shall not start. The "OFF/AUTO" switch shall be placed in the "AUTO" position. It shall be ensured that the fan starts. Each space thermostat temperature setting shall be turned down, and the unit heater fans shall stop. The thermostats shall be set at their temperature setpoints. The results of testing of one of each type of unit shall be logged.

3.4.5 Not Used
3.4.6 Not Used
3.4.7 Not Used

3.4.8 Single Building Hydronic Heating with Hot Water Boiler & Hot Water Backup Boiler

Steps for installation shall be as follows:

a. Step 1 - System Inspection: The HVAC system shall be observed in its shutdown condition. It shall be verified that power are available where required.

b. Step 2 - Calibration Accuracy Check with HVAC System Shutdown: Readings shall be taken with a digital thermometer at each temperature sensing element location. Each temperature shall be read at the DDC controller, and the thermometer and DDC system readings logged. The calibration accuracy of the sensing element-to-DDC system readout for outside air temperature and system supply temperature shall be checked.

c. Step 3 - Actuator Range Adjustments: A signal shall be applied to the actuator through an operator entered value to the DDC system. The proper operation of the actuators for all valves shall be verified visually. The signal shall be varied from live zero to full range, and it shall be verified that the actuators travel from zero stroke to full stroke within the signal range. It shall be verified that all sequenced actuators move from zero stroke to full stroke in the proper direction, and move the connected device in the proper direction from one extreme position to the other.

d. Step 4 - Control System Commissioning:

(1) The two-point calibration sensing element-to-DDC system readout accuracy check for the outside air temperature shall be performed. Any necessary software adjustments to setpoints or parameters shall be made to achieve the outside air temperature schedule.

(2) The outside air temperature shall be simulated through an operator entered value to be above the setpoint. It shall be verified that pumps HWP-1 and boiler B-1 stop. A value shall be entered to simulate that the outside air temperature is below the setpoint as shown. It shall be verified that pumps HWP-1 & HWP-2 start and boiler B-1 operates.

(3) The two-point calibration accuracy check of the sensing element-to-DDC system readout for the hydronic system supply temperature shall be performed. The supply temperature setpoint shall be set for the temperature schedule as shown. Signals of 8 ma and 16 ma shall be sent to the DDC system from the outside air temperature sensor, to verify that the supply temperature setpoint changes to the appropriate values.

(4) The control system shall be placed in the occupied mode. The calibration accuracy check of sensing element-to-DDC system readout shall be performed for each space temperature sensor and the values logged. Each space temperature setpoint shall be set as shown. The control system shall be placed in the unoccupied mode, and it shall be verified that each space temperature setpoint changes to the unoccupied mode setting.

(5) Repeat item (4) for Backup Boiler (B-2), circulation pump (HWP-3)and distribution pumps (HWP-1 & HWP-2).

3.4.9 Not Used
3.4.10 Not Used
3.4.11 Not Used
3.4.12 Not Used
3.4.13 Not Used
3.4.14 Not Used
3.4.15 Not Used
3.4.16 Not Used
3.4.17 Not Used

3.4.18 Variable Air Volume Control System - With Return Fan

Steps for installation shall be as follows:

a. Step 1 - System Inspection: The HVAC system shall be observed in its shutdown condition. It shall be verified that power are available where required, and that the outside air and relief air and exhaust air dampers are closed, the return air damper is open, and that the supply fan and return/relief fan variable frequency drives are off, preheating coil valve is open and cooling coil valve are closed.

b. Step 2 - Calibration Accuracy Check with HVAC System Shutdown: Readings shall be taken with a digital thermometer at each temperature sensing element location. Each temperature shall be read at the DDC controller, and the thermometer and DDC system display readings logged. The calibration accuracy of the sensing element-to-DDC system readout for outside air, return air, mixed air, preheating coil discharge temperatures shall be checked and cooling coil discharge temperatures shall be checked. The minimum outside air flow, supply air flow, and return air flow & exhaust air flow shall be read, using a digital indicating velometer, and the velometer and DDC system display readings logged. The flows should read zero.

c. Step 3 - Actuator Range Adjustments: A signal shall be applied to the actuators through an operator entered value at the DDC system. The proper operation of the actuators for all dampers and valves shall be visually verified. The signal shall be varied from live zero to full range, and actuator travel shall be verified from zero stroke to full stroke within the signal range. It shall be verified that all sequenced

and parallel operated actuators move from zero stroke to full stroke in the proper direction, and move the connected device in the proper direction from one extreme position to the other.

d. Step 4 - Control System Commissioning:

(1) With the fans ready to start, the control system shall be placed in the ventilation delay mode and in the occupied mode, and it shall be verified that supply fan AHU-1 and return fan RF-1 start. It shall be verified that the outside air dampers and relief air & exhaust air dampers are closed, the return air & exhaust air damper under control, and the preheating coil valve, cooling coil valve closed and variable frequency drives are off, by simulating a change in the fan discharge temperature. The system shall be placed out of the ventilation delay mode, and it shall be verified that the economizer outside air and relief air & exhaust air dampers remain closed, the return air damper remains open, and the minimum outside air damper comes under control.

(2) The two-point calibration accuracy check of sensing element-to-DDC system readout for the minimum outside air flow measurement station shall be performed. Force all VAV box dampers to the full open position, turn all exhaust fans off, manually adjust the supply duct static pressure to achieve the design duct static pressure, manually adjust the output to the return fan to establish the design differential flow difference between the supply and return duct flows, and manually adjust the minimum outside air flow to achieve a flow which is approximately 25% less than the desired air flow. Under these conditions, the minimum outside air flow control loop shall be tuned. Confirm stable operation of the minimum outside air flow control loop in response to a process disturbance.

(3) The starter switch of return fan RF-1 shall be turned to the "OFF" position, and the variable frequency drive shall be on. With supply fan AHU-1 running, a high static pressure input signal shall be simulated at the device by a pressure input to the sensing device. HVAC system shutdown shall be observed, and it shall be verified that the high static alarm is initiated. The HVAC system shall be restarted by manual reset, and it shall be verified that the high static alarm returns to normal.

(4) The two-point accuracy check of sensing element-to-DDC system readout for the static pressure in the supply duct shall be performed.

(5) Each VAV terminal unit controller's minimum flow and maximum flow setpoints shall be set at the same setting. This will prevent the VAV box damper from modulating under space temperature control and will achieve a constant supply duct system pressure drop. The return fan variable frequency drive shall be placed under control, and the starter switch shall be turned to the "AUTO" position so that the fan starts. The two-point calibration accuracy check of sensing element-to-DDC system readout for the air flow measurement stations shall be performed. The supply fan variable frequency drive shall be operated manually to change the supply fan flow, and the control system shall be set to control at XXX cfm at 4-ma input and XXX cfm at 20-ma input. The supply fan flow shall be changed to verify that the return flow setpoint

tracks the supply fan flow with the proper flow differential.

(6) The economizer mode shall be simulated by a change in the outside air temperature and the return air temperature through operator entered values and it shall be verified that the system goes into the economizer mode. The mixed air temperature shall be artificially changed through operator entered values to slightly open the economizer outside air damper and the second point of the two-point calibration accuracy check of sensing element-to-DDC system readout for outside air, return air, and mixed air temperatures shall be performed. The temperature setpoint shall be set as specified.

(7) The two-point calibration accuracy check of sensing element-to-DDC system readout for the fan discharge temperature shall be performed. The setpoint for the fan discharge temperature shall be set as specified. A change shall be simulated in the discharge air temperature through an operator entered value and it shall be verified that the control valve is modulated.

(8) The control system shall be placed in the unoccupied mode and it shall be verified that the HVAC system shuts down and the control system assumes the specified shutdown conditions. The space temperature shall be artificially changed to below the night setback temperature setpoint, and it shall be verified that the HVAC system starts; the space temperature shall be artificially changed to above the night setback temperature setpoint and it shall be verified that the HVAC system stops. The night setback temperature setpoint shall be set at the setpoint.

(9) With the HVAC system running, a filter differential pressure switch input signal shall be simulated at the device. It shall be verified that the filter alarm is initiated. The differential pressure switch shall be set at the setpoint as specified. This shall be performed for each filter.

(10) With the HVAC system running, a freezestat trip input signal shall be simulated at the device. HVAC system shutdown shall be verified. It shall be verified that a low temperature alarm is initiated. The freezestat shall be set at the setpoint as specified. The HVAC system shall be restarted by manual restart and it shall be verified that the alarm returns to normal.

(11) With the HVAC system running, a smoke detector trip input signal shall be simulated at each device. Control device actions and interlock functions as described in the Sequence of Operation shall be verified. Simulation shall be performed without false-alarming any Life Safety systems. It shall be verified that the HVAC system shuts down and the smoke detector alarm is initiated. The detectors shall be reset. The HVAC system shall be restarted by manual reset, and the alarm return-to-normal shall be verified.

(12) For each VAV terminal unit, velocity setpoints shall be set for minimum and maximum flow, and temperature setpoints for the heating/cooling dead band. The actions of the controller, the operation of the damper, and the operation of heating shall be verified. It shall be verified that space temperature is

maintained.

Repeat the above steps for AHU-2 & RF-2:

3.5 BALANCING, COMMISSIONING, AND TESTING

3.5.1 Coordination with HVAC System Balancing

Commissioning of the control system, except for tuning of controllers, shall be performed prior to or simultaneous with HVAC system balancing. The contractor shall tune the HVAC control system after all air system and hydronic system balancing has been completed, minimum damper positions set and a report has been issued.

3.5.2 Control System Calibration, Adjustments, and Commissioning

Control system commissioning shall be performed for each HVAC system, using test plans and procedures previously approved by the Government. The Contractor shall provide all personnel, equipment, instrumentation, and supplies necessary to perform commissioning and testing of the HVAC control system. All instrumentation and controls shall be calibrated and the specified accuracy shall be verified using test equipment with calibration traceable to NIST standards. Wiring shall be tested for continuity and for ground, open, and short circuits. Tubing systems shall be tested for leaks. Mechanical control devices shall be adjusted to operate as specified. HVAC control panels shall be pretested off-site as a functioning assembly ready for field connections, calibration, adjustment, and commissioning of the operational HVAC control system. Control parameters and logic (virtual) points including control loop setpoints, gain constants, and integral constraints, shall be adjusted before the system is placed on line. Communications requirements shall be as required by section 1006 MECHANICAL REQUIREMENTS. Written notification of any planned commissioning or testing of the HVAC Control systems shall be given to the Government at least 14 calendar days in advance.

3.5.3 Performance Verification Test

The Contractor shall demonstrate compliance of the HVAC control system with the contract documents. Using test plans and procedures previously approved by the Government, the Contractor shall demonstrate all physical and functional requirements of the project. The performance verification test shall show, step-by-step, the actions and results demonstrating that the control systems perform in accordance with the sequences of operation. The performance verification test shall not be started until after receipt by the Contractor of written permission by the Government, based on Government approval of the Commissioning Report and completion of balancing. The tests shall not be conducted during scheduled seasonal off periods of base heating and cooling systems.

3.5.4 Endurance Test

The endurance test shall be used to demonstrate the specified overall system reliability requirement of the completed system. The endurance test shall not be started until the Government notifies the Contractor in writing that the performance verification test is satisfactorily completed. The Government may terminate the testing at any time when the system fails to perform as specified. Upon termination of testing by the Government or by the Contractor, the Contractor shall commence an assessment period as

described for Phase II. Upon successful completion of the endurance test, the Contractor shall deliver test reports and other documentation as specified to the Government prior to acceptance of the system.

a. Phase I (Testing). The test shall be conducted 24 hours per day, 7 days per week, for 15 consecutive calendar days, including holidays, and the system shall operate as specified. The Contractor shall make no repairs during this phase of testing unless authorized by the Government in writing.

b. Phase II (Assessment). After the conclusion of Phase I, the Contractor shall identify failures, determine causes of failures, repair failures, and deliver a written report to the Government. The report shall explain in detail the nature of each failure, corrective action taken, results of tests performed, and shall recommend the point at which testing should be resumed. After delivering the written report, the Contractor shall convene a test review meeting at the jobsite to present the results and recommendations to the Government. As a part of this test review meeting, the Contractor shall demonstrate that all failures have been corrected by performing appropriate portions of the performance verification test. Based on the Contractor's report and test review meeting, the Government may require that the Phase I test be totally or partially rerun. After the conclusion of any retesting which the Government may require, the Phase II assessment shall be repeated as if Phase I had just been completed.

3.5.5 Posted and Panel Instructions

Posted and Panel Instructions, showing the final installed conditions, shall be provided for each system. The posted instructions shall consist of laminated half-size drawings and shall include the control system schematic, equipment schedule, sequence of operation, wiring diagram, communication network diagram, and valve and damper schedules. The posted instructions shall be permanently affixed, by mechanical means, to a wall near the control panel. Panel instructions shall consist of laminated letter-size sheets and shall include a Routine Maintenance Checklist and as-built configuration check sheets. Panel instructions and one copy of the Operation and Maintenance Manuals, previously described herein, shall be placed inside each control panel or permanently affixed, by mechanical means, to a wall near the panel.

3.6 TRAINING

3.6.1 Training Course Requirements

A training course shall be conducted for 10 operating staff members designated by the Contracting Officer in the maintenance and operation of the system, including specified hardware and software. The training period, for a total of 8 hours of normal working time, shall be conducted within 30 days after successful completion of the performance verification test. The training course shall be conducted at the project site. Audiovisual equipment and 10 sets of all other training materials and supplies shall be provided. A training day is defined as 8 hours of classroom instruction, including two 15 minute breaks and excluding lunchtime, Monday through Friday, during the daytime shift in effect at the training facility.

3.6.2 Training Course Content

For guidance in planning the required instruction, the Contractor shall assume that attendees will have a high school education or equivalent, and are familiar with HVAC systems. The training course shall cover all of the material contained in the Operating and Maintenance Instructions, the layout and location of each HVAC control panel, the layout of one of each type of unitary equipment and the locations of each, the location of each control device external to the panels, the location of the compressed air station, preventive maintenance, troubleshooting, diagnostics, calibration, adjustment, commissioning, tuning, and repair procedures. Typical systems and similar systems may be treated as a group, with instruction on the physical layout of one such system. The results of the performance verification test and the calibration, adjustment and commissioning report shall be presented as benchmarks of HVAC control system performance by which to measure operation and maintenance effectiveness.

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FINAL FOUNDATION ANALYSIS
ADD/ALTER MISSION SUPPORT FACILITY
PETERSON AIR FORCE BASE, COLORADO

1. Scope

The results of the foundation investigation for the Add/Alter (ADAL) Mission Support Facility at Peterson Air Force Base, Colorado are presented in this report. The scope of the study was to (1) evaluate the engineering properties of the subsoils; (2) provide allowable soil bearing pressures, (3) recommend types and depths of foundation elements and other measures pertinent to foundation design and construction.

2. Proposed Construction

This project involves a two-story steel framed addition to the northeast side of the existing Mission Support Facility (Bldg 350). The addition will be approximately 250 feet in length and 100 feet in width. Also proposed is demolition of two existing buildings (365 and 391) located northeast of the MSF, and construction of a paved parking lot.

3. Subsurface Investigations

3.1. General

A USACE Omaha District drill crew conducted the site investigation for the ADAL Mission Support Facility on 8 March 2004. The investigation consisted of five borings numbered sequentially from PF04-21 through PF04-25. A USACE geologist staked the boring locations and finalized the utility clearances and dig permit with the Peterson AFB point of contact prior to site intrusive activities. The borings were advanced using a Gus Pech 1300C drill rig equipped with a 4.25-inch inside diameter (ID) hollow-stem auger and bullet bit. The diameter of the holes was 8 inches. Subsurface samples were collected from all borings.

TABLE 1: Summary of Borings

Boring Number	Total Depth (ft)	Ground Water Depth (ft)
PF04-21	20	Not Encountered
PF04-22	20	13.0 during drilling
PF04-23	30	16.0 during drilling
PF04-24	10	Not Encountered
PF04-25	10	Not Encountered

3.2. Standard Penetration Tests

Standard penetration tests were taken in all borings at depth intervals of 2.5 feet for the first 10 feet and every 5 feet for the remaining depth of the boring. The standard penetration samples were obtained in accordance with

ASTM D 1586-99 "Penetration Test and Split-Barrel Sampling of Soils", using a 140-pound automatic trip hammer and 2-inch inside-diameter stainless steel split-spoon sampler.

3.3. Disturbed Sampling

Representative disturbed samples of the subsoils were taken with a 2-inch outside diameter (O.D.) stainless steel split spoon sampler in accordance with ASTM D 1586-99. Samples were collected at the same depths as the standard penetration tests. Samples were placed in a pint jar and the lid sealed airtight with at least three wraps of electrical tape. Each jar was labeled, denoting the hole and sample number, depth, date collected, and the project name. The jars were placed in wooden boxes that were subsequently labeled with the appropriate project information.

3.4. Undisturbed Sampling

Undisturbed samples were not obtained due to the granular nature of site soils.

4. Laboratory Testing

Geotechnical samples with transmittal sheets were shipped to the Terracon Inc. laboratory in Omaha, Nebraska. Tests were performed to determine visual classification, Atterberg Limits, grain size distribution, natural moisture content, sulfate ion content, soil pH, and soil resistivity. All tests were conducted in accordance with EM 1110-2-1906 "Laboratory Soils Testing".

Based upon the results of the testing program, the field logs were revised and supplemented as shown on the boring logs. These final logs represent an interpretation and compilation of the content of the field logs and the results of the laboratory tests of the field samples. The stratification lines shown on the boring logs represent the approximate boundaries between soil types and may be gradual. Boring logs are attached to this report, in the drawing package, and are available from the Geotechnical Branch, Soils Section A, of the Omaha District.

5. Site Conditions

5.1. General Geology

Peterson AFB is located on the eastern edge of Colorado Springs, Colorado, near the western edge of the Colorado Piedmont Section of the Great Plains Physiographic Province. This area consists of a late mature to old elevated plain. During late Cretaceous to early Tertiary time, material eroded from the recently uplifted granitic mountains to the west was deposited in alluvial fan and braided stream environments draining the mountains. These original deposits were subjected to reworking and planation by laterally migrating streams and wind. The cycle of uplift and planation was repeated several times, resulting in the current topography of pediments mantled with alluvial gravel and sand.

The Colorado Springs area is located in the Arkansas River drainage basin. The basin is comprised of dendritic drainage with numerous intermittent streams. Two major streams occur in the vicinity, Monument Creek and Fountain Creek, both of which flow generally southward.

The area east of the two creeks, including Peterson AFB, has a gentle slope of approximately seventy feet per mile toward the southwest. A majority of streams follow this regional slope into Fountain Creek. To the east of Fountain Creek is an area of high permeability eolian deposits up to twenty feet thick. These deposits often manifest themselves as loose sand deposits with a high collapse potential.

Bedrock stratigraphy in the area is complex due to the numerous depositional and erosional cycles in conjunction with the rapid structural changes in the late Cretaceous and early Tertiary. East of the mountains bedrock is predominantly Cretaceous and comprises in ascending order, the Pierre, Fox Hills, Laramie and Dawson formations. These formations outcrop in numerous places, but are generally mantled with alluvium, colluvium or eolian material. Bedrock in the Peterson AFB area is the Fox Hills Sandstone and Laramie Formation. The Fox Hills Sandstone ranges from light olive-gray, thin-bedded sandy shale to olive-brown, massive fine-grained sandstone. The Laramie Formation is comprised of olive-gray claystone and grayish-brown fine-grained sandstone.

5.2. Site-Specific Geology

Soils encountered at the site consisted primarily of fine to medium-grained well-graded sand with silt (SW-SM). Near the surface silty sand (SW) was present. Based on Standard Penetration Test blow counts, the density was primarily medium dense, with occasional dense zones. Bedrock was not encountered within the depth of the borings.

5.3. Ground Water

Ground water was encountered during drilling at a depth of approximately 13 feet below the surface in boring PF04-22, and 16 feet below the surface in boring PF04-23. Instances of shallower perched water have been reported in excavations at other locations on the installation; these were easily controlled with portable pumps and the high permeability soils drain readily. The ground water level at the time of drilling was approximately 13 feet below the ground surface; this level may fluctuate in response to both short-term and long-term precipitation trends.

5.4. Seismic Evaluation

The state of Colorado has exhibited a low to moderate frequency of earthquakes in historic time. Peterson AFB has a spectral response acceleration for short periods (0.2 second) of 0.18g, and a 1.0 second spectral response of 0.06g. These values were derived using guidance from the U.S. Army Corps of Engineers Technical Instructions "Seismic Design for Buildings" TI 809-04, dated 31 December 1998, and the Federal Emergency Management Agency (FEMA) publication "NEHRP Recommended Provisions for Seismic Regulations for New Buildings and Other Structures, 1997 Edition". Both accelerations were interpolated from 1:5,000,000 scale maps prepared by the U.S. Geologic Survey (USGS), Building Seismic Safety Council (BSSC), and FEMA for 0.2 Sec. Spectral Response Acceleration (5% of Critical Damping), Site Class B, and 1.0 Sec. Spectral Response Acceleration (5% Critical Damping), Site Class B, respectively. The spectral response accelerations taken from these maps must be adjusted for site class effects using coefficients provided in the aforementioned guidance. For design purposes, the reference site condition is taken as National Earthquake Hazards Reduction Program (NEHRP) site class D.

The adjusted maximum considered earthquake spectral response acceleration parameters are:

The short-Period Spectral Acceleration ($S_{MS} = F_a S_S$) for site class D is (1.6 x 0.18) = 0.29.

The 1-Second Period Spectral Acceleration ($S_{M1} - F_v S_1$) for site class D is (2.4 x 0.06) = 0.14.

6. Subsurface Recommendations

6.1. General

Soils at the site are suitable for conventional spread and continuous footings. Prior to adding fill to the site, topsoil should be stripped and the subgrade soils scarified and recompacted. A slope of at least 1 percent and preferably 5 percent should be maintained within 10 feet of structures to ensure adequate drainage.

6.2. Foundation Recommendations

6.2.1. Shallow Spread and Continuous Footings

The recommended foundation type for this design is shallow spread and continuous footings bearing on native soil. Footings should be designed for an allowable excess bearing capacity of 2500 psf. This value represents the maximum allowable bearing pressure at the base of the footings in excess of that due to existing surrounding overburden. Because the footings adjacent to the existing structure will superimpose new loads on already loaded soil, the allowable bearing capacity within twenty feet of the existing wall should be reduced to 2000 psf.

All exterior footings for heated structures should be founded a minimum of 3.0 feet below final exterior grade to provide adequate frost protection.

All footings for unheated structures should be founded a minimum of 3.0 feet below final exterior grade to provide adequate frost protection.

6.2. Slabs on Grade

Slabs on grade may be used for this design. The fines content of site soils is high enough that a vapor barrier and six-inch capillary water barrier will be required beneath all floor slabs on grade. The barrier should consist of a minimum 20-mil membrane. A modulus of subgrade reaction "K" of 175 pci is recommended for this case (without frost penetration).

6.3. Pavement Design

Soil underlying pavement is predominantly silty sand (SM). This soil has a frost design classification of F3.

If rigid pavement design does not consider frost penetration, a modulus of subgrade reaction "K" of 175 pci is recommended for design purposes. Flexible pavement designs should use a California Bearing Ratio (CBR) value of 15 for subgrades compacted to 95 percent of maximum density per ASTM D 1557 (2002) when frost is not allowed to penetrate the subgrade. If frost penetration is

considered in the design of rigid or flexible pavements, the design shall be in accordance with UFC 3-260-02 Pavement Design for Airfields (30 June 2001).

6.4. Settlement

Based on Standard Penetration Test results and experience with foundations in sand, total settlement should not exceed 1.0 inch under the recommended loading conditions. Differential settlement should not exceed 0.50 inch under such conditions.

6.5. Cementing Properties

Sulfate ion content tests were performed on representative samples from site borings. Test results indicated a sulfate ion content of approximately 20 parts per million. Based on criteria outlined in ACI 201.2, a “mild” exposure condition exists and sulfate-resistant cement will not be required for concrete in contact with soil or groundwater.

Due to the potential for alkali-aggregate reactivity within the boundaries of the Omaha District, cement meeting the optional chemical requirements for low alkali cement on Table 2, ASTM C 150 will also be specified for all concrete. The Resource Conservation Recovery Act (RCRA) mandates, where possible, all concrete specifications will also include the option to use pozzolan as a partial replacement for Portland cement.

6.6. Corrosion Potential

Soil resistivity tests were performed on representative samples from the site. Test results indicated a resistivity of between 1520 and 1920 ohm-cm. While somewhat atypical of conditions normally encountered at the installation, the silt content of the soil is the likely cause for the low readings. In accordance with corrosion classifications in the Department of the Army TM 5-811-7 Electrical Design, Cathodic Protection (22 April 1985), a "severe" corrosion potential is expected. Soil pH measured 7.9 to 8.3.

6.7. Lateral Earth Pressure

The site soils have a moist density of approximately 110 pounds per cubic foot. The following earth pressure coefficients may be used for design of subsurface walls.

Active Earth Pressure, $K_a = 0.31$
Passive Earth Pressure, $K_p = 3.25$
At-Rest Earth Pressure, $K_0 = 0.47$

7. Construction Considerations

Care should be taken to avoid disturbing existing building footings and exposed subgrades on which new foundation members or floor slabs will be placed. Excavations adjacent to existing footings should not extend below the base of the footing. If such excavation is necessary along the wall on which the addition will be placed, it should not exceed one-third of the wall length at one time. If the native subgrade surface on which footings or floor slabs are to be placed is disturbed, the material should be scarified to a depth of at least 6 inches, moisture conditioned and compacted to not less than 92 percent of maximum Modified Proctor density.

Fill placed under structures should be moisture conditioned and compacted to not less than 92 percent of maximum Modified Proctor density. These criteria should apply for a lateral distance of five feet beyond the building footprint.

Excavations for building demolition should be backfilled with native soils compacted in 12-inch lifts to at least 90 percent of maximum Modified Proctor density to leave the sites suitable for subsequent construction.

ATTACHMENT NO. 2

BASE FACILITY EXCELLENCE PLAN STANDARDS

Where conflicts between the attached portions of the Base Facility Excellence Plan and the narrative requirements of the RFP exist, the narrative requirement of the RFP shall govern.

Site Character – Central
Parking Lot – Landscaping
Screen Accent – Landscaping
Plant List
Xeriscaping
Irrigation
Parking Lot Lighting
Bollards
Facility Communication Standards
Window Coverings
Carpet
Art Work and Wall Displays
Plants (Interior)
Furniture
Paints and Coatings
Textile: Fire Code Requirements
Textile: Material Types
Textile: Performance Requirements
Exterior Signage
Fire Protection Equipment

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building related landscaping central character area

Xeriscape

Design Character

This character area is increasingly becoming an important administrative part of the base. Wing Headquarters has been established adjacent and north of the AFRES Headquarters. The Mission Support Facility near Peterson Boulevard and Hamilton Avenue adds to this area in the administration function. The landscape character for this area should be one that reinforces the emerging concentration of administrative functions. This will serve as a primary decision-making center for the entire base, and must provide an impressive environment for visitors, and an attractive one for assigned personnel.

Landscaping design will serve as a key issue to help produce an overall visual unity for this diverse character area. The design direction must incorporate more formal planting arrangements near building entrances, and more informal arrangements for all other plantings.

Site Area Guidelines

Buffers

Maintain a buffer between the character area and Peterson Boulevard and Stewart Avenue. Design selected views into the area and out from the area through this buffer. These buffers will be enhanced by the arterial streetscapes along these two important streets.

Views

Maintain views to the south and southwest to the mountains through open spaces. Maintain and enhance views between the area and the golf course to the east through selected open spaces.

Relationship to Surrounding Area

The Central Character Area is adjacent to six character areas on the west, north and east. On the south it is bounded by the existing runway. Due to its central location, it will act as a conveyor of people to adjacent use areas. The landscape character should provide a sense of arrival, while visually encouraging the movement of people through the area. This can be achieved through a strong perimeter planting, with designated gateway areas landscaped with ornamental trees and shrubs. Special consideration should be made to the view corridor experienced by those distinguished visitors entering the base from the airport, through Base Ops.

Building Area Guidelines

Entry

A high level of landscape improvements are appropriate for existing and proposed buildings. Use a plant palette at building entries to reinforce a unified design theme throughout the area. This will begin to produce a pattern, and create a sense of unity within the character area.

Architectural Considerations

building entry planting

The diverse architectural character of the buildings, and the sparse development pattern within the character area requires the landscaping adjacent to the buildings to help visually unify the entire character area. Building landscaping should be designed to integrate the building into the surroundings. Informal plant massing at building corners will help visually tie the buildings into their sites.

Provide formal detailed plantings around building entries to create a transition between the interior and exterior of the buildings. These plant materials should include ornamental trees, shrubs, and ground cover to provide color, texture, and interest at the entry.

Plant Palette

At every building in this character area, provide landscaping in the types and quantities as stated below.

- Provide a minimum of four (4) trees and eight (8) shrubs for every five thousand (5,000) square feet (465 sm), and fractions thereof, of gross building area contained in the building. A minimum of one-half (1/2) of the required trees and shrubs shall be evergreen. These trees and shrubs shall be located within seventy-five feet (75') (22.86 m) of the exterior walls of the building in question.
- Required trees and shrubs shall be placed in groups which are arranged in rhythmic, formal geometric patterns when near building entrances. Trees and shrubs shall be physically separated from turf grass areas. Groups of trees and shrubs along side and rear building elevations shall be informal in nature.
- Kentucky Blue grass shall be used as the principal ground plane landscape plant, both close to the building and out to all adjacent streetscapes.
- In planters where groups of trees and shrubs are separate from turf grass areas, a mulch shall be used to a minimum depth of four inches (4”) (101.6 mm). Such mulches, when used anywhere in this character area, shall consist of shredded wood.
- Earth berms shall be required along the north and west character area "borders" along Peterson Boulevard and Stewart Avenue. This buffer system shall typically be placed outside the streetscapes of these two important streets. See **Streetscapes** for related streetscape planting requirements. Along these border areas, an earth berm system shall be provided which helps visually and functionally separate this character area from the busy streets. Such berms shall have a minimum width of twenty feet (20') (6 m), and shall be a minimum of three feet (3') (914.4 mm) high for a minimum of fifty percent (50%) of the total berm area. These berms shall be provided along a minimum of seventy-five percent (75%) of the border length parallel to Peterson Boulevard and Stewart Avenue.
- As a part of the buffers described above, provide a minimum of three (3) evergreen trees and six (6) evergreen shrubs for every fifty feet (50’) (15.24 m) of total berm length.
- At all earth berms in this character area, shredded wood shall be used as the principal ground plane covering.

Parking lot landscaping

The plant types which may be used in this character area are listed by category and by common name. All plants have been selected from the listing in **Landscape Plants List**.

Central - Plant Palette		
Shade Trees	**Evergreen Trees**	**Ornamental Trees**
Greenspire Linden	Pinon Pine	Bechtel Crab
Littleleaf Linden	Ponderosa Pine	Canada Red Cherry
Redmond Linden	Colorado Bluce	Washington
Royal Red Maple	Spruce	Hawthorn
Schwedler Maple	Austrian Pine	Dolgo Crab

Marshall Seedless Green Ash Skyline Honey Locust	White Fire Bristlecone Pine	Hopa Crab Selkirk Crab Spring Snow Crab Amur Maple Newport Flowering Plum

Deciduous Shrubs	Evergreen Shrubs
Kelsey's Dogwood	Buffalo Juniper
Anthony Waterer Spirea	Mugho Pine
Compact Burning Bush	Pyracantha
Cistena Plum	Blue Chip Juniper
Red Twig Dogwood Snowball	Broadmoor Juniper
Red Quince	Hughes Juniper
Common Quince	Old Gold Juniper
Blue Mist Spirea	Prince of Wales Juniper
Japanese Barberry	Sea Green Juniper
Dwarf Korean Lilac	Table Top Blue Juniper
Persian Lilac	Tam Juniper
Miss Kim Lilac	Wilton Carpet Juniper
Golden Elder	Andorra Creeping Juniper
Golden Privet	Golden Pfitzer Juniper
Emerald Mound Honeysuckle	Hetzi Juniper
Cranberry Cotoneaster	Emerson Juniper
	Cologreen Juniper
	Blue Haven Juniper

print

landscape design

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parking lot landscaping

Introduction

Parking lots are a necessary component of virtually all base facilities. Parking areas can detract from the overall visual character of the base if they are not properly landscaped. Parking lot landscaping is required by these design guidelines because it enhances the visual environment, promotes safety, moderates local climatic effects, and can minimize noise and glare.

Landscaping is one of the most straightforward methods of enhancing the appearance of parking lot areas. It should be used to break up wide expanses of parking areas and improve the appearance of adjacent new building construction. It should also be used to separate pedestrian and vehicular traffic, as well as delineating different functional areas of the lot. Landscaping should also be used to enhance the safety of parking lots by guiding the circulation of cars and people and by ensuring that the driver's vision is unobstructed.

Please review the **Parking Lot Design Guideline** section for further information on Parking Lots.

Vision Clearance

It is critical that landscaping near parking lots or other maneuvering areas not obstruct the driver's view of traffic and pedestrian ways. To provide for vision clearance triangles, shrub height should be limited to two feet (2') (609.6 mm). These limitations are recommended at corners where vehicular or pedestrian traffic intersects with roads or aisleways, especially at driveways and street intersections. Site triangle setbacks should be a minimum of fifteen feet (15') (4.57 m) in parking areas, and thirty-five feet (35') (10.67 m) at intersections, and one hundred feet (100') (30.48 m) at major intersections. Trees can be allowed in these areas if branches are trimmed to six to eight feet (1.89 m to 2.44 m) from the ground.

historic district perimeter plantinas

These design guidelines recognize three different types of landscape applications for parking lots and set separate criteria for each. These areas are:

- Perimeters adjacent to streets, and perimeters of lots adjacent to buildings, other site areas, and adjacent character areas.
- The interiors of parking lots.

Street Frontage Requirements

Open parking spaces (except in family housing areas) shall be screened from view from adjacent streets to a minimum height of 3' (three feet) (914.4 mm) by the use of berms and/or plantings. Structures such as decorative walls or fences may be allowed if it is clearly demonstrated that:

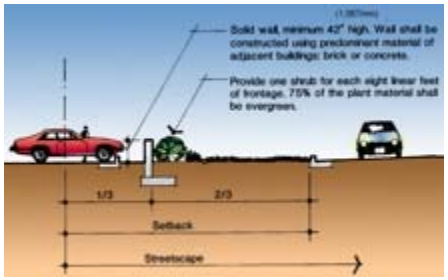
- The structures avoid a blank and monotonous appearance by such means as architectural articulation and the planting of additional landscape materials, or
- The total use of berms and/or plantings is not physically feasible, or
- The structures attractively complement the use of berms and/or plantings.
- Parking lot screening requirements vary depending on the classification of the adjacent street and any encroachment within the setback portion of the streetscape.

Arterial Streets

The entire affected street frontage adjacent to arterial streets must have the required screening. At least 50% of that screening must be made up of plant materials and no more than 50% may be accomplished by the use of berming.

Collector Streets

A minimum of two-thirds (2/3) of the affected street frontage must have the required screening. At least 75% of the screening must be accomplished with plant materials and no more than 25% may be accomplished by the use of berming.



solid screen wall and landscaping

Local Streets

A minimum of one-half (50%) of the affected street frontage must have the required screening. Screening should be provided by using plant materials rather than berms.

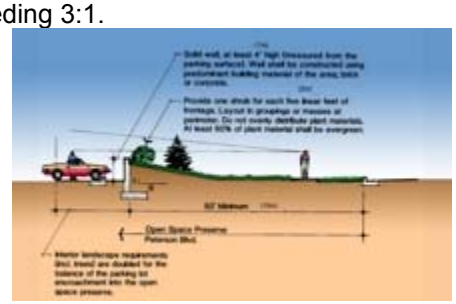
Setback Encroachments

Parking lots should not be located within the setback portions of the streetscapes identified in Streetscapes. In the event that there are existing parking areas that did not comply with this requirement, or that it is infeasible for new designs to maintain this setback, additional requirements itemized below will be in effect.

Major Corridor Open Space Preserve

It is very important that the open, park-like appearance of the Major Boulevard corridor area be maintained. If there is an encroachment within the setback area, screening along the street frontage will be made up of a solid screen/ retaining wall, berming, and shrubbery.

- The solid screen wall shall be at least four feet (4') (1.22 m) high (measured from the parking surface) and shall be constructed using the predominant building materials of the character area.
- Berming should cover at least three feet (3') (914.4 mm) of the solid screen wall and is intended to be gradual with slopes not exceeding 3:1.
- Shrubbery located along the edge of the solid screen wall should be provided for additional softening and screening. Provide 1 shrub per 5 lineal feet (1.52 m) of frontage. Shrubbery should be laid out in groupings or masses at the perimeter of the lot area. Shrubbery should not necessarily be evenly spaced or distributed along this edge. At least 60% of these plant materials must be evergreen.



solid screen wall and landscaping

In addition to these screening requirements, the balance of the parking area that encroaches into the open space preserve must meet more stringent requirements of increased interior area and parking lot tree quantities.

Other Encroachments

Parking lots that encroach into the setback distance along other arterials and collectors must provide additional screening along the street frontage. This

screening shall consist of a solid screen wall and shrubbery.

frontage landscaping

Street Frontage Plant Palette

The following **Street Frontage Plant Palette** may be used in meeting the street frontage screening requirements. All plants listed here are further described in **Landscape Plants List**.

Street Frontage Plant Palette		
Shade Trees	**Evergreen Trees**	**Ornamental Trees**
Autumn Purple Ash	Pinon Pine	Bechtel Crab
Shademaster Honey Locust	Ponderosa Pine	Canada Red Cherry
Sunburst Honey Locust	Colorado Blue Spruce	Washington Hawthorn
American Linden	Austrian Pine	Bradford Pear
Littleleaf Linden	White Fir	Dolgo Crab
Norway Maple		Hopa Crab
Norway Emerald		Radiant Crab
Queen Maple		Selkirk Crab
Norway Jade Glen Maple		Spring Snow Crab
Red Sunset Maple		Amur Maple
Royal Red Maple		
Schwedler Maple		
Northern Red Oak		

Deciduous Shrubs	Evergreen Shrubs
Kelsey's Dogwood	Buffalo Juniper
Anthony Waterer Spirea	Mugho Pine
Compact Burning Bush	Pyracantha
Cistena Plum	Blue Chip Juniper
Red Quince	Broadmoor Juniper
Common Quince	Hughes Juniper
Embers Quince	Old Gold Juniper
Snowberry	Prince of Wales Juniper
Blue Mist Spirea	Table Top Juniper
Wayfaring Tree	Tam Juniper
	Wilton Carpet Juniper
	Andorra Creeping Juniper
	Golden Pfitzer Juniper
	Hetzi Juniper
	Emerson Juniper

Perimeter Requirements

Open parking spaces (except in family housing areas) shall be screened from view from adjacent buildings and site areas to an eventual minimum height of 3' (914.4 mm) (three feet) by the use of berms and/or plantings.

A minimum of 50% of the affected parking lot perimeter must have the required screen. At least 35% of the screening plant materials must be evergreen.

The following **Perimeter Plant Palette** may be used in meeting the perimeter screening requirements. All plants listed here are further described in **Landscape Plants List**.

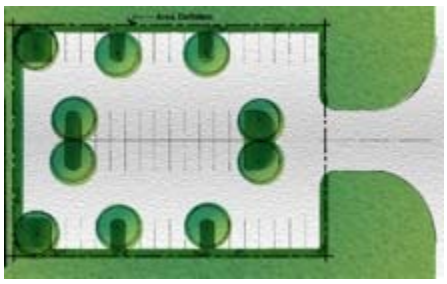
Perimeter Plant Palette		
Shade Trees	Evergreen Trees	Ornamental Trees
Sunburst Honey Locust Greenspire Linden Littleleaf Linden Red Sunset Maple Royal Red Maple	Pinon Pine Ponderosa Pine Colorado Blue Spruce Austrian Pine White Fir	Bechtel Crab Canada Red Cherry Washington Hawthorn Dolgo Crab Hopa Crab Selkirk Crab Spring Snow Crab English Hawthorn Amur Maple

Deciduous Shrubs	Evergreen Shrubs
Kelsey's Dogwood Anthony Waterer Spirea Compact Burning Bush Cistena Plum Red Twig Dogwood Snowball Red Quince Common Quince Embers Quince Lilac, sp. Golden Elder Potentilla, sp. Snowberry Wayfaring Tree	Buffalo Juniper Mugho Pine Pyracantha Blue Chip Juniper Broadmoor Juniper Hughes Juniper Old Gold Juniper Pfitzer Juniper Pfitzer Compact Juniper Prince of Wales Juniper San Jose Juniper Sea Green Juniper Table Top Juniper Tam Juniper Wilton Carpet Juniper Andorra Creeping Juniper Golden Pfitzer Juniper Hetzi Juniper Green Pfitzer Juniper Blue Pfitzer Juniper Emerson Juniper Cologreen Juniper

Adjacent Residential Areas

When a parking lot perimeter abuts a family housing or dormitory area the entire affected perimeter must have the required screening. In addition to the required screening, one canopy tree per 40 lineal feet (12 m) of perimeter shall be provided to help screen parked cars from first and second story windows as well as from exterior yard areas.

Landscaping in Interior Areas



interior landscaping

Previous portions of this guideline have concentrated on specifying the minimum amount of landscaping needed to screen parking lots from adjacent streets and residential areas. This section of the parking lot landscaping guideline focuses on enhancing the general environment of the parking lot itself. Interior landscaping has several purposes. It should be used to break up large expanses of pavement, thereby improving both the appearance and the microclimate of the lot area. It can also have important safety ramifications. Landscaping should be used to delineate pedestrian walkways in order to separate vehicular and pedestrian traffic, and it can guide traffic to reduce the number of minor accidents that are so common to many parking lots. This particular design guideline places a premium on the use of large shade trees to satisfy interior parking lot landscaping requirements.

The following general principles should be used in designing interior landscaped areas:

- For planting islands that are parallel to spaces, islands should be a minimum of ten feet (10') (3.05 m) wide to allow car doors to open and to provide adequate root growth zone.
- For planting islands that are perpendicular to spaces, islands should be a minimum of eight feet wide to allow for overhang of parked cars.
- Use deciduous shade trees with ground cover or low shrubs as the primary landscape material within parking lots. Avoid tall shrubs or low branching trees that will restrict visibility.
- In large parking lots, separate pedestrian walkways should be provided to allow safe movement within the lots. These walkways should generally be oriented perpendicular to and between parking bays. Adjacent to the walks, trees should be planted to aid in the identification of walkway locations and to provide a more comfortable pedestrian environment (shade and rain protection).
- Screening of mechanical equipment, trash, and loading areas should be provided. This should be accomplished by using solid walls, fences, and landscaping.

Minimum Interior Area

Landscaped areas shall be provided for parking and vehicular use areas to provide visual and climatic relief from broad expanses of pavement and to channelize and define logical areas for pedestrian and vehicular circulation.

Definition of Lot Area

The determination of gross lot area size shall include all parking spaces in addition to aisleways and maneuvering areas. The following criteria will be based on gross lot size and the number of parking spaces so that these guidelines will cover lots with large loading areas or special turn around areas that might otherwise be exempt.

Small Lots

Parking lots that are less than 5,250 square feet (488 sm) (15 cars at 350 square feet (33 sm) per car) will not be required to provide any landscaped areas within the lot itself.

Medium Sized Lots

Lot areas that are greater than 5,250 square feet (488 sm) but less than 20,000 square feet (1,858 sm) (57 cars at 350 square feet (33 sm) per car) must provide at least 5% of the gross lot area in landscaped areas. To meet these "interior" requirements, landscaped areas must be surrounded on at least two sides by the parking lot area itself.

Large Parking Lots

For parking lots that exceed 20,000 square feet (1,858 sm), at least 8% of the gross area shall be provided as internal landscaped areas.

The interior landscaped areas required by this guideline should be planted with shade trees in accordance with the following requirement for parking lot trees and with low shrubs and/or ground cover. The location and disbursement of required interior landscaped areas shall be in accordance with the following requirements for parking lot trees.

Parking Lot Trees

One tree of a type suitable for parking lots shall be provided for every ten (10) open vehicular parking stalls in parking lots with fifteen (15) or more stalls. The required trees may be clustered but shall be located to divide and break up expanses of paving and long rows of parking stalls and to create a canopy effect in the parking lot. Interior landscaped areas

shall be disbursed to define aisles and limit unbroken rows of parking to a maximum of 100 feet (30.48 m). In order to be considered within the parking lot, the trees must be located in planters that are bounded on at least two (2) sides by parking lot paving. Planters shall be of sufficient size and design to accommodate the growth of the trees and to prevent damage to the trees by maneuvering vehicles.

The following **Parking Lot Plant Palette** may be used in meeting the interior landscaping and parking lot tree requirements. All plants listed here are further described in **Landscape Plants List**.

Parking Lot Plant Palette		
Shade Trees Trees	Evergreen Trees	Ornamental Trees
Northern Red Oak Autumn Purple Ash Marshall Seedless Green Ash Imperial Honey Locust	NONE	Newport Flowering Plum Amur Maple

Deciduous Shrubs	Evergreen Shrubs
Rock Cotoneaster Kelsey's Dogwood Little Princess Spirea Dwarf Korean Lilac Dwarf European Cranberry Japanese Barberry Potentilla, sp. Emerald Mound Honeysuckle	Bar Harbor Juniper Buffalo Juniper Wilton Carpet Juniper Tam Juniper Hughes Juniper Arcadia Juniper Broadmoor Juniper

print

landscape design

screen/accent landscaping

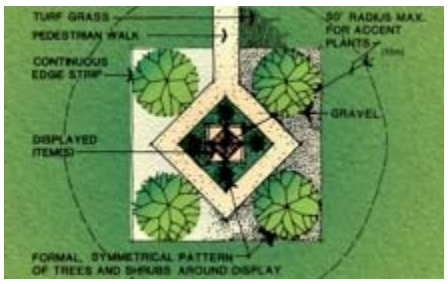
Introduction

The landscape requirements contained in this guideline address several unrelated but important areas on base. These include accent landscaping for static displays, selected signage, and playgrounds. Also included are screen planting requirements for trash enclosures and building service areas. Building service areas and trash enclosures have been treated separately from building related landscaping to emphasize the importance of this issue. Also, in numerous cases, the trash enclosures may be physically remote from the building(s) they serve. In those cases, remotely located enclosures function more as site furnishings, rather than as an attached portion of any building.

Static Displays Accent Landscaping

Typical Location

These types of areas are commonly one-of-a-kind displays which may include flags, statues, aircraft, or military equipment. Some examples are the numerous aircraft displays common to Peterson AFB. Typically such displays should be located near busy intersections, similar to the display near the intersection of Peterson Boulevard and Stewart Avenue. This increases the visibility of these types of displays. Similarly, flags, statues and related displays should be grouped near entrances of important buildings, again producing a high visibility with base personnel. The intent with accent plantings is to complement and support the displayed items in a visual manner. These accent plantings shall consist of the following:



accent landscaping at static displays

- A minimum of four (4) trees and eight (8) shrubs shall be provided for each displayed item. All plants shall be located within a maximum distance of fifty feet (50') (15.24 m) radius of the displayed items.
- Required trees and shrubs shall be placed in groups which are arranged in rhythmic geometric patterns. Trees and shrubs shall be physically separated from turf grass areas.
- Turf grass shall be used as the principal ground plane landscape plant, and shall be located away from the displayed items.
- In display areas, groups of trees and shrubs are separate from turf grass areas, and a mulch shall be used to a minimum depth of four inches (4") (101.6 mm). Such mulches shall consist of shredded wood.
- Limited amounts of perennial flowers, though not required by this guideline, are recommended to provide visual emphasis for these high profile "memorial" type areas.

Plant Palette

The plant palette emphasis for static display areas is to use deciduous trees and evergreen shrubs to provide year around color and texture with seasonal accents. At each separate group of displayed items, only one (1) tree and one (1) shrub species shall be used to maximize visual impact. The plants which may be used are listed by category and by common name. All plants have been selected from the list in **Landscape Plants List**.

Static Display Accent Plant Palette	
Deciduous Trees	Evergreen Shrubs
Imperial Honey Locust	Buffalo Juniper

Newport Flowering Plum Amur Maple Canada Red Cherry Bradford Pear	Mugho Pine Pyracantha Blue Chip Juniper Braodmoor Juniper Hughes Juniper Old Gold Juniper Pfitzer Juniper Pfitzer Compact Juniper Prince of Wales Juniper Sea Green Juniper Table Top Juniper Tam Juniper Wilton Carpet Juniper Andorra Creeping Juniper Golden Pfitzer Juniper Hetzi Juniper Green Pfitzer Juniper Blue Pfitzer Juniper Emerson Juniper

Signage Accent Landscaping

Typical Location

The location of major building signage to receive accent plantings will vary greatly. See Facility Signage. The intent of this guideline is to landscape around all detached and free-standing signs for major individual buildings, and at signs for complexes such as the Community Center. The accent plantings shall include the following:

- At each sign, a minimum of one (1) shrub shall be provided for every ten (10) square feet (1 sm) (or fraction thereof) of sign area, where the sign area is calculated for only one display face surface area at double-faced signs. All shrubs shall be carefully positioned and shall be plant types which will not obscure the sign message when the plants reach mature height.
- Required shrubs shall be placed in groups which are arranged in rhythmic geometric patterns. Shrubs shall be physically separated from adjacent turf or native grass areas.
- Turf grass is used as the principal ground plane landscape plant, and shall be located away from the sign.
- In planters adjacent each sign, where shrubs are separate from turf grass areas, a mulch shall be used to a minimum depth of four inches (4”) (102 mm). Such mulches shall consist of shredded wood.

Plant Palette

The plant palette emphasis for major building signage is to use evergreen and deciduous shrubs to provide visual focus and four season color and texture. At each separate sign, only one (1) shrub species shall be used to maximize visual impact. The plants which may be used are listed by category and by common name. All plants have been selected from the list in **Landscape Plants List**.

Signage Accent Plant Palette	
Deciduous Shrubs	Evergreen Shrubs
Kelsey's Dogwood Anthony Waterer Spirea Compact Burning Bush Cistena Plum Red Twig Dogwood Snowball Red Quince	Buffalo Juniper Mugho Pine Pyracantha Blue Chip Juniper Braodmoor Juniper Hughes Juniper Old Gold Juniper

Common Quince Embers Quince Manhattan Euonymus Japanese Barberry Golden Privet Lilac, sp. Snowberry Blue Mist Spirea Emerald Mound Honeysuckle	Pfitzer Juniper Pfitzer Compact Juniper Prince of Wales Juniper Sea Green Juniper Table Top Juniper Tam Juniper Wilton Carpet Juniper Andorra Creeping Juniper Golden Pfitzer Juniper Hetzi Juniper Green Pfitzer Juniper Blue Pfitzer Juniper Emerson Juniper

Playground Accent Landscaping

Typical Location

Areas to receive accent plantings shall include all playgrounds throughout the Family Housing Character Area. Such plantings also shall apply to all other playgrounds throughout the base at isolated locations such as parks or recreation areas. For playgrounds the following shall apply:

playground accent landscaping

- At each separate playground, a minimum of four (4) trees and eight (8) shrubs shall be provided in conjunction with site furnishings such as benches as required. All trees shall be deciduous, while all shrubs shall be evergreen. All plants shall be located within thirty feet (30') (9 m) of the playground. Planting arrangement shall be an informal massing of plants.
- In areas where groups of required trees and shrubs are separate from turf grass areas, a mulch shall be used to a minimum depth of four inches (4") (101.6 mm). Such mulches shall consist of shredded wood.

Plant Palette

The focus for playground areas is to provide summer shade and year around color and texture. The plants which may be used are listed by category and by common name. All plants have been selected from the list in **Landscape Plants List**.

Playground Accent Plant Palette		
Shade Trees	Ornamental Trees	Evergreen Shrubs
Imperial Honey Locust Autumn Purple Ash Greenspire Linden Littleleaf Linden Norway Maple Norway Emerald Queen Maple Norway Jade Glen Maple Red Sunset Maple Royal Red Maple Schwedler Maple Northern Red Oak	Bechtel Crab Canada Red Cherry Newport Flowering Plum Bradford Pear Dolgo Crab Hopa Crab Selkirk Crab Spring Snow Crab Amur Maple	Buffalo Juniper Mugho Pine Blue Chip Juniper Broadmoor Juniper Hughes Juniper Old Gold Juniper Pfitzer Juniper Pfitzer Compact Juniper Prince of Wales Juniper Sea Green Juniper Table Top Juniper Tam Juniper Wilton Carpet

		Juniper Andorra Creeping Juniper Golden Pfitzer Juniper Hetzi Juniper Green Pfitzer Juniper Blue Pfitzer Juniper Emerson Juniper Colorgreen Juniper

Screen Planting

A common site element throughout Peterson AFB is dumpster enclosures. A closely related area, building service docks, is a prominent visual liability at many buildings. Both of these service functions are necessary. To help diminish the negative visual impact of these areas, screen plantings are required in this guideline.

Typical Location

A very aggressive effort has provided screening around most dumpsters. Most screens consist of very uniform metal vertical slats, and in some screens these have been combined with attractive brick columns. However, landscaping is still necessary to help diminish the strong horizontal (man-made) lines which, when located in a grassy field, are perceived as nothing more than “small buildings.”

Plantings adjacent to dumpster enclosures shall be used to screen these areas in all character areas. For dumpster enclosures the following shall apply:

- At each enclosure, a minimum of two (2) trees and eight (8) shrubs shall be provided for each dumpster contained within the enclosure. A minimum of one-half (1/2) of the required trees and shrubs shall be evergreen. All plants shall be located within fifteen feet (15') (4.57 m) of the enclosure, and shall be planted to avoid conflicts with required service access. Planting arrangement may be either formal or informal based upon the planting concept for the associated building. Building Related Landscaping.
- Trees and shrubs shall be physically separated from adjacent turf or native grass areas.
- In all cases where groups of trees and shrubs are separate from grass areas, a mulch shall be used to a minimum depth of four inches (4”) (101.6 mm). Such mulches shall consist of Canyon Red Limestone Rock, one and one-half (1-1/2“) (38.1 mm) diameter.
- Plantings adjacent to building service docks shall be used to screen these areas in all character areas. For building service dock areas the following shall apply:
- A minimum of four (4) trees and eight (8) shrubs shall be provided for every fifteen (15) linear feet (4.57 m) (or fraction thereof) of loading dock total "frontage" length in loading space. A minimum of one-half (1/2) of the required trees and shrubs shall be evergreen. All plants shall be located within thirty feet (30’) (9.14 m) of the loading dock or its service drive, and shall be located to avoid conflicts with required service access. Planting arrangement may be either formal or informal based upon the planting concept for the associated building. Building Related Landscaping.
- Trees and shrubs shall be physically separated from adjacent turf or native grass areas.
- In all cases where groups of trees and shrubs are separate from grass areas, a mulch shall be used to a minimum depth of four inches (4”) (101.6 mm). Such mulches shall consist of shredded wood.

Plant Palette

The plant palette emphasis for screening dumpster enclosures and service docks is to use

plants which can provide maximum visual screening in just a few years. Evergreens provide screening and four season texture and color. The plant types which may be used are listed by category and by common name. All plants have been selected from the listing in **Landscape Plants List**.

Screen Planting Plant Palette		
Shade Trees	Evergreen Trees	Ornamental Trees
NONE	Pinon Pine Colorado Blue Spruce Austrian Pine White Fir	Bechtel Crab Canada Red Cherry Washington Hawthorn Newport Flowering Plum Bradford Pear Dolgo Crab Hopa Crab Radiant Crab Selkirk Crab Spring Snow Crab English Hawthorn Amur Maple

Deciduous Shrubs	Evergreen Shrubs
Anthony Waterer Spirea Compact Burning Bush Cistena Plum Red Twig Dogwood Snowball Manhattan Euonymus Lilac, sp. Vanhoutte Spiraea Golden Elder Potentilla, sp. Three Leaf Sumac Embers Quince Snowberry	Mugho Pine Pyracantha Hughes Juniper Old Gold Juniper Pfitzer Juniper Pfitzer Compact Juniper Sea Green Juniper Table Top Juniper Golden Pfitzer Juniper Hetzi Juniper Green Pfitzer Juniper Blue Pfitzer Juniper Emerson Juniper Cologreen Juniper

print

landscape design

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landscape plant list

The plants listed in this appendix have been carefully chosen to respond to the specific needs of Peterson AFB. These needs include climate and all the associated implications resulting from a semi-arid, windy situation which severely limits the choice of plant materials. Also considered were soil types and their water-retention characteristics, pH factors, and natural lack of humus, requiring soil amendments.

The plants included here have been determined to best suit this restrictive set of parameters. This list is intended to exclude plants not mentioned, providing a limited plant palette for Peterson AFB. This limited palette approach will, over time, help to produce a repetitive, visually unifying effect for the entire base. Thus, landscaping will play a key role in the long-term goal of diminishing the visual disparities of a diverse military installation.

The plants are listed by categories such as **Shade Trees**, **Evergreen Trees**, **Ornamental Trees**, **Deciduous Shrubs**, **Evergreen Shrubs**, **Broadleaf Evergreens**, **Perennials**, and **Ground Covers**. This provides a mix of plant materials in an easy to use format. For each listing, the common and botanical names are given, along with brief descriptive data such as mature height and spread, growth rate, soil conditions, and irrigation needed for successful growth. The last column gives a brief description on the plant character. The recognized standard for the Peterson AFB area is to plant deciduous trees with a trunk diameter of 2 inches (63.5 mm) measured 1 (one) foot (304.8 mm) above finished grade, and coniferous trees a minimum of ten (10) feet (3.05 m) tall. Plant shrubs in a minimum 5 gallon (18.93 L) size which are at least 2 years old, to help ensure maximum survival rates.

Landscape Plant List Table Abbreviations

Irrigation Needs
L = Low
M = Moderate

Sun/Shade
s = sun
ps = partial shade
sh = shade

Plant Category Name		Mature Height	Mature Spread	Longevity Growth Soil	Soil Conditions	Irrigation Needs	Comments
SHADE TREES							
1	**Northern Red Oak** (Quercus rubra)	50′ (15.24 m)	30-40′ (9.14-2.2 m)	Moderate growth rate	Tolerates dry soils	M	Red orange leaves in fall. Relatively insect and disease free
2	**Marshall Seedless** (Green Ash) (Fraxinus pennsylvanica "Marshall Seedless")	40-60′ (12.2 - 18.3 m)	20-30′ 6.1 - 9.14 m)	Rapid growth rate and moderate longevity. Large Semi-Formal. Round	Tolerate of alkaline soils	M	Shiny green in summer, golden in fall, fruitless
3	**Imperial Honey**	45-60′	40-50′	Rapid growth rate			

	Locust (Gleditsia triancanthos Inermis "Imperial")	(13.7 - 18.3 m)	(12.2 - 15.24m)	and moderate longevity. Large Semi-Formal. (Spreading)	Tolerant to most soils. High salinity resistance	M	Fine texture with a yellow fall color
4	**Littleleaf Linden** (Tilia cordata)	30-60′ (9.14 - 18.3 m)	15-30′ (4.6 - 9.14 m)	Moderate rate of growth and longevity. Large Formal. (Pyramidal)	Tolerant to most soils. Moderate salinity resistance	M	Medium texture, yellow, fragrant flowers in the summer and exhibits a yellow fall color
5	**Norway Maple** (Acer platanoides)	40-60′ (12.2 - 18.3 m)	30-40′ (9.14 - 12.2 m)	Moderate growth and excellent longevity. Large-Formal	Tolerant to most soils. Moderate salinity resistance. (Rounded)	M	Foliage is very dense with small yellow-green flowers in the spring/p>
6	**Autumn Purple Ash** (Fraximus americana "Autumn Purple")	40-50′ (12.2 - 15.24 m)	30′ (9.14 m)	Moderate growth rate. Large semi-formal	Tolerant to alkaline soils	M	Dense green foliage in summer, maroon color in fall. Requires little pruning
7	**Shademaster Honey Locust**	50-75′ (15.24 - 22.9 m)	50′ (15.24 m)	Spreading, fast growing	Tolerant to most soils	M	Dark green fern-like foliage turns yellow in fall
8	**Sunburst Honey Locust** (Gleditsia triacanthos Sunburst, Honey Locust)	30′ (9.14 m)	40′ (12.12 m)	Globe form.	Tolerant to most soils	M	Uniform branches, yellow green foliage
9	**American Linden** (Tilia americana)	60′ (18.3 m)	50′ (15.24 m)	Moderate growth rate	Tolerant to most soils	M	Large, heart-shaped leaves and fragrant yellow flowers in spring
10	**Redmond Linden** (Tilia euchlora "Redmond")	40-50′ (12.2 - 15.24 m)	40′ (12.2 m)	Moderate growth rate	Tolerate to most soils	M	Large, dark green leaves, and fragrant flowers
11	**Norway Emerald Queen Maple** (Acer platanoides "Emerald Queen")	50-60′ (15.24 - 18.3 m)	40′ (12.2 m)	Slow growth	Tolerant to most soils	M	Glossy, dark green leathery foliage and dense branching
12	**Royal Red Maple**	35-40′	30′				

	(Acer platanoides "Royal Red")	(10.7 - 12.2 m)	(9.14 m)	Slow growth	Tolerant to most soils	M	Large dark red glossy leaves
13	**Schwedler Maple** (Acer plantanoides "Schwedler")	50-60′ (15.24 - 18.3 m)	40′ (12.2 m)	Moderate growth	Tolerant to most soils	M	Wide, reddish-purple leaves in spring; bronze-green in summer
14	**Greenspire Linden** (Tilia cordata "Greenspire")	30-50′ (9.14 - 15.24 m)	15-30′ (4.6 - 9.14 m)	Very hardy, slow to moderate growth rate	Does better with richer soils	M	Densely pyramidal form, yellow/ white flowers
15	**Norway Jade Glen Maple** (Acer platanoides "Jade Glen")	50-60′ (15.24 – 18.3 m)	-	Vigorous growth	Tolerates many soil conditions	M	Bright yellow fall color, green/ yellow flowers
16	**Red Sunset Maple** (Acer rubrum "Red Sunset")	40′ (12.2 m)	20′ (6.1 m)	Fast growth	-	M	Showy flowers, dull red fruit, brilliant red fall color
17	**Patmore Ash** (Green Ash) (Fraxinus pennsylvanica "Patmore")	30-40′ (9.14 - 12.2 m)	20′ (6.1 m)	Fast growth	Tolerant of alkaline soils	M	Tolerant of extreme cold
18	**Sunburst Honey Locust** (Gleditsia triancanthos "Sunburst")	35-70′ (10.7 - 21.3 m)	-	-	Tolerant of acid or alkaline soils	M	Yellow fall color, hardy to heat and cold
19	**Black Locust** (Robina pseudoacacia)	-	-	-	-	-	-
20	**Black Walnut** (Juglans nigra)	-	-	-	-	-	-
21	**Burr Oak** (Quercus macroacarpa)	-	-	-	-	-	-
22	**English Oak** (Quercus robur)	-	-	-	-	-	-
23	**Hackberry** (Celtis occidntalis)	-	-	-	-	-	-

24	**Kentucky Coffee Tree** (Gymnocladus diocia)	-	-	-	-	-	-
25	**Summit Green Ash** (Fraxinus pennsylvanica 'Summit')	-	-	-	-	-	-
26	**Swamp White Oak** (Quercus bicolor)	-	-	-	-	-	-
27	**Western Catalpa** (Catalpa speciosa)	-	-	-	-	-	-

Plant Category Name		Mature Height	Mature Spread	Longevity Growth Rate	Soil Conditions	Irrigation Needs	Comments
EVERGREEN TREES							
1	**Colorado Blue Spruce** (Picea pungens)	50-60' (15.24 - 18.3 m)	20-25' (6.1 - 7.6 m)	Moderate growth	Good specimen planting. Blue color	M	Native, symmetrical branches. Needs ample room, bluish color
2	**Ponderosa Pine** (Pinus ponderosa)	50' (15.24 m)	25' (7.6 m)	Moderate growth rate and longevity (round to oval)	Likes well drained soils	M	Needs ample room. Long medium green needles
3	**Pinon Pine** (Pinus edulis)	20' (6.1 m)	10-15' (3.0 - 4.6 m)	Very slow growth rate, good longevity. Small formal. (Pyramidal)	Very tolerant to most soil conditions	L	Handsome, small tree with a regular form. Good for screening
4	**Bristlecone Pine** (Pinus aristata)	30-40' (9.14 - 12.2 m)	15-25' (4.6 - 7.6 m)	Slow growing, irregular habit. Excellent longevity. (Pyramidal)	Enjoys windy exposure. Grows best in sun. Can withstand dry conditions.	M	Rough textured tree - foxtail. Speciman plant
5	**Smaragd Arborvitae** (Thuja occidentalis "Smaragd")	20' (6.09 m)	8-10' (2.4 - 3.0 m)	Pyramidal	Hardier than most other arborvitaes	M	Dark green foliage; very hardy
6	**White Fir**	70'	25'	Pyramid-	Protected		

	(Abies concolor)	(21.3 m)	(7.6 m)	shaped, slow growth, long lived	and slightly moist location, prefers loam	M	Blue-green color
7	**Austrian Pine** (Pinus nigra)	50′ (15.24 m)	20′ (6.1 m)	Rapid growth rate	Very tolerant to most soils	M	Long, stiff, dark green needles provide a dense, heavy appearance
8	**Scotch Pine** (Pinus sylvestris)	50′ (15.24 m)	20-25′ (6.1 - 7.6 m)	Rapid growth rate	Tolerant of most soils	M	Slightly twisted, medium length needles with a bluish tinge
9	**Rocky Mountain Juniper** (Juniperus scopulorum)	-	-	Slow growth rate	Tolerates alkaline soils	L	Seldom grown
10	**One Seed Juniper**	-	-	-	-	-	-
11	**Amur Maple** (Acer ginnala)	-	-	-	-	-	-
12	**Canada Red Cherry** (Prunus virginiana ‘Shubert’)	-	-	-	-	-	-
13	**Colorado Juniper** (Juniperus scopulorum ‘Cologreen’)	-	-	-	-	-	-
14	**Concolor or White Fir** (Abies concolor)	-	-	-	-	-	-
15	**Washington Hawthorn** (Crataegus phaenopyrum)	-	-	-	-	-	-

	Plant Category Name	Mature Height	Mature Spread	Longevity Growth Soil	Soil Conditions	Irrigation Needs	Comments
ORNAMENTAL TREES							
1	**Goldenrain Tree**	25′	20′	Slow to moderate	Tolerant of most soil	M	Fern like, yellow

	(Koelreutaria paniculata)	(7.6 m)	(6.1 m)	growth. Small crown	conditions		flowers in July
2	**Bradford Pear** (Pyrus calleryana "Bradford")	20-40' (6.1 – 12.2 m)	20-30' (6.1 - 9.14 m)	Moderate growth rate and longevity. Medium semi-informal (Pyramidal)	Very adaptable to most soils. Tolerates moderate acidic or alkaline soils	M	Ornamental with attractive dark foliage. White spring flowers, and spectacular purple-red fall color
3	**Newport Flowering Plum** (Prunus cerasifera "Newport")	25' (7.6 m)	20' (6.1 m)	Moderate growth and longevity. Small formal. (Rounded)	Adaptable to high or low pH conditions	M	Excellent small accent or specimen. Purple color fading to purplish-green with a red fall color
4	**Flowering Crabapple** (Malus species)	15-25' (4.6 - 7.6 m)	10-15' (3.0-4.6 m)	Moderate to slow growth rate. Good longevity if pruned. Small semi-formal. (Rounded)	Tolerant to most soils. Can withstand mild alkalinity. Well-drained garden soil is best	M	Spectacular early to late spring flowers and good fall color. Flowers range in color
4A	**Dolgo**	25-40' (7.6 - 12.2 m)	30' (9.14 m)	-	-	-	Pure white flowers, bears 1-1/2 " crimson fruit. Very hardy
4B	**Spring Snow**	20' (6.1 m)	15-18' (4.6 - 5.5 m)	-	-	-	Teardrop-shaped head; white flowers with a crimson star in the center. Fruitless variety most seasons.
5	**Canada Red Cherry** (Prunus virginiana "Shubert")	20-30' (6.1 - 9.14 m)	15-18' (4.6 - 5.5 m)	Medium to fast grower	Drought tolerant	M	Fragrant white flowers in Spring. Leaves turn a reddish-purple as they mature
6	**Washington Hawthorn** (Crataegus phaenopyrum)	20' (6.1 m)	15-18' (4.6 - 5.5 m)	Succulent growth	Grow on dry side	M	White flowers and bright red fruit. Green foliage, changing to scarlet to orange in the fall.
7	**Amur Maple** (Acer ginnala)	25' (7.6 m)	18' (5.5 m)	More than 1' per year	Constant availability of water in root system is needed	M	Small leaves and winged seeds in clusters. Turns orange-red in fall
8	**Hopa Crab**	15'	15-18'	Moderate	Moist, well-		Small red edible fruits, bright rose-

	(Malus hybrid "Hopa")	(4.6 m)	(4.6 - 5.5 m)	growth	drained soil	-	pink blossoms in early spring
9	**Selkirk Crab** (Malus "Selkirk")	-	-	Moderate growth	Likes good, well-drained garden soil	-	Spring flowers
10	**English Hawthorn** (Crataegus oxyacantha)	18-25' (5.5 - 7.6 m)	15-20' (4.5 - 6.1 m)	-	Dry soil for best results	-	Red, pink, or white flowers
11	**Russian Olive** (Elaeagnus angustifolia)	20' (6.1 m)	20' (6.1 m)	Slow growth	Drought tolerant	L	Silvery gray leaves, greenish yellow flowers
12	**Cockspur Hawthorn** (Crataegus crusgalli)	-	-	-	-	-	-
13	**Douglas Hawthorn** (Crataegus douglasii)	-	-	-	-	-	-
14	**Downy Hawthorn** (Crataegus mollis)	-	-	-	-	-	-
15	**New Mexico Privet** (Forestiera neomexicana)	-	-	-	-	-	-
16	**Russian Hawthorn** (Crataegus ambigua)	-	-	-	-	-	-
17	**Scrub Oak** (Quercus gambelii)	-	-	-	-	-	-
18	**Shubert Chokecherry** (Prunus virginiana 'Shubert')	-	-	-	-	-	-
19	**Wahsatch Maple** (Acer grandidentatum)	-	-	-	-	-	-

	Plant Category Name	Mature Height	Mature Spread	Longevity Growth Soil	Soil Conditions	Irrigation Needs	Comments
DECIDUOUS SHRUBS							
1	**Potentilla** (Potentilla Fruiticosa sp.)	2-3′ (0.6 - 0.9 m)	2′ (0.6 m)	Moderate to fast growth	Very drought tolerant. Tolerates most soils.	L	Yellow flowers, comes in a great variety.
2	**Cranberry Cotoneaster** (Cotoneaster apiculata)	2-3′ (0.6 - 0.9 m)	4-6′ (1.2 - 1.8 m)	Vigorous growth	Plant in protected site	-	Shiny green foliage and large red berries on arching branches
3	**Rock Cotoneaster** (Cotoneaster horizontalis)	2-3′ (0.6 - 0.9 m)	4-5′ (1.2 - 1.5 m)	Vigorous growth	Dry slopes	-	Attractive foliage with bright red berries in fall and winter
4	**Dwarf European Cranberry** (Viburnum opulus nanum)	2′ (0.6 m)	3-4′ (0.9 - 1.2 m)	Medium growth rate	Does well in light shade or heavy soils	-	Good small hedge or foundation plant. Red berries, red autumn color.
5	**Kelsey's Dogwood** (Cornus sericea "Kelsey")	2′ (0.6 m)	2′ (0.6 m)	Grows rapidly	Frequent watering in dryer areas	-	Dark green foliage changing to red in fall. Bright red stems
6	**Dwarf Korean Lilac** (Syringa meyeri)	3-5′ (0.9 - 1.5 m)	4-5′ (1.2 - 1.5 m)	Slow to moderate growth	Does well in moist soils	-	Small, wrinkled, dark green leaves, and fragrant lavender flowers
7	**Anthony Waterer Spirea** (Spirea bumalda "Anthony Waterer")	3′ (0.9 m)	3-4′ (0.9 - 1.2 m)	Medium growth rate	Any soils; average water	-	Rose-pink flowers and attractive fall foliage color
8	**Blue Mist Spirea** (Caryopteris x clandonensis)	4-5′ (1.2 - 1.5 m)	3-5′ (0.9 - 1.5 m)	Medium growth rate	Light soil; takes considerable drought	-	Soft, lavender-blue flowers in July and August
9	**Little Princess Spirea** (Spirea japonica "Little Princess")	18″ (457 mm)	2′ (0.6 m)	Upright growing; mounded growth; moderate to fast growth	Does well in most soils	-	Mint green foliage; flat clusters of rose-crimson blooms in summer
10	**Lilac**	4-6′	3-4′				Many different

	(Syringa vulgaris sp.)	(1.2 - 1.8 m)	(0.9 - 1.2 m)	Moderate growth rate	Hardy under adverse conditions	M	colors available; flowers in clusters.
11	**Compact Burning Bush** (Euonymus alatus compacta)	5-6′ (1.5 - 1.8 m)	4-5′ (1.2 - 1.5 m)	Slow to medium growth	Moderate watering	-	-
12	**Cistena Plum** (Prunus x cistena)	6-8′ (1.8 - 2.4 m)	6′ (1.8 m)	Moderate growth rate	Moderate watering	-	Pinkish-white flowers in early Spring; followed by rich purple foliage.
13	**Miss Kim Lilac** (Syringa patula)	5-6′ (1.5 - 1.8 m)	4-5′ (1.2 - 1.5 m)	Slow to moderate growth	Alkaline soil; average watering	-	Dark green foliage with purplish fall color; pale lilac flowers; fragrant
14	**Red Quince** (Chaenomeles japonica)	5-6′ 1.5 - 1.8 m)	4-5′ (1.2 - 1.5 m)	Moderate growth	Average garden watering, light to heavy soil	-	Large green leaves and striking red flowers in Spring
15	**Vanhoutte Spirea** (Spiraea x vanhouttei)	5-7′ (1.5 - 2.1 m)	5′ (1.5 m)	Fast growth	All kinds of soil; average water	-	Masses of snow-white flowers in April and May
16	**Winged Euonymus** (Euonymus alatus)	3-8′ (0.9 - 2.4 m)	-	Moderate growth rate	Tolerates most soils	M	Beautiful red fall color
17	**Nanking Cherry** (Prunus tomentosa)	8-10′ (2.4 - 3.0 m)	8′ (2.4 m)	Moderate to fast growth	Drought tolerant	-	Soft green foliage with snowy white flowers in Spring followed by fruit
18	**Peking Cotoneaster** (Cotoneaster acutifolia)	6-8′ (1.8 - 2.4 m)	5′ (1.5 m)	Vigorous growth	Tolerates most soils	-	Shiny green foliage; orange fall color
19	**Red Twig Dogwood** (Cornus sericea coloradensis)	8-10′ (2.4 - 3.0 m)	6-8′ (1.8 - 2.4 m)	Fast growth	Ample water	-	Glossy, light-blue fruit and red stems; white Spring flowers.
20	**French Hybrids Lilac** (Syringa vulgaris hybrid)	8-12′ (2.4 - 3.7 m)	8-10′ (2.4 - 3.0 m)	Slow to moderate growth	Water should always be available	-	Large and beautiful flowers, large dark green leaves
21	**Siberian Peashrub**						Brilliant yellow

	(Caragana arborescens)	12-15′ (3.7 - 4.6 m)	6-8′ (1.8 - 2.4 m)	Fast growing	Drought resistant	-	flowers in May and June; bright green foliage. Bears 2″ (50.8 mm) pea-like seed pods
22	**Snowball** (Viburnum opulus sterilis)	10-12′ (3.0 - 3.7 m)	8-10′ (2.4 - 3.0 m)	Moderate growth rate	Heavy rich soils, tolerates alkaline and acid soils	-	Profusion of large, round clusters of double white flowers in April/ May
23	**Common Quince** (Quince spp.)	10-25′ (3.0 - 7.6 m)	-	Slow growth	Heavy, well-drained soil, tolerates wet soil	M	Dramatic winter form, white or pink flowers, yellow fruit
24	**Embers Quince** (Quince "Embers")	10-25′ (3.0 - 7.6 m)	-	Slow growth	Heavy, well-drained soil, tolerates wet soil	M	Dramatic winter form, white or pink flowers, yellow fruit
25	**Snowberry** (Symphoricarpos albus)	2-6′ (0.6 - 1.8 m)	-	-	Tolerates poor soil	M	Pink flowers, white fruit attracts birds, good for erosion control
26	**Wayfaring Tree** (Viburnum lantana)	8-15′ (2.4 - 4.6 m)	8′ (2.4 m)	-	Tolerates alkaline and acidic soils, drought tolerant	L	Red color in fall, white flowers, red fruit
27	**Golden Elder**	-	-	-	-	-	-
28	**Zabel Honeysuckle** (Lonicera Korolkowii "Zabelii")	12′ (3.7 m)	4′ (1.2 m)	-	-	M	Rose colored flowers, red fruit
29	**Japanese Barberry** (Berberis thunbergii)	4-6′ (1.2 - 1.8 m)	4-6′ (1.2 - 1.8 m)	Moderate growth	Drought tolerant, tolerates most soils	L	Hardy to -20ºF (-29º C) Yellow, orange, and red fall color, red berries
30	**Flowering Quince** (Chaenomeles)	10′ (3.0 m)	12′ (3.7 m)	Moderate growth	Light to heavy soil	M	Tolerant of extreme heat and cold
31	**Yellow Twig Dogwood** (Cornus stolonifera "Flaviramea")	15′ (4.6 m)	10′ (3.0 m)	-	-	-	Yellow twigs and branches
32	**Golden Privet** (Ligustrum	3-4′ (0.9 - 1.2 m)	3-4′ (0.9 - 1.2 m)	-	Tolerates any soils	M	Yellow leaves

	"Vicaryi")						
33	**Emerald Mound Honeysuckle** (Lonicera)	-	-	-	-	-	-
34	**Mountain Mahogany** (Cerocarpus)	-	-	-	Very drought tolerant	-	Mountain and foothills native, fall fruit
35	**Crimson Pygmy Barberry** (Berberis thunbergii "Crimson Pygmy")	(457 mm)	30" (762 mm)	-	-	-	Bronzy red leaves
36	**Three Leaf Sumac**	-	-	-	-	-	-
37	**American Plum** (Prunus americana)	-	-	-	-	-	-
38	**Burning Bush** (Euonymus aletus)	-	-	-	-	-	-
39	**Common Ninebark** (Physocarpus opulifolius)	-	-	-	-	-	-
40	**Curlyleaf Mahogany** (Cercocarpus ledifolius)	-	-	-	-	-	-
41	**Forsythia** (Forsythia intermedia)	-	-	-	-	-	-
42	**Gambel Oak** (Quercus gambeli)	-	-	-	-	-	-
43	**Lynwood Gold Forsythia** (Forsythia intermedia)	-	-	-	-	-	-
44	**Nannyberry** (Virburnum	-	-	-	-	-	-

	lentago)						
45	**Native Chokecherry** (Prunus virginiana melancarpa)	-	-	-	-	-	-
46	**New Mexico Privet** (Forestiera neo-mexicana)	-	-	-	-	-	-
47	**Rock spirea** (Holodiscus dumosus)	-	-	-	-	-	-
48	**Sage** (Artemsia tridentata)	-	-	-	-	-	-
49	**Saskatoon Serviceberry** (Amelanchier alnifolia)	-	-	-	-	-	-
50	**Sea Buckthorn** (Hippophae rhamnoides)	-	-	-	-	-	-
51	**Silver Buffaloberry** (Shepherdia argentea)	-	-	-	-	-	-
52	**Silverberry** (Elaeagnus commutata)	-	-	-	-	-	-
53	**Smooth Sumac** (Rhus glabra)	-	-	-	-	-	-
54	**Spring Glory Forsythia** (Forsythia intermedia)	-	-	-	-	-	-
55	**Staghorn Sumac** (Rhus tyhina)	-	-	-	-	-	-
56	**Utah Serviceberry** (Amelanchier utahensis)	-	-	-	-	-	-

57	**Western Choke Cherry** (Prunus virginiana)	-	-	-	-	-	-
58	**Alpine Currant** (Ribes alpinum)	-	-	-	-	-	-
59	**Antelope Bush** (Purshia tridentata)	-	-	-	-	-	-
60	**Apache Plume** (Fallugia paradoxa)	-	-	-	-	-	-
61	**Barberry** (Berberis thunbergi)	-	-	-	-	-	-
62	**Blue Mist Spirea** (Caryopteris x clandonensis)	-	-	-	-	-	-
63	**Dwarf Korean Lilac** (Syringa meyeri)	-	-	-	-	-	-
64	**Fernbush** (Chamaebatiara millefolium)	-	-	-	-	-	-
65	**Froebel Spirea** (Spiraea bumalda 'Froebel')	-	-	-	-	-	-
66	**Indigo Bush** (Amorpha fruiticosa)	-	-	-	-	-	-
67	**Korean Barberry** (Berberis koreana)	-	-	-	-	-	-
68	**Moonlight Broom** (Cytisus scoparius	-	-	-	-	-	-

	'Moonlight')						
69	**Persian Yellow Rose** (Rosa foetida 'Persiana)	-	-	-	-	-	-
70	**Plum Cistena** (Prunus x cistena)	-	-	-	-	-	-
71	**Rabitbrush** (Chrysothamnus nauseosus albicaulis)	-	-	-	-	-	-
72	**Snowmound Spirea** (Spiraea mipponica 'Smowmound')	-	-	-	-	-	-
73	**Spreading Contoneaster** (Contoneaster divaricata)	-	-	-	-	-	-
74	**Viburnum** (Viburnam lantana)	-	-	-	-	-	-
75	**Western Sand Cherry** (Prunus besseyi)	-	-	-	-	-	-
76	**Yellow flowering Currant** (Ribes aureum)			-	-	-	-
77	**Arnold's Dwarf Forsythia** (Forsythia x Arnold Dwarf)	-	-	-	-	-	-
78	**Austrian Copper Rose** (Rosa foetida 'Bicolor')	-	-	-	-	-	-
79	**Bonica Rose** (Rosa x 'Bonica')	-	-	-	-	-	-
80	**Dwarf Blue Rabbitbush**	-	-	-	-	-	-

	(Chrysothamnus nauseosus nauseosus)						
81	**Fragrant False Indigo** (Baptisia australis)	-	-	-	-	-	-
82	**Gooseberry** (Ribes inerme)	-	-	-	-	-	-
83	**Hancock Coralberry** (Symphoricarpos x chenaulti 'Hancock')	-	-	-	-	-	-
84	**Lead Plant** (Amorpha canescens)	-	-	-	-	-	-
85	**Lena Broom** (Cytisus x 'Lena')	-	-	-	-	-	-
86	**Lowfast Cotoneaster** (Cotoneaster dammeri 'Lowfast')	-	-	-	-	-	-
87	(Physocarpus monogynus)	-	-	-	-	-	-
88	**Persian Yellow Rose** (Rosa foetida 'Persiana')	-	-	-	-	-	-
89	**Pygmy Pea Shrub** (Caragana pygmaea)	-	-	-	-	-	-
90	**Redleaf Barberry** (Berberis thunbergii var. atropurpurea)	-	-	-	-	-	-
91	**Redshrub Rose** (Rosa x 'Adelaide Hoodless')	-	-	-	-	-	-
92	**Russian Sage**	-	-	-	-	-	-

	(Perovskia atriplicifolia)						
93	**Soapweed** (Yucca glauca)	-	-	-	-	-	-
94	**Squaw Currant** (Ribes cereum)	-	-	-	-	-	-
95	**Yucca** (Yucca baccata)	-	-	-	-	-	-

	Plant Category Name	Mature Height	Mature Spread	Longevity Growth Soil	Soil Conditions	Irrigation Needs	Comments
EVERGREEN SHRUBS							
1	**Tam Juniper** (Juniperus sabina tamariscifolia)	2-4′ (0.6 - 1.2 m)	4-5′ (1.2 - 1.5 m)	Moderate growth rate	Very hardy	M	Excellent ground cover when massed together. Mounded shape
2	**Andorra Creeping Juniper** (Juniperus horizontalis plumosa depressa)	1-2′ (0.3 - 0.6 m)	3′ (0.9 m)	Moderate growth rate	Very hardy	M	Irregular spreading habit. Turns purple in winter
3	**Prince of Wales Juniper** (Juniperus horizontalis "Prince of Wales")	1′ (0.3 m)	3′ (0.9 m)	Moderate growth rate	Exceptionally drought tolerant. Tolerates most soils	L	Spreading ground cover
4	**Mugo Pine** (Pinus mugho mugho)	3-4′ (0.9 - 1.2 m)	3-5′ (0.9	Slow growth rate	Tolerates most soils. Prefers well-drained soil	M	Rounded form, evergreen
5	**Bar Harbor Juniper** (Juniperus horizontalis "Bar Harbor")	6-8″ (152 - 203 mm)	6′ (1.8 m)	Medium - more than 1ft/year	Regular irrigation most soils	-	Soft blue foliage in summer, silvery-plum color in winter
6	**Blue Chip Juniper** (Juniperus horizontalis "Blue Chip")	8-10″ (203 - 254 mm)	6′ (1.8 m)	Moderate growth	Well drained	-	Blue foliage, compact prostrate juniper

7	**Blue Creeper Juniper** (Juniperus "Blue Creeper")	2′ (0.6 m)	6-8′ (1.8 - 2.4 m)	Moderate growth	Well drained	-	Low spreading branches, blue coloring to the foliage
8	**Broadmoor Juniper** (Juniperus "Broadmoor")	12-18″ (305 - 457 mm)	4-5′ (1.2 - 1.5 m)	Moderate growth	Very hardy	-	Low, wide branching plant; soft, bright green foliage
9	**Buffalo Juniper** (Juniperus sabina "Buffalo")	12-18″ (305 - 457 mm)	6-8′ (1.8 - 2.4 m)	Moderate growth	Very hardy	-	Low growing, wide spreading with soft, bright green foliage
10	**Hughes Juniper** (Juniperus horizontalis "Hughes")	18-24″ (457 - 610 mm)	6-8′ (1.8 - 2.4 m)	Moderate growth	Well-drained	-	Silver-blue foliage, low growing wide spreading form
11	**Pfitzer Compact Juniper** (Juniperus chinensis pfitzerana compacta)	3-4′ (0.9 - 1.2 m)	5-6′ (1.5 - 1.8 m)	Slow growth	Almost any well-drained. Tolerates dry, rocky, acid, and alkaline conditions	-	Medium sized, compact, spreading with lush green foliage; dense form low branches
12	**Hetzi Juniper** (Juniperus chinensis "Hetzi Clauca")	4-6′ (1.2 - 1.8 m)	15′ (4.6 m)	Rapid growth	Any well-drained soil	-	Fountain-like habit; blue foliage
13	**Sea Green Juniper** (Juniperus chinensis "Sea Green")	6-8′ (1.8 - 2.4 m)	6-7′ (1.8 - 2.1 m)	Fast growing	Any well-drained soil	-	Lush green foliage and arching branches with a dense, vase-shaped growth habit
14	**Table Top Blue Juniper** (Juniperus "Table Top Blue")	4′-6′ (1.8 - 2.4 m)	6-8′ (1.8 - 2.4 m)	Moderate growth	Very hardy	-	Bright, blue-gray foliage
15	**Wilton Carpet Juniper** (Juniperus horizontalis "Wilton")	4-6″ (102 - 152 mm)	5-6′ (1.5 - 1.8 m)	Moderate growth rate	Any well-drained soil	-	Low traiing juniper with intense silver-blue foliage and berries
16	**Cologreen Juniper**	-	-	Moderate	Well-drained	-	Soft, scale-like foliage retains color

	(Juniperus scopulorum "Cologreen")			growth	soil		throughout the year
17	**Pfitzer Juniper** (Juniperus chinensis "Pfitzerana")	5-6′ (1.5 - 1.8 m)	15-20′ (4.6 - 6.1 m)	-	Tolerates heavy and alkaline soils	L	Gray green foliage
18	**Old Gold Juniper** (Juniperus chinensis "Golden Armstrong")	4′ (1.2 m)	4′ (1.2 m)	-	Tolerates heavy and alkaline soils	L	Golden green foliage
19	**San Jose Juniper** (Juniperus chinensis "San Jose")	2′ (0.6 m)	6′ (1.8 m)	Slow growing	Tolerates heavy and alkaline soils	L	Prostrate, dense growth, dark sage green foliage
20	**Golden Pfitzer Juniper** (Juniperus chinensis "Pfitzerana Aurea")	3-4′ (0.9 - 1.2 m)	8-10′ (2.4 - 3.0 m)	-	Tolerates heavy and alkaline soils	L	Blue gray foliage, new foliage golden yellow
21	**Green Pfitzer Juniper**	-	-	-	-	-	-
22	**Blue Pfitzer Juniper**	-	-	-	-	-	-
23	**Emerson Juniper** (Juniperus horizontalis "Emerson")	8″ (203 mm)	6-8′ (1.8 - 2.4 m)	-	-	-	Gray green foliage
24	**Blue Haven Juniper**	-	-	-	-	-	-
25	**Scandia Juniper** (Juniperus sabina "Scandia")	1′ (0.3 m)	8′ (2.4 m)	-	-	-	Low, dense, bright green foliage
26	**Arcadia Juniper** (Juniperus sabina "Arcadia")	1′ (0.3 m)	10′ (3.0 m)	-	-	-	Bright green, lacy foliage
27	**Armstrong**						

	Juniper (Juniperus chinensis 'Armstrong')	-	-	-	-	-	-
28	**Calgary Carpet Juniper** (Juniperus samina 'Calgary Carpet')	-	-	-	-	-	-
29	**Gray Gleam Juniper** (Juniperus scopulorum 'Grey Gleam')	-	-	-	-	-	-
30	**Greenmound Juniper** (Juniperus procumbens 'Greenmound')	-	-	-	-	-	-
31	**Holbert Juniper** (Juniperus chinensis 'Holbert')	-	-	-	-	-	-
32	**Moonglow Juniper** (Juniperus scopulorum 'Moonglow')	-	-	-	-	-	-
33	**Savin Juniper** (Juniperus Sabina)	-	-	-	-	-	-

	Plant Category Name	Mature Height	Mature Spread	Longevity Growth Soil	Soil Conditions	Irrigation Needs	Comments
BROADLEAF EVERGREEN							
1	**Manhattan Euonymus** (Euonymus patens "Manhattan")	4-6' (1.2 - 1.8 m)	4-6' (1.2 - 1.8 m)	Moderate growth	Tolerates most soils	-	Very glossy dark green leaves; does well in shade
2	**Kasan Pyracantha** (Pyracantha coccinea "Kasan")	10' (3.0 m)	8' (2.4 m)	Fast and vigorous growth	Not constantly wet soil away from sprinklers	L	Bright, red-orange berries set on in fall; glossy green foliage

3	**Lalandei Pyracantha** (Pyracantha coccinea "Lalandei")	8-10' (2.4 - 3.0 m)	6-8' (1.8 - 2.4 m)	Fast and vigorous growth	Very hardy	L	Fire-blight resistant shrub with orange-red berries in fall/winter
4	**Wyatti Pyracantha** (Pyracantha coccinea "Wyatti")	6-8' (1.8 - 2.4 m)	6-8' (1.8 - 2.4 m)	Fast and vigorous growth	Keep away from sprinklers, keep soil dry often	L	Bushy, dense, thorny upright shrub with masses of white spring flowers followed by clusters of orange berries
5	**Compact Oregon Grape Holly** (Mahonia aquifolium compacta)	-	-	-	-	-	-
6	**Creeping Colorado Grape Holly** (Mahoni repens)	-	-	-	-	-	-
7	**Oregon Grape Holly** (Mahonia aquifolium)	-	-	-	-	-	-
8	**Wintercreeper Euonymus** (Euonymus fortunei 'Coloratus')	-	-	-	-	-	-

	Plant Category Name	Mature Height	Mature Spread	Longevity Growth Soil	Soil Conditions	Irrigation Needs	Comments
PERENNIALS							
1	**Fall Aster** (Aster hybrids)	-	-	Compact growth habit	Very hardy	-	Late summer daisy-like flowers in purple, blue, pink, red, or white
2	**Astilbe or False Spirea** (Astilbe hybrids)	-	-	Fast growing	Cool moist soil rich in humus	-	Dainty spring flowers in feathery plumes, desirable foliage
3	**Basket of Gold or Alyssum** (Alyssum saxatile)	-	-	Moderate to fast	Fairly drought tolerant	-	Golden-yellow early spring flowers with silver-green foliage
							Daisy-like

4	**Blanket Flower** (Gaillardia var.)	-	-	Moderate	Some drought good drainage	-	flowers in yellow and rust colors
5	**Bleeding Heart** (Dicentra spectabilis)	-	-	Moderate to fast	Rich, light, moist porous soil	-	Small heart-shaped flowers in spring
6	**Evergreen Candytuft** (Iberis sempervirens)	10" (254 mm)	15" (381 mm)	Moderate	Water deeply and infrequently	-	Dark green evergreen foliage, clusters of white spring flowers.
7	**Grenedin Carnation** (Dianthus sp.)	-	-	Moderate	Need alkaline soil. Very hardy, light fast draining	-	Flowers appear in June; good for rock gardens and borders
8	**Chrysanthemum or Cushion Mum** (Chrysanthemum hybrids)	-	-	Slow to moderate	Very hardy	-	Garden flowers available in a large selection of shapes and colors
9	**Columbine** (Aquilegia spp.)	2"-4' (51 mm - 1.2 m)	-	Slow to moderate	Water when dry		Varieties are available in colors ranging from red to yellow to blue
10	**Coralbells** (Heuchera sanguinea)	-	-	Moderate	Needs plenty of water	-	Compact plant with dark green leaves; dainty pink flowers
11	**Coreopsis or Butter Daisy** (Coreopsis lanceolata)	-	-	Moderate	Can thrive on very little water	-	Bright yellow Daisy-type flowers from June to August
12	**Painted Daisy** (Chrysanthemum coccineum)	-	-	Moderate to fast	Very hardy	-	Pastel colored Daisy-type flowers blooming in June; delicate fern-like foliage
13	**Shasta Daisy** (Chrysanthemum maximum)	-	-	Moderate to fast	Very hardy	-	White petals with yellow centers; blooms in June and July
14	**Daylily** (Hemerocallis hybrids)	-	-	Moderate to fast	All soil types	-	Fragrant, lily-type flowers with grassy foliage
15	**Delphinium** (Delphinium spp.)	-	-	Short-lived, slow to moderate	Light soil mix	-	Showy, tall, spiked plants; shades of blue, lavender and white flowers
16	**Dianthus or Garden Pinks**	-	-	Moderate to	Fast draining,	-	Fragrant pink to dark red

	(Dianthus hybrids)			fast	light		flowers in June and July
17	**Flax** (Linum perenne)	-	-	Moderate to fast	Drought resistant	-	Delicate sky-blue flowers in May on a feathery blue-green compact plant
18	**Plantain Lily Hosta** (Hosta spp.)	-	-	Moderate	Water regular in summer	-	Variety of colored or green leaves and fragrant white or lavender flowers
19	**Lupine** (Lupinus "Russell Hybrids")	-	-	Moderate to fast	Needs good drainage	-	Gorgeous spires of closely-set blossoms in early summer; dark green palmate foliage
20	**Peony** (Paeonia hybrids)	-	-	Very hardy	Grows in most soils	-	Showy spring and early summer blooms; fragrant single or double flowers in shades of white, pink or red
21	**Garden Phlox** (Phlox paniculata)	-	-	Moderate to fast growth	Average garden soil	-	Softball-sized blooms in mixed colors in summer
22	**Primrose** (Primula sp.)	-	1-1/2" (38 mm)	Moderate growth	-	-	Fragrant, bright colored flowers for borders or rock gardens
23	**Showy Stonecrop** (Sedum spectabile)	-	-	Fast growth	Need little water in summer	-	Salmon, pink, or rust-colored blooms; nice late summer/fall color
24	**Silver Mound** (Artemisia schmidtiana "Silver Mound")	1' (0.3 m)	-	Moderate to fast	Drought resistant	-	Light silver-gray fern-like foliage
25	**Baby's Breath** (Gypsophila paniculata)	-	-	-	-	-	-
26	**Bearded Iris** (Iris hybrids)	-	-	-	-	-	-
27	**Bee Balm** (Monarda didyma)	-	-	-	-	-	-
28	**Bluebells**	-	-	-	-	-	-

	(Campanula cochlearifolia)						
29	**California Poppy** (Eschscholizia californica)	-	-	-	-	-	-
30	**Chocolate Flower** (Berlandiera lyrata)	-	-	-	-	-	-
31	**Dwarf Coreopsis** (Coreopsis auriculata nana)	-	-	-	-	-	-
32	**False Indigo** (Baptisia australis)	-	-	-	-	-	-
33	**Gay Butterfly** (Asclepias tuberosa)	-	-	-	-	-	-
34	**Hummingbird Flower** (Zauschneria californica latifolia)	-	-	-	-	-	-
35	**Ice Plant** (Delosperma nubigenum)	-	-	-	-	-	-
36	**Lavender** (Lavandula angustifolia)	-	-	-	-	-	-
37	**New Mexico Primrose** (Oenothera berlandieri)	-	-	-	-	-	-
38	**Penstemon** (Penstemon sp.)	-	-	-	-	-	-
39	**Poppy Mallow** (Callirhoe involucrata)	-	-	-	-	-	-
40	**Red Hot Poker** (Kniphofia uvaria)	-	-	-	-	-	-
41	**Sage** (Artemisia schmidtiam)	-	-	-	-	-	-
42	**Santolina** (Santolina chamuecyparissus)	-	-	-	-	-	-
43	**Snakeweed** (Gutierrezia	-	-	-	-	-	-

	sarothrae)						
44	**Speedwell** (Veronica sp.)	-	-	-	-	-	-
45	**Spurge** (Euphurbia epithymoides)	-	-	-	-	-	-
46	**Sulfur Flower** (Eriogonum umbellatum)	-	-	-	-	-	-
47	**Sunrose** (Helianthemum nummularium)	-	-	-	-	-	-
48	**Wallflower** (Erysimum asperum)	-	-	-	-	-	-
49	**Yarrow** (Achillea millefolium)	-	-	-	-	-	-

	Plant Category Name	Mature Height	Mature Spread	Longevity Growth Soil	Soil Conditions	Irrigation Needs	Comments
GROUND COVER							
1	**Creeping Mahonia** (Mahonia repens)	1′ (0.3 m)	2′ (0.6 m)	s/ps	Hardy, needs some protection	M	Holly-like evergreen leaves which turn red in winter
2	**Potentilla** (Potentilla sp.)	6″ (152 mm)	2′ (0.6 m)	s/ps	Drought tolerant, very hardy	L	Dark green, strawberry like leaves. Variety of flowers
3	**Periwinkle** (Vinca minor)	6″ (152 mm)	12-18″ (305 - 457 mm)		Deep and moist but not wet	M	Lavender-blue blossoms in early Spring
4	**Border Jewel** (Polygonum affine)	-	-	-	-	-	-
5	**Compact Andorra Juniper** (Juniperus horizontalis 'Plumosa compacta')	-	-	-	-	-	-
6	**Featherleaf Penstemon** (Penstemon pinifolius)	-	-	-	-	-	-

7	**Creeping Potentilla** (Potentilla crantzll)	-	-	-	-	-	-
8	**Fleece Flower** (Ploygonum reynoutria)	-	-	-	-	-	-
9	**Purpleleaf Wintercreeper** (Enonymus fortunei 'Colortus')	-	-	-	-	-	-
10	**Pussytoes** (Antennaria rosea)	-	-	-	-	-	-
11	**Sedum** (Sedum)	-	-	-	-	-	-
12	**Wild Strawberry** (Fragaria Americana)	-	-	-	-	-	-
13	**Yellow Stonecrop** (Sedum lancelolatum)	-	-	-	-	-	-

PLANT CATEGORY/NAME		MATURE HEIGHT	MATURE SPREAD	GROWTH RATE	SOIL CONDITIONS	IRRIGATION NEEDS	COMMENTS
ORNAMENTAL GRASSES							
1	**Big Bluestem** (Andropogon gerardii)	-	-	-	-	-	-
2	**Blue Avena Grass** (Helictotrichon semperviens)	-	-	-	-	-	-
3	**Blue Fescue Grass** (Festuca ovina glauca)	-	-	-	-	-	-
4	**Dwarf Fountain Grass** (Pennisetum alopercuroides 'Hamelin')	-	-	-	-	-	-
5	**Feather Reed Grass**						

	(Calamagrostis acutiflora)	-	-	-	-	-	-
6	**Limegrass** (Elumus glaucus)	-	-	-	-	-	-
7	**Little Bluestem** (Schizachyrium scoparium)	-	-	-	-	-	-
8	**Maidengrass** (Miscanthus sinensis gracillimus)	-	-	-	-	-	-
9	**Plumegrass** (Erianthis ravennae)	-	-	-	-	-	-
10	**Prairie Cordgrass** (Spartina pectinata)	-	-	-	-	-	-
11	**Ribbon Grass** (Phalaris arundinacea 'Picta')	-	-	-	-	-	-
12	**Switchgrass** (Panicum virgatum)	-	-	-	-	-	-

PLANT CATEGORY/NAME		MATURE HEIGHT	MATURE SPREAD	LONGEVITY GROWTH RATE	SOIL CONDITIONS	IRRIGATION NEEDS	COMMENTS
VINES							
1	**Honeysuckles** (Lonicera spp.)	-	-	-	-	-	-
1a	**Gold Flame**	-	-	-	-	-	-
1b	**Hall's**	-	-	-	-	-	-
2	**Silver Lace Vine** (Ploygonum auberti)	-	-	-	-	-	-

print

landscape design

xeriscaping

Xeriscape is a trademark used for a landscaping method that employs drought-resistant plants in an effort to conserve resources, especially water. The USAF Landscape Design clearly defines the need and goal for the application of Xeriscape principles through responsible design and the construction of water efficient, attractive, and easily maintainable landscapes. A **Xeriscape Study** for Peterson AFB was conducted in order to provide the installation with ideas and a plant list that will assist the implementation of these landscape principles. This study also provides design guidelines and educational documentation as to the appropriate landscape management strategies that will be needed for Peterson AFB to maintain the strong lush green visual image while reducing water consumption.

print

landscape design

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irrigation

Introduction

There are several widely recognized and often used irrigation procedures and products which have become an integral part of landscape design at Peterson AFB. These should be used routinely at all landscape projects where irrigation is required. These procedures and products have been distilled through many years of extensive experience with numerous irrigation systems. These requirements are enumerated in the following paragraphs. Manufacturer names, numbers, and models have been used to indicate an acceptable level of quality and performance for all installations. These products or other products of equal or better quality and performance may be used at irrigation installations.

Requirements

Back Flow Preventers

Peterson AFB requires that back flow preventers be installed in heated mechanical rooms. Install piping to avoid exposure to the elements. Use a sweep type sleeve with soft copper or like material in sleeve to exit building 20” (508 mm) below ground and to extend thru-below or beyond all hard surfaces. When an outdoor installation is required, install preventer inside an insulated removable enclosure. Outdoor installations will require that both sides of the installation be drainable. These valves shall be brass straight valve assemblies. Febco brand pressure principle devices are in use and meet all requirements. All installations must meet or exceed current state of Colorado backflow preventer requirements. Install a 4” (102 mm) thick concrete pad under the backflow preventers.

Piping Systems

The required piping system for Peterson AFB is PVC piping for all installations. Class 200 PVC solvent welded is required. For all pipes larger than 2” (50.8 mm) diameter, heavy bodied glue is required. When poly pipe is specified, 100 PSI (689.5 k Pa) is preferred, along with the use of crimp clamps.

Electric Valves

Peterson AFB requires using Hardie 700 series ultra flow valves for all installations. An acceptable alternative is the Rainbird line of electric valves. It is also required to have master valves installed on all systems.

Irrigation Controllers

Rainbird RCM-B controllers are currently in use and are suitable for all installations. Both pedestal and wall mount types are acceptable. Exterior locations are required for maintenance and accessibility. All controllers should be equipped with remote control technology permanent pigtail for remote control operation. Mount all controllers at 5 feet (1.52 m) above ground level. Electric metal conduit shall be installed from the controller to 20” (508 mm) into the ground with a sweep. Each controller shall have its own dedicated electric breaker switch circuit..

Sprinkler Heads

For small turf grass areas, shrubs, trees and plant beds the Rainbird 1800 series pop up spray with plastic nozzles on 1/2” (12.7 mm) risers are currently in use and meet all requirements. For larger turf areas the Hunter line of rotor heads are currently in use and meet all requirements. Drip emitters shall not be used. All heads shall be set flush with the ground and perpendicular to level. Completely flush, clean and adjust all heads to

adequately cover all areas to be irrigated.

Sprinkler Head Riser Assemblies

On all irrigation systems with less than 40 PSI (275.8 k Pa) running pressure, a straight cut-off type riser is required. **The use of alternate type riser arrangements is not acceptable**. For larger heads with pressure higher than 40 PSI (275.8 k Pa), a triple swing joint is required.

Control Wiring

All wire shall be 14 gauge solid copper, installed using the direct burial method. Common wire shall be White in color. Individual control wires shall all be the same color. A minimum of three spare third color wires shall be installed in all main line trenches regardless of direction of the main line. A total of 6 wires will be required from the controller. Wiring shall be installed below and to the side of main lines. Where control wires do not run with a main line, it should be denoted on the record as-built drawings retained by the base. Denote control wiring on all drawings, using the CAD system symbol used by Peterson AFB.

Wire Connectors

For in-ground connections, the Spears DS 400 prefilled watertight connectors or their equivalent are currently in use and meet all requirements. **Wire nuts are not acceptable.**

Valve Boxes

Valve boxes must be a minimum of ten (10) inches (254 mm) in diameter. All boxes must be installed such that the top of the box is flush with the finished grade. Stack or extend boxes as necessary. Ametek valve boxes are currently in use and meet all requirements.

Drain Valves

Drains shall be installed on low points of main lines to drain sections as required for maintenance. All drains shall be brass straight valve assemblies. **AUTOMATIC DRAINS OF ANY TYPE SHALL NOT BE USED.**

Quick Couplers

The required method is to use a quick coupler as a blow-out assembly. Rainbird 1 (one) inch (25 mm) single lug is acceptable as a minimum. Locate quick coupler immediately downstream from the backflow preventer.

Trenching

The use of pipe pullers or vibratory plows to install pipe and/or control wires is not acceptable. All trenches shall be straight and smooth, and of adequate depth for the type of pipe to be installed.

Main Line Depth: 18 to 20 inches (457.2 mm to 508 mm)

Lateral Pipe Depth: 8 to 10 inches (203.2 mm to 254 mm)

Backfill and Compaction

Provide clean backfill soil free of clods, rocks, or any deleterious debris that could damage pipelines or prevent proper compaction. Compaction shall be accomplished in 6” (152.4 mm) lifts only with a vibratory plate or trench foot jumping jack. Puddling, flooding, or any other means of achieving compaction is not acceptable.

Sleeves

Class 200 PVC sleeves shall be installed under, and 1 foot (305 mm) beyond, all hard surfaces i.e., sidewalks, driveways, parking lots, etc. All sleeves shall be straight without bends. Sleeves shall be 6” I.D. (152 mm) and installed 10 to 20 inches (254 mm to 508 mm) deep for main lines and 8 to 10 inches (203.2 mm to 254 mm) deep for lateral lines.

Red Line Drawings

Submittal of Red Line “as built” drawings for all irrigation systems and or modifications shall be required within two workdays after installation.

print

landscape design

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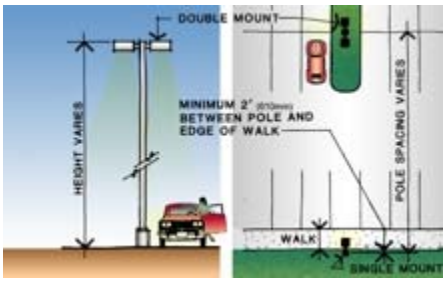
parking lot lighting

Lighting at parking lots needs to be used to help reinforce common design themes throughout the base. The use of common forms, materials and colors will bring a much more cohesive visual unity to each character area. This concept for parking lot lighting works with the concepts for other lighting types, signage, and site furnishings found elsewhere in **Site Elements** of the EDG.



parking lot lighting

Lighting for parking lots shall be provided using two basic design styles that shall be a more formal, upscale approach for use in all parking lots. These design styles shall be referred to as PL-1 and PL-2.

Utility lines shall not run down the middle of islands and medians. This center space should be reserved for landscaping, light fixtures and other amenities.

Peterson Main

This style shall be a square form, and shall be applicable to all parking lots in all character areas located within Peterson Main. Lighting for this style shall have the following characteristics:

Style PL-1	
Lamp Type	High Pressure Sodium
Fixture Mounting	Single mount at poles located along the perimeter of parking lots and along service drives, and double mount at poles locate at the "interior" of parking lots
Pole Type	Type P-2, dark bronze anodized finish. Fixture mounting height shall be twenty-five feet (25') (7.62 m), and pole spacing shall be as required to produce the minimum recommended lighting level
Fixture Type	Type B-2, dark bronze anodized finish
Base Type	Type B-2 for poles located along the perimeter of parking lots and in all locations where parked vehicles are not a hazard to the pole. Type B-3 for poles located at the interior of parking lots, and in all locations where vehicles will be parking close to the pole
Recommended Lighting Level	2.0 minimum average maintained horizontal footcandles (21.53 lx)

Style PL-2 - Peterson East

This style shall be a round form, and shall be applicable to all parking lots in all areas of Peterson East. Lighting for this style shall have the following characteristics:

Style PL-2	
Lamp Type	High Pressure Sodium
Fixture Mounting	Single mount at poles located along the perimeter of parking lots and along service drives, and double mount at poles locate at the "interior" of parking lots
Pole Type	Type P-3, clear anodized finish. Fixture mounting height shall be twenty-five feet (25') (7.62 m), and pole spacing shall be as required to produce the minimum recommended lighting level
Fixture Type	Type F-9, with a clear anodized finish
Base Type	Type B-2 for poles located along the perimeter of parking lots and in all locations where parked vehicles are not a hazard to the pole. Type B-3 for poles located at the interior of parking lots, and in all locations where vehicles will be parking close to the pole
Recommended Lighting Level	2.0 minimum average maintained horizontal footcandles (21.53 lx)

print

site elements

bollards

Introduction

Bollards shall be used throughout the base to control and direct vehicular, pedestrian and bicycle traffic. Bollards shall be standard designs according to the Character Area in which they are located. Four principal bollard styles have been developed.

The typical purpose for bollards is to control and direct vehicular traffic. Non-illuminated bollards shall be used to this end; illuminated bollards shall be implemented for pedestrian and bicycle traffic applications.

Typical Locations

Typical locations of bollards shall include, but not be limited to, the following general list:

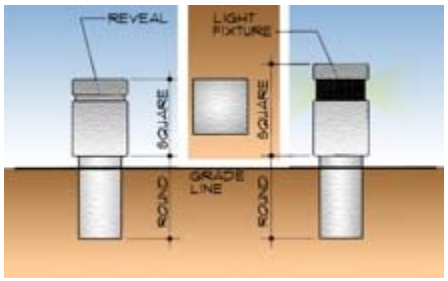
- Vehicular control adjacent to access drives and parking lots, including prevention of vehicles from parking upon landscaped areas.
- Pedestrian traffic control along their respective paths. Bollards are especially useful at pathway intersections and similar areas where pedestrian traffic tends to spill onto adjacent landscaped areas.
- Bollards shall be used at memorials, monuments and static displays to separate circulation systems from the displayed objects where necessary.
- Bollards shall be used to surround and physically separate miscellaneous utility housings and related items where necessary.

Bollard Design Styles

A total of five separate bollard styles shall be provided on a character area basis. These styles are described on the following pages.

Style 1

Style 1 bollard shall be used for all applications in Character Areas 1 - Headquarters, 2 - Community Center, 3 - West Gate, 4 - Industrial, 5 - Southwest, 6 - Central, and 7 - Golf Course. Style 1 bollards shall have the following design characteristics:



style 1 - bollard

- Illuminated or non-illuminated bollard.
- Precast concrete construction, with a smooth stained finish in Weatherstone Grey color.
- Square design, rounded outside corners.
- At illuminated bollard, light fixture is positioned at the reveal. Light fixture is a stainless steel (mill) finish at Character Area 1, and painted finish to match SW 2733, Chaparral (BGY); FSC X0045, at all other character areas covered by this style. Use a 100W High Pressure Sodium bulb.

Manufacturer: Material, Inc

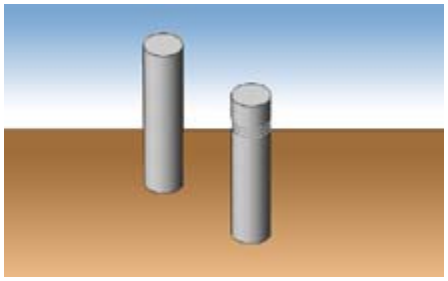
Model: 1852 Bollard (Square)

Phone Number: 303-458-9595

Other manufactures, that meet the above requirements, are acceptable if approved by the Contracting Officer.

Style 2

Style 2 bollard shall be used for all applications in Character Area 7 - Golf Course, Character Area 9 - Family Housing, and other parks and recreation areas throughout the other Character Areas. Style 2 bollards shall have the following design characteristics:



style 2 - bollard

- Illuminated or non-illuminated bollard
- Extruded aluminum housing with a natural aluminum finish
- Eight inches round with flat top
- At illuminated bollard use a gasketed, fluted, glass enclosure with louvers and a 100W High Pressure Sodium Bulb

Manufacturer: Monarch

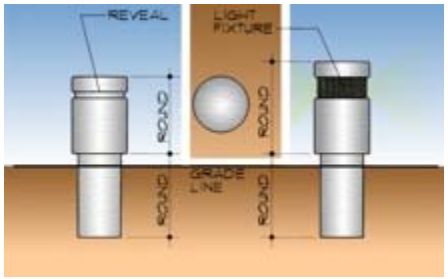
Model: Architectural Bollard KBR8

Phone Number:

Other manufactures, that meet the above requirements, are acceptable if approved by the Contracting Officer.

Style 3

Style 3 bollard shall be used for all applications in Character Area 8 - Peterson East. Style 3 bollards shall have the following design characteristics:



style 3 - bollard

- Illuminated or non-illuminated bollard.
- Pre-cast concrete construction, with a smooth finish in Weatherstone Grey color.
- Round design.
- At illuminated bollard, light fixture is positioned at the reveal. Light fixture is a stainless steel (mill) finish. With a 100W High Pressure Sodium bulb.

Manufacturer: Materials, Inc

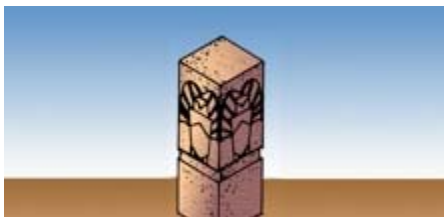
Model: 1852 Bollard (Round)

Phone Number: 303-458-9595

Other manufactures, that meet the above requirements, are acceptable if approved by the Contracting Officer.

Style 4

Style 4 bollard shall be used for all applications in Character Area 10 - Historical. Style 4 bollards shall have the following design characteristics:



- Non-illuminated bollard.
- Pre-cast concrete construction, color to match

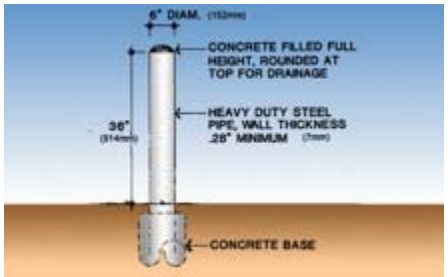
glazed terra-cotta fascia of terminal building.

- Surface shall be cast and finished smooth to match terminal building fascia.
- Each side of upper half of bollard to be cast with a facsimile of the stylized bird at terminal building entrances; lower half to be square with eased corners.
- A light fixture version may be used, such that the light is located in the reveal portion of the bollard.

style 4 - bollard

Style 5

Style 5 safety bollard shall be used for all Character Areas where a more industrial-use bollard is required. Use typically at locations such as garage door openings, around utility components above ground, and similar applications. Use receiver/key switch equipped bollards where required. Style 5 bollards shall have the following design characteristics:



- Non-illuminated bollard.
- Steel well-casing construction, 6” (152.4 mm) diameter, paint color to match Standard Light Brown (PMS #168c).
- Fill with concrete and provide rounded top for proper water drainage from bollard top.
- An alternate bollard style: same as above except provide 1” (25.4 mm) rigid conduit and box with shroud at top for bollard with a receiver/key switch application.
- Dimension 6” (152.4 mm) diameter with 36” (914.4 mm) exposed above ground, typical all applications.

style 5 - bollard

print

site elements

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communications

Codes, References, and Guidelines

- NFPA 70 - National Electrical Code
- AFMAN 33-221 - Communications Security: Protected Distribution System (PDS)
- ANSI C-2 - National Electrical Safety Code
- ANSI/EIA/TIA 526 - Optical Power Loss Measurements of Installed Single-mode/Multi-mode Fiber Cable Plant
- ANSI/EIA/TIA 568-A - Commercial Building Telecommunications Wiring Standards
- ANSI/EIA/TIA 568-B - Commercial Building Telecommunications Cabling Standards
- ANSI/EIA/TIA 569 - Commercial Building Standards for Telecommunications Pathways and Spaces
- ANSI/EIA/TIA 604 - Fiber Optic Connector Intermateability Standards (FOCIS)
- ANSI/EIA/TIA 606 - Building Infrastructure Administration Standard
- ANSI/EIA/TIA 607 - Grounding and Bonding Requirements
- ANSI/TIA/EIA 758 - Customer Owned Outside Plant Telecommunications Cabling Standard
- Peterson Air Force Base C4I Blueprint
- Draft ETL 01-17 - Communications and Information Systems Criteria

Project Requirements

The communications' requirements for any project shall be determined at the beginning of the project. The 21 CS (Communications Squadron) shall be coordinated with to determine all the requirements to include telephone, 21 NET, fire detection, EMCS, intrusion detection, etc. All requirements shall be documented and fully designed into the project.

Protection Distribution System (PDS)

Refer to Air Force Manual 33-221 for PDS requirements.

Base Distribution System

Fiber

The base owns virtually all of the fiber optic systems on base. Fiber optic cable is not part of the facilities projects unless indicated otherwise. 21 CS is responsible for installing fiber and copper to the facility.

Conduit

The conduit and manhole system is part of the project. A minimum of two, four inch concrete encased conduits shall be provided from the nearest manhole to the building. The concrete encasement shall be 20 centimeters (8-inches) in all directions, and the top of the ductbank shall be a minimum of one meter below grade. Provide a AWG #6 bare copper tracer wire within the cement encasement, and ensure marking tape is placed a minimum of 50 centimeters (18 inches) below grade above the ductbank. Each conduit shall be populated with three, 1 ¼" (32 mm) innerducts. Empty innerducts shall be provided with a 200 lbs test nylon pull string. The 21 CS may install the fiber via direct bury. In such case conduit shall be installed only to the outside of the facility and marked.

Manholes

All manhole/handhole size determinations will be coordinated with the architecture section of the 21st Communications Squadron. Also, ensure all manhole/handhole covers are marked with the word "Communications" on the front cover. A ground rod shall be installed in each

manhole.

Facility Communications Rooms

Size & Location

Consult the 21 CS during the charrette or early floorplan stages for determining the communications room size and location requirements. At least one communications room is required per facility and per floor. No communications room will be located more than 90 meters from any serviced device. The communications room must be large enough to support a standard 19” equipment rack, a fiber optic distribution panel, and punch down blocks. Communications rooms will be sized based upon the square footage of the facility. The minimum size for a communications room shall not be less than 8ft x 6ft. Reference ANSI/TIA/EIA 569 standards for recommended sizes.

Construction Requirements

The walls of the communications rooms shall be covered by ¾” plywood, with fire-retardant paint, from floor to ceiling. All communication cabinets and racks shall be bolted down to the floor and have one meter (36-inch) clearance, front and back from nearest obstacle. The flooring shall be covered with an anti-static material.

Provide appropriate means of cable management within communications rooms to create a neat and professional installation. Provide a minimum of 20 ft of slack for all cable types. The slack must be neatly managed on trays or other support types.

Grounding

All communications rooms shall have an insulated #6 copper ground wire running to a ground rod and bonded to the facility ground electrode system according to the NEC Article 250. Avoid ground loops if possible. Facilities with multiple communications rooms shall have all rooms grounded together per ANSI/EIA/TIA 607.

Equipment racks and associated cable trays/ladders shall be bonded to the building grounding system. Grounding and bounding shall meet the requirements outlined in the National Electrical Code (NEC) as well as conform to standards stated within ANSI/TIA/EIA 607.

Punchdown Blocks

All punchdown blocks shall be of the AT&T 110 style with the appropriate category rating. All house cable shall be terminated on the house side with spares as indicated by the 21 CS.

Minimum Equipment Sizes and Power Requirements

Provide at least two dedicated 30A, 120V double duplex electrical receptacles within each communications room to support communication equipment. Provide one dedicated 30A, 208V receptacle for telephone switch support, if applicable.

HVAC Requirements

Numerous pieces of electrical equipment are installed in communications rooms. The equipment must be operated within a specific temperature range. The 21 CS can give specific temperature ranges for their equipment. The HVAC system shall be provided on a 24 hours-per-day, 365 days-per-year basis to meet the equipment temperature/humidity operational requirements.

Facility Communications Standards

Construction Requirements

The construction contractor shall provide all rough-ins, devices, faceplates, and terminations for all communications interior wiring. Minimum conduit size for interior communication cables shall be ¾".

Refer to ANSI/TIA/EIA 569 standards for all communication/electrical separation requirements.

Telecommunication outlets shall be spaced every 10 ft within any office space, unless otherwise directed.

All communication cables shall be labeled on both ends (patch panel/110 punch down block end, as well as wall/floor jack end).

Conveyance (ladder racks, cable trays, conduit, etc.) shall be used to support horizontal and vertical cable runs. Cables routed in suspended ceilings shall not be draped across the ceiling tiles. Cable supports shall be mounted a minimum of six inches above the ceiling grid supporting the tiles.

Wiring Topology

Star topology shall be used for all interior communication wiring from the communications rooms to the voice and data jacks. Each data jack shall have a dedicated Category (CAT) 5E plenum-rated cable run to the 19-inch rack located in the communications room for fiber interconnection. The construction contractor shall provide all jack connections and connectors in the communications room. Each voice jack shall have a dedicated CAT 5E plenum-rated cable to the wall-mounted 110 punch down blocks located in the communications room. The construction contractor shall provide the 110 punch down blocks and all connections. 110 punch down blocks need to be ANSI/TIA/EIA 568-A CAT 5E compliant.

Conductors

Use 8 conductor, cat 5e, 3, or Twisted pair as directed by the 21 CS. The maximum run for any cable is 300 feet in all dimensions (not just plan view). All interior communication wiring shall be wired in accordance to ANSI/TIA/EIA 568-B standards as well as tested for compliance outlined in ANSI/TIA/EIA 568-A.

Jacks

RJ-45 jacks (one voice/two data) shall be provided for all voice and data terminations unless otherwise noted by the architecture section of the 21st Communications Squadron.

Secure Voice

Secure Voice communications have specific requirements that will be discussed during the planning stages of each project.

When fiber is used for secure and unclassified data, provide different types of end terminations to prevent accidental security breaches.

Pre-wired Systems Furniture

Each pre-wired workstation shall have a minimum of one (1) voice and two (2) data drops on a single outlet. The construction contractor shall provide all wiring required to feed each jack in the systems furniture. The furniture contractor shall provide the jacks and final connections in the furniture.

Cable Television (CATV)

Plenum-rated, quad-shielded RG-6 cable with F-type connectors shall be run from each CATV outlet to the CATV patch panel located in communications room. A 2½-inch, rigid galvanized steel (RGS) conduit shall penetrate through roof and be capped at the end. The location of penetration will be determined by the architecture section of the 21st Communications Squadron.

Utility Service Interruptions

All interruptions shall be in accordance with the specification section 01100 of the general specifications. Interruption of service for HVAC, Power, Lighting, Telephone, Fire Protection, Fire Detection, Water, Sewer, Gas, Roads, and Parking Lots are considered outages. All scheduled power outages shall be scheduled at least 2 weeks prior to desired time.

Temporary Power

Temporary power connection plans shall be a construction submittal requirement to be included in the AF Form 66. The specifications shall instruct the construction contractor to submit the outage plan and shop drawings with verbiage describing the connection to 21 CES for approval. Under no circumstances shall a temporary power connection risk injury to base electricians, personnel, or reduce the reliability of power on the base.

All temporary connections, when tied to base facilities, will be connected by base personnel after the system is inspected. All temporary power cables, conduits, etc shall be removed at the end of the project.

Particular attention shall be given to the primary distribution system (12470V) and larger facilities.

print

engineering design guide

window coverings

Fire Code Requirements
Vertical blinds
Horizontal Blinds
Draperies

General:

- Use window coverings that enhance the overall design scheme and meet the functional requirements.

- All interior windows and/or per user's requirements are to have a window covering.

    - This does not necessarily mean storefront door systems used at interior office entrances off a corridor.
    - There are some exceptions for such facilities as youth and child care centers, which are bound by law.
    - Assess needs with the users.

- All exterior windows are to be blockable or security film applied for glass containment to meet Force Protection.

    -There are extensive requirements for all types of facilities, including lodging/Temporary Lodging Facilities (TLF's).

- Dorms/Lodging users are meant to sleep in darkness and people are on different shifts, allow for room darkening.

    - Black out capabilities shall be provided.
    - This could include providing a top cap for draperies.
    - Shall use dark colored blinds.

- Maintenance, industrial and laboratory areas are to use blinds and not draperies, as they are easier to clean and maintain.

- Areas that receive direct, high intensity natural light should consider a blind or window covering with a window film that cuts out the glare but still allows natural light to filter in.

- Conference rooms with windows

    - Blackout capabilities are necessary.
    - Pleated shades that pull up are great but many times if they are the only window treatments there is a large amount of glare when open.
    - Possibly use a sheer or something that can break the glare for when the draperies are open.

- Many conference rooms have a curtain at the presentation end of the room. This is to cover a marker board or a wall mounted screen.

    -These are best when motorized

Fire Code Requirements

- When required by specific occupancy chapters of **NFPA 101**, draperies, curtains and other similar loosely hanging furnishings and decorations shall be flame resistant **NFPA 701**.

Horizontal Blinds:

General:

- Highly recommended for most applications.

- Shall be made for commercial use.

- Many options in either a basic metal (plastic not allowed) or a hard flat slat.

- Hard flat slats will not bend as the metal slats. This could be especially better for a dorm or lodging facility. They are also a home like product, which would maintain that affect if desired.

- Basic standard, 1” slat, but not required.

- There are also many different widths of slats, which can create a dramatic affect if wanted.

- Controls can be specified and located on a particular side, however, it is standard to have one of the two controls on each side of the individual treatment.

Specifications:

- ***Operation:*** Manual

- ***Headrail:***

  - Channel-shaped section fabricated from:

    - Minimum 0.025" (1 mm) thick roll-formed corrosion-resistant steel
    - With rolled edges at top
    - Equipped with end braces

- All hardware required for operation of blind at headrail to be enclosed in metal head.

- Finish of rail to be in same color as slats unless otherwise indicated.

- Overall strength of headrail profile shall provide smooth operation, even under heavy loads associated with large window applications.

- To be machine-clinched, ensuring accurate alignment of moving parts and long, maintenance-free operation.

- ***Bottom Rail:***

- Fabricate from steel with rolled edges.

- Contour section to match slat curvature.

- Provide metal or plastic end closure caps, of same color as rail.

- Finish rail in same color as slats unless otherwise indicated.

- ***Slats:***

- Spring-tempered aluminum salts, alloyed for maximum strength, with forming burrs removed.

- Slat thickness and ladder support distances adequate to preclude visible sag or bow after continued use.

-Shall ensure tight closure and optimum light control.

- Metal thickness: .0085” minimum

- For 1" (25 mm) wide slats, lengths as required not to exceed 142" (3,607 mm).
- other components sized to suit.

- ***Ladders:***

- Construction designed to support and maintain slat at proper spacing and alignment in open or loosed position.

- For 1” slats the distance between slats shall not exceed 15.7 slats per vertical foot.

- ***Braided Polyester Cord:***

- Fabricate of not less than 0.045" (1 mm) or no more than 0.068" (1.73 mm) diameter.

- Integrally braided ladder:

    - Runs of not less than 4 threads
    - Space ladders no further than 24" (610 mm) apart and no more than 7" (178 mm) from ends of slats

- ***Tilting Mechanism:***

- Provide:

    - Low friction gear tilter
    - Drum and cradle at each ladder
    - Tilt rod
    - Tape clips
    - Grommet guides to prevent wear on ladder and cords

- Mechanism designed to hold slats at any angle and prevent movement of slats due to vibration.

- ***Wand Operation:***

- Detachable, clear plastic wand of appropriate length to suit blind installation and to provide convenient operation.

- ***Lifting Mechanism:***

- Crash-proof cord locks with cord separators

- Braided polyester cords fitted with pulls.

- Include cord equalizers of self-aligning type designed to maintain horizontal blind position.

- ***Installation Brackets:***

- Provide prefinished metal mounting brackets designed to facilitate removal of headrail.

- Provide intermediate brackets at spacing recommended by manufacturer.

- Include hardware necessary for secure attachment of brackets to adjoining construction and headrails.

- Provide brackets adequate to support the weight of blind assemblies plus force applied to operate blinds, with mounting holes located to accommodate either horizontal or vertical mounting.

- ***Finish:***

- Provide standard factory applied finish system.

- Provide chemical conversion coating followed by baked-on synthetic resin enamel finish coat.

- ***Fabrication:***

- Prior to fabrication, verify actual opening dimensions by site measurements.

- Do not proceed with fabrication until unsatisfactory conditions have been resolved.

- Adjust dimensions for proper fit at openings.

- Cooperate with other trades for securing headrails to substrates and other finished surfaces.

- Fabricate from noncorrosive materials, which do not require lubrication during the normal expected life.

- Fabricate blind units to completely fill the opening from head to sill and jamb to jamb.

- For continuous installations, fabricate blind units so that breaks between units occur only at mullions or other defined vertical separation.

- Space blind slats to provide overlap for light exclusion when in fully closed position.

- Equip horizontal louver blind units with the following operations:

- Full-tilting operation with slats rotating approximately 180 degrees.

- Place tilt operating controls on left side of blind when facing blind unit.
- Exceptions may occur due to unique location of window, etc.

- Height rising, with lifting cord locks for holding blind at any point of travel.

- Place pull cords on right side of blind when facing unit.

- ***Installation:***

- Shall be inside mounted unless window is not deep enough.

- For inside mount, face of valance and front edge of the slats when open shall be flush with edge of mullions.

- ***Color/Finish:***

- Typically match window mullion color. Such as anodized bronze or brushed aluminum.

Vertical Blinds:

- Not recommended.

- Commercial grade only.

- Tend to be an appropriate choice for very large/tall windows (but not limited to).

- Typically sized in 2” to 3” wide slats.

- To be inside mounted unless only if they are not able to be.

- Operation mechanism to be either:

- Automatically rotate to the open position when the traverse cord is pulled and continually pulled in the same direction.
- Have a single wand, which opens and closes the vanes as well as glides them along the track to traverse the blinds.

- This is especially a desirable safety feature which eliminates vane jams.

Draperies:

- All draperies are to be lined with like fabric weight as the face of the drapery,

- Lining to matching drapery style, such as pleated.

- All draperies are to be weighted at the bottom for proper hanging.

- An inner lining can be used.

- Keeps the light from passing through the fabric.

- This is more professional and hides the inside mechanics of the drapery.
- This is not the same as a black out lining,

- Draperies in executive areas to have a sheer behind the drapery to be more formal and gives glair protection.

- Swags or valances are acceptable in high-level administrative areas but a professional atmosphere shall be maintained.

- All hardware shall be commercial grade, rated for heavy duty.

- Draper fabrics shall meet fire code **NFPA 701** for 100% fire retardant.

- The fabrics for most facilities shall allow machine washing.

  - Exceptions might be for top administrative offices or the clubs.

- Draperies are designed to be made 2 ½ times fullness.

  - Sheers are to be 3 times fullness.

print

interior design

carpet or carpet tile

- Guidance, Warranties and Requirements
- General Services Administration (GSA)
- Type/Size Requirements
- Quality Considerations
- Sustainability
- Cushions/Padding
- Meet ADA
- Office/Administrative Spaces
- Specialty Carpet
- Removal and Disposal

back to flooring

Guidance, Warranties and Requirements:

ETL 00-6 Air Force Carpet Standard – required to follow, exceptions approved only by BCE. HQ AFCEE Carpet Selection Handbook.

General Services Administration (GSA):

- All carpet shall be either:

  - On a GSA contract
  - Will be on a GSA contract at time of completed construction

- It may be put in the construction contract that the carpet is purchased on the GSA contract and that price therefore is passed on to the government.

- Some facilities might require carpet to be on a NAF contract.

Type/Size Requirements:

- Preferred Products:

  - Carpet tiles
  - 6' rolled goods

- Broadloom or 12' wide goods are to have an attached cushion and shall be approved by BCE.

- Executive offices that are entirely solid carpet:

  - Carpet shall be 6' or 12' rolled goods.
  - Carpet tiles are not acceptable

Quality Considerations:

- Multiple carpets in a space:

- The overall carpet height shall be close enough to no be a tripping hazard.
- Different height carpets next to each other are inappropriate.

- Carpet appearance and durability:

- Brand name continuous nylon fibers will wear better and provide more resilience than those made from polyester, acrylic, or olefin fibers.
- Both fiber and yarn construction affect the luster, dyeability, and crushability of carpets.
- Staple fibers are not allowed.

- Specifying:

- Shall be specific about tests, warranties, construction, and product requirements.
- When specifying a particular pattern/color:
- All salient characteristics shall be clearly defined.
- Include a description of the color intensity and the hue.
- Include a description of pattern's size and shapes.
- Explain what other finishes the carpet is to coordinate with.

Sustainability:

- Printed pattern use is highly discouraged due to a high level of water used during manufacturing process.

- Many options and new technology always changing. Shall researched and used to best fit needs.

- Considerations include:

- Recycled content: either industrial waste &/or post consumer waste
- Recyclability
- Yarn fiber type and dye method
- Cushion/padding material will extend the carpet life
- Expected life cycle for carpet as a whole

Cushions/Padding:

- All carpet shall have an attached cushion/padding such as on carpet tiles or an added attached cushion/padding such as on a 12' rolled goods
- This includes the temporary living facilities (TLF's) and Dormitories.

- See the **Air Force Carpet Standards** for specifics

- The use of a separate cushion/padding shall be approved by BCE.

- Recycled content options shall be considered first. Only if the quality does not meet requirements can the non-recycled content options be considered.

Meet ADA:

- Shall meet all requirements.

- Maximum pile thickness shall not be more than ½" thick.

Office/Administrative Spaces:

Use and Selection:

- The following information applies to many types of facilities:

    - Offices including:

        - Whole office buildings
        - Office space within buildings that otherwise have a specialty carpet

    - Childcare centers
    - Auditoriums – possible exceptions
    - Fitness centers
    - Clinics

- Carpet/carpet tile is to be used throughout most facilities. Unless functional requirements dictate otherwise.

    - Exceptions are:

        - Service areas
        - Maintenance and industrial areas
        - Laboratories
        - Food preparation areas
        - Restrooms
        - Vestibules
        - Areas requiring frequent cleaning.

- Carpet on stairs is not recommended. Other more durable material should be used.

- Select carpets based on a large sample viewed from the floor. Looking at a sample up close does not appropriately represent it's appearance.

- See below information for additional selection guidance.

Solid Colored Carpet:

- To be used sparingly.

- Shall be installed so the "hand" is of same direction.

- Percentage guidance for solid accent carpet use:

    - In a low traffic, high visible space such as a conference room or commander's suite, use approximately **30-45% maximum** of the carpet as solid carpet.
    - In a high traffic space such as a youth center, corridors or lobby, use approximately **10-25% maximum** of the carpet as solid carpet.
    - This does not mean every space is to have solid carpet.

- Use solid colored carpets for the entire room only in:

    - Top executive offices
    - Courtrooms
    - Chapels
    - Housing
    - DV type lodging facilities

-Entire room or large accent use:

    - Carpet tile is not acceptable.
    - 6' or 12' rolled good is to be used.

- Solid colors as an accent can be used in:

    - Corridors
    - Conference rooms
    - Executive suites
    - Lobby/waiting areas
    - Any large open space that needs to be broken up (except in open office rooms filled with systems furniture).

- Designs are to be creative and not over done. Typically solid accents are designed as a border around the room or as an inset solid space or boarder. This is used too often and other designs shall be created for better quality spaces.

- They can be used to define a space and create an in/formal atmosphere as desired.

Pattern Selection:

- Patterned carpets help to "mask" soiling in traffic areas.

- New pattern technology in carpet tiles have been created that can be used together to define a space as accents without using solid colored carpets. This is the preferred way to design but not a requirement.

    - These new designs have multiple coordinates that blend together without a drastic difference such as with a solid next to a pattern.

- Only patterned carpets with distinguishable designs

    - No muted patterns that are close to looking solid.

- Three or more colors, not shades of the same color.

    - Exception for solid accent colors.

- Avoid:

    - Light colors
    - Trendy patterns
    - Subdued tweeds
    - Stripped patterns, especially in a 6' or 12' rolled good.

- Carpet tiles with a soft stripe may be used.

    - Shall quarter turn the tiles.

Design & Selection Criteria:

- Developed standard options.

    - Based on color.

        - To include:

            - 1 basic/general pattern
            - 2 bold patterns
            - 2 solid colors

- Option's use based on desired scheme per building, not per building type as previous FEP.

    - Not all patterns are to be used in every building.
    - Building/space function will determine which pattern(s) will be used.
    - Examples: In a hanger the office areas would only use the basic pattern. A larger building that has an administrative office area, open office area, and a conference room would use one basic pattern, one bold pattern, and one solid color.

- Designing for new facilities:

    - Prefer to use an existing base standard but not required.
    - User and BCE are to determine if the standard options are not desired.
    - If not using a base standard

        - Only a maximum number types of carpet may be used:

            - 1 basic/general pattern
            - 2 bold patterns
            - 2 solid colors

    This does not mean that there should be 5 different carpets in every building but that it is the maximum allowed.

Standard Option Criteria and Uses:

- **1 basic/general pattern:**

    - Pattern definition:

        - Typically a random non-descript pattern or a small simple pattern
        - Can be a large pattern as long as the two bold patterns are more distinctive.

    - Intended use locations:

        - To be used throughout in general as an overall standard.
        - Primarily used in all facilities.

    - Surface Texture Options:

        - Loop Pile – Level or Unlevel

- Tip Sheered Loop Pile

- **2 bold patterns:**

- Pattern definition:

- Distinct pattern either random or symmetrical.
- Pattern size, medium to large

- Intended use locations:

- Executive suites
- Conference rooms
- Lobby/waiting areas
- Corridors

- Used to set apart a space or to break up a large space such as a corridor or large training room.

- Not necessarily used in every building.

- Smaller buildings may only need one pattern
- Larger buildings may use two patterns
- Some buildings may not use a separate pattern other than the basic, such as an industrial type facility.

- Surface Texture Options:

- Loop Pile – Level or Unlevel
- Tip Sheered Loop Pile

- **2 solid colors:**

- Pattern definition:

- Should be nondirectional.
- Some loop carpets may have a striped affect.

- Intended use locations:

- Accents
- Entire rooms
- See **Solid Colored Carpet** for a more detailed explanation.

- Surface Texture Options:

- Loop Pile – Level or Unlevel

- This is not preferred for the solid carpet option.

- Tip Sheered Loop Pile

- Cut Pile

Specialty Carpet:

- Facilities/spaces that may have a plush hospitality carpet.

  - Clubs
  - Lodging/dorm rooms including TLF's
  - Dining rooms
  - Housing
  - Museum
  - Chapel sanctuaries

- These can be either patterned or solid carpets depending on facility/use.

- Generally these carpets are 12' rolled goods.

- May have companion or coordinated borders and patterns.

- Recommend carpet layout be professionally designed when using borders and patterns associated with hospitality type carpets.

Removal and Disposal:

- In accordance with EPA guidelines, include in the overall waste management plan of a project:

  - Reduce landfill
  - Provide for carpet demolition and installation waste handling

- When feasible, all disposal of carpet and carpet installation waste is to require a certification that the products were not deposited in a landfill.

- There are carpet reclamation centers in most major cities.

  - Costs for using these centers compare favorably with landfill costs.
  - Many companies have a program that they will take back demoed carpet and recycle it at their cost. However the demoed and new carpet shall be their carpet.

back to flooring

print

interior design

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artwork and wall displays

General:

- Details such as artwork can make or break a facility/space. It shall not be considered lightly or left until the end of a project. It takes time to research, coordinate, and obtain approval.

- Artwork is not only framed pictures, but can also be 3-dimensional type art like:

    - Sculpture
    - Glass
    - Graphic banners
    - Wall textiles
    - Wall murals.

- Artwork for a building should be purchased by the AF for public spaces and common areas. This includes:

    - Waiting/reception areas
    - Lobbies
    - Corridors
    - Conference rooms
    - Break rooms
    - Lodging rooms
    - Recreational areas

- Artwork to be left up to the occupant:

    - Individual offices
    - Dormitory rooms
    - Workstations

- Selection and placement of artwork and other wall hangings is critical to the final quality of the space.

- Some artwork should be selected to add vitality through color compatibility with the scheme of the building.

- Consistency is important but creativity is also essential for good design. Such as in a lobby or reception there may be a different concept of framing, matting, or displaying the desired artwork or symbols than the building's standard. This shall be approved by the BCE.

Hanging:

- Three point security hanging mechanisms are highly recommended on any artwork located in areas where there may be a tendency to be pilfered or bumped out of place.

    - This is not appropriate for locations that items are changed out often since three holes are made.

- All artwork shall be attached to the wall in a manner that keeps the piece straight and aligned. Artwork should be mounted at eye level of an average height person, such as 5'-9" to 5'-11".

Layouts/Locations:

- All pieces to be placed in locations with specific lines of view where they can be noticed and provide a useful purpose.

- Rows of wall hangings down a straight corridor serve only to accentuate the length and tedium of the corridor. Selecting only a few locations down a corridor to hang one or a grouping is more appropriate.

- There are some exceptions but they have to be designed and hung correctly.

Size:

- Size is crucial for using the visual space appropriately.

- Too large or too small will easily ruin the purpose of having the artwork.

Lighting:

- Lighting positioned to highlight art is an important part of it's display.

- Typical areas to use art light:

    - Lobbies
    - Waiting/reception

- Fixture and bulb is important to consider. This becomes crucial in lobbies.

- Do not put a picture between two can lights, the light creates a shadow down the middle of the picture and is not the desired application.

Consistency:

- Artwork theme, matting, and framing throughout an entire facility should follow set standards.

- A facility with more than one floor or separate wings can change their theme on each floor or wing as long as there is some type of transition.

- Suggestive or controversial subjects are to be avoided

- Photographs of people shall represent all races, genders, and nationalities, which are in the air force.

- Artwork, as opposed to photographs, of people to be at a minimum.
- Native American people in art is widely acceptable when the people are generically portrayed.

Framing:

- Only Black or Aluminum colored frames are allowed.

- Shall be good quality.

    - Corners shall match.
    - Material coloring/finish shall be consistent.

- Style shall coordinate with the entire facility's scheme.

- Such as for a more formal look a thicker frame may be selected while a thin sleek frame may be used for a high tech look.

- All poster pieces to be dry mounted on foam core.

Matting:

- Matting is not always necessary.

- Matting should be consistent throughout a facility. Some areas may be exceptions.

- Not matting can create:

  - A high tech style
  - A casual style like a dorm day room

- Double matting is more formal and should be used accordingly.

  - Double matting may be used for the lobbies and conference rooms.

- Single matting is appropriate for most pictures and locations.

  - Single matting may be used throughout common areas.

Plaques/Awards/Other:

- Prefer to be hung within an organizations office area and not in the corridors.

- Depending upon size, these work best hung in groups.

  - The wood and stain should be consistent throughout a facility.

- **Oak stains are not allowed. Oak wood is prohibited.**

  -Since the intent is to move away from even using oak wood, this shall be approved by the BCE.

- Shall be kept up to date and purposeful.
- For example, it is not appropriate to have a plaque for a group that no longer exists.

Decorative Mirrors:

- Mainly used in the clubs, restrooms at the clubs, or chapel.

- Glass shall be beveled.

- Square frame edges shall be clean cut and match.

Do Not's:

- Do not hang welcome signs, pictures, or plaques that are not consistent with the facility in the common areas.

- Individual groups/offices are not to personalize the entrance to their particular office area.

- The corridors spaces shall be professionally maintained.

- If a more personal reception is desired within the office area, it is allowed but shall be professional.

- Not use items that one would find/use in a residence.

Award and Leadership Walls:

- Designed to represent professionalism and respect for their content.

- May be creatively designed but always with high quality materials.

- All similar displays shall be consistent throughout a facility.

- Always provide appropriate spot lighting.

- They should have either the Air Force wing symbol and/or the group's shield/symbol.

- Nameplates to be changeable or permanent as needed.

- Picture sizes are typically 8" x 10", shall be confirmed by users.

- Number of photos and nameplate information to be determined by user.

- User shall have replacement information for nameplates.

print

interior design

plants

General:

- Interior plants to be used throughout a facility.

- Reasons plants are used:

    - Soften the environment
    - Add noise control
    - Bring balance to a space

- Appropriate size shall be considered per space.

- Live &/or artificial plants may be used within a building. Such as in:

    - Lobbies
    - Waiting areas
    - To break up a long corridor
    - Administrative areas
    - Large break rooms

- Live plants are preferred but shall be maintained well.

- Do not hang plants from ceilings in office/administrative facilities.

Containers:

- Be consistent with style and color for all public/common areas.

- Do not use baskets.

- Moss is to be used to hide dirt or contents.

- Container or it's contents shall be heavy enough to hold plant upright.

- Allow employees to use what they want with discretion.

- Do not allow silly, comical, unprofessional container in public view such as on transaction counters or on top of binder bins.

    - Do allow them to do what they want within their personal space.

Artificial:

- Plants are to be purchased with a flame retardant finish.

- High quality, realistic plants only. Do not purchase from discount sources.

- Try to purchase plants that are indicative to the area. This does not mean to only use cactus or desert plant types.

Live:

- The use should be done with some discretion.

- The use of plants that personnel appropriate from multiple sources presents two major problems.

    - Plants, which have been improperly maintained and have lost their vitality, are no longer assets to the environment.
    - Diseased plants are usually undetectable by the average layperson and can infect all the plans in the building. This occurs when plant materials are brought in from a variety of sources.

- A plant-scaping contractor is an alternative solution, to be decided by facility user.

    - Plant material can be owned by the contractor who will rotate the material when necessary and keep disease under control.
    - Plant material may be owned by the Air Force and the contractor is responsible for maintenance and replacement of diseased or dying material.
    - This option allows maximum value through periodic rebidding of the contract.

- Large portions or the entire base can be handled economically by one contractor.

print

interior design

furniture

- Confirm with purchasing contracting office for UNICOR requirements and procedures.

- Specifications in this chapter provide the minimum standards for furniture procured by the AF.

- A very important feature to consider when purchasing any furniture item is the warranty.

  - Research how each manufacturer deals with their warranties and response time.
  - As a user it is important to use the warranties when a problem arises rather than fix it yourself.
  - When a piece of furniture is altered without the manufacturer's guidance or assistance, the warranty is void.
  - Too many times the AF does not use the warranty to its fullest extent.

- Furniture is a major component both functionally and visually to any interior space.

- Many of the buildings have a collection of mismatched items of varying ages, styles, and condition.

  - This situation provides the greatest negative impact on the interior environment.
  - Broken furniture is to be disposed of.
  - Contrasting styles are not to be located in the same building.
  - Mismatched files are to be banked together, in locations visually remote from other matched banks of files.
  - Files can be repainted to match other interior design element.
  - Future procurement should prevent mismatched files from being used in a single space.
  - Furniture with worn fabrics are to be refinished with consistent colors.

- Residential grade furniture and fabrics shall not be used except within the housing itself.

- Generally outdated and worn furniture should be replaced and/or rejuvenated.

- Although furniture can be the most expensive of interior components, increased effort shall be made to acquire only quality-made, durable items, which allow flexibility in the use of space.

- The informed purchasing of furniture is one of the best methods for a command to display concern for budget and stewardship of tax dollars.

- All systems furniture reconfiguration, even if one or two stations are involved, shall be done by appropriate installers.

- Under no circumstances will different system furniture models or brands be mixed.

Fire Codes:

- For textiles and upholstery see **Textiles**.

- **ANSI/BIFMA X5.6-86 Standard for Office Furnishings**

print

interior design

paint and coatings

- Quality
- Gloss Levels
- Gloss Level Chart
- Basic Solid Paint
- Interior Multi-Color Speckled Paint
- Faux Painting

back to wall finishes

General:

- For moist/damp areas an epoxy paint with **MPI Gloss Level 5** will be used.

    - Kitchens
    - Restrooms with showers
    - Laundry
    - Indoor pools
    - Medical rooms

- All interior paints to be lead free

- All interior paint to have no Volatile Organic Content (VOC) or low VOC.

- Provide manufacturer's first quality materials only.

- Apply primers, paints, and glosses in strict accordance to manufacturer's directions.

- Remove items that are not to be painted or provide surface-applied protection for items not able to be removed prior to surface preparation and painting.

    - Such as:

        - Hardware and hardware accessories
        - Plates
        - Machined surfaces
        - Lighting fixture
        - Similar items already installed

- Manufacturer standard colors are to be used.

    - Contractor may use a different supplier than the selected color, just need to match the color.

- Creating custom colors for solid colored paint is not acceptable.

Quality:

-The quality shall be that when cleaned or rubbed it does not leave a burnished mark.

Gloss Levels:

- The Master Painters Institute (MPI), **www.paintinfo.com/mpi/approved/sheen** , gloss levels are the standard that shall be specified, submitted, and used for all interior paints.
- See **Gloss Level Chart** below for specifics.

- Do not use terms such as flat, satin, semi-gloss to explain a gloss finish.

- Gloss and sheen levels tested by **ASTM method D 523**.

- Level uses:

MPI Gloss Levels 1 or 2:

- Not to be used at all.

MPI Gloss Level 3:

- Ceilings only

MPI Gloss Level 4:

- Walls
- Ceilings
- Except for moist/damp areas and areas that need continuous cleaning

MPI Gloss Level 5:

- Doors
- Door Frames
- Metal Surfaces
- Moist/damp Areas
- Areas needing continuous cleaning such as child/youth centers, fitness centers, etc.
- For kitchens both walls and ceilings are to be this level.

MPI Gloss Levels 6 or7:

- Not recommended to be used unless a specific need requires it.
- Shall be approved by BCE.

Gloss Level Chart:

	For Description Only - Do not use these terms	Gloss at 60 degrees		Sheen at 85 degrees
Gloss Level 1	a traditional matte finish - flat	maximum 5 units	and	maximum 10 units
Gloss Level 2	a high side sheen flat - a 'velvet-like' finish	maximum 10 units	and	10-35 units
Gloss Level 3	a traditional 'eggshell-like' finish	10-25 units	and	10-35 units
Gloss Level 4	a 'satin-like' finish	20-35 units	and	minimum 35 units
Gloss Level 5	a traditional semi-gloss	35-70 units		

Gloss Level 6	a traditional gloss	70-85 units
Gloss Level 7	a high gloss	more than 85 units

Basic Solid Paint:

- Usage:

  - Doors
  - Doorframes
  - Walls throughout facilities except where sprayed speckled paint is used/appropriate
  - Gypsum ceilings
  - Repainting stall partitions

- Do not paint:

  - Countertops
  - Ceramic/porcelain tile
  - Over wallcoverings

- Designed patterns can be painted in facilities such as:

  - Fitness centers
  - Indoor pool
  - Clubs
  - Bowling alley
  - Not in office/administrative or lodging type facilities.

- Accent walls can be used to break up a space or add some color without adding too much.

  - This is only to be used sparingly.

Interior Multi-Color Speckled Paint:

General:

- Speckled paint simulates wallcovering without the need to completely replace all wallcovering during maintenance.

- Intended use is to break up large/long wall spaces by brining in multiple colors and a visual texture.

- Not intended for small confined areas, too expensive to maintain.

- Not intended for accent wall use.

- This does not have to be used in every building but is highly recommended.

- Typical use locations:

  - Corridors

- Large conference rooms
- Large training rooms
- Common areas
- Lobby/waiting areas

- Certain spaces are to be higher quality design and either have solid paint or wallcoverings. Such as:

- Top administrative offices
- High visible conference rooms
- Clubs

- Do not use in:

- Small offices/spaces
- Enclosed staircases
- Break rooms
- Restrooms
- Most Service's facilities/spaces
- Areas that need a lot of maintenance such as hangers, child/youth centers, etc.

- Patching or repairing on an individual wall, the entire wall from corner to corner will be repainted, not the entire room/space.

- If it is not used in suggested locations there shall be another design element to break up the space.

Material:

- Durable decorative multicolor spray finish for interior applications.

- Designed for one step applications.

- Requires a knowledgeable applicator and specific spray equipment.

- Products are freezable and heat sensitive and shall be protected from temperature extremes.

- Colors of small droplets of solvent-based paint, in random dispersion, suspended in water.

- Formulated with vinyltoluene-acrylate solubilized in aliphatic hydrocarbons.

- Material Compatibility:

- Provide block fillers, primers, finish coat materials, and related materials that are compatible with one another.

- The substrates indicated under conditions of service and application, as demonstrated by the manufacturer based on testing and field experience.

- Material Quality:

- Provide the best-quality grade of multicolored coatings.

- Materials not displaying manufacturer's identification as a best-

grade product will not be acceptable.

- Apply in strict accordance with manufacturer's recommendations.

Prework Examination:

- Examine substrates to receive multicolored coatings and conditions under which the coatings will be applied to conform to the manufacturer's application requirements.

- Do not begin coating application until satisfactory conditions have been corrected.

Preparation:

- General Procedures:

  - Remove items that are not to be coated. If such items cannot be removed, provide surface-applied protection prior to surface preparation and coating.

    - Hardware and hardware accessories
    - Plates
    - Machines surfaces
    - Lighting fixtures

  - After coating operations are completed in each space or area, reinstall all items removed using workers skilled in the trades involved.

- Surface Preparation:

  - Clean and prepare surfaces to be coated according to the manufacturer's instructions for each particular substrate condition, and as specified.

  - Clean surfaces to receive multicolored coatings.

    - Remove oil and grease prior to cleaning.
    - Schedule cleaning so that dust and other contaminants from the cleaning operations do not fall on wet, newly coated surfaces.

  - Provide barrier coats over incompatible primers or remove the primer and reprime.

  - Notify the architect in writing about anticipated problems if the multicolored coating system is applied over substrates primed by others.

- Primers:

  - Surface shall be clean, dry, and flat without defects.

  - Prime with appropriate primer/sealer/stain killer required for surface to be painted.

- Follow primer manufacture's instruction for use.

- Undercoats that contain shellac, wax, silicones, or sterates may not be suitable.

- Flat finish primer is recommended, either in solvent or water base.

- Recommend tinting the primer lighter than the dominant color of the topcoat.

- NOTE: When in doubt, check intercoat adhesion between primer and topcoat prior to proceeding with application.

- Cementous Materials:

- Prepare concrete, concrete masonry block, and cement plaster surfaces before beginning coating application.

- Remove:

  - Efflorescence
  - Chalk
  - Dust
  - Dirt
  - Grease
  - Oils
  - Release agents

- Roughen, as required, to remove glaze.

- If hardeners or sealers have been used to improve curing, use mechanical surface preparation methods.

- Determine alkalinity and moisture content of surfaces by performing appropriate tests.

  - If surfaces are sufficiently alkaline to cause the finish coatings to blister and burn, correct that condition before application.
  - Do not coat surfaces where the moisture content exceeds that permitted in the manufacturer's printed directions.

- Wood Surfaces:

- Prepare wood surfaces before beginning coating application.

- Remove with scrapers, mineral spirits, and sandpaper, as required:

  - Dirt
  - Oil
  - Other foreign substances

- Sand surfaces smooth and dust off.

- Scrape and clean small, dry, seasoned knots and apply a thin

coat of white shellac or other recommended known sealer before applying a primer.

- After priming, fill holes and imperfections in the finishes surfaces with putty or plastic wood filler.

    - Sand smooth when dry.

- Ferrous Metals:

    - Prepare ferrous metal surfaces before beginning coating application.

    - Clean nongalvanized ferrous metal surfaces that have not been shop-coated.

    - Remove:

        - Oil
        - Grease
        - Dirt
        - Loose mill scale
        - Other foreign substances

    - Use solvent or mechanical cleaning methods that comply with recommendations of the **Steel Structures Painting Council (SSPC)**.

    - Touch up bare areas and shop-applied prime coats that have been damaged.

    - Wire-brush, clean with solvents recommended by the coating manufacturer, and touch up with the same primer as the shop coat.

- Previously Painted Surfaces:

    - Prepare previously painted or coated surfaces before beginning multicolored coating application.

    - Remove:

        - Flaking paint
        - Other contaminants

    - Clean chalking and dusting surfaces that interfere with coating adhesion.

    - Repair holes or cracks with an appropriate patching compound and spot prime.

    - Sand surfaces smooth.

Cleaning:

- At the end of each workday, remove empty cans, rags, rubbish, and other discarded coating materials from the site.

- Remove multicolored coating splatters from adjacent surfaces not intended to be coated.

Protection:

- Protect work of other trades, whether to be coated or not, against damage caused by multicolored coatings.

- Provide temporary closure to confine spraying operation and to prevent polluting surrounding environment.

Application Equip ment:

- For easier maintenance by the government, the following requirements shall be used by all contractors:

- Required to use a CAPspray model CS10,000 HVLP sprayer.

- Shall use projector set #5.

- Required spray tip: a self-cleaning reversible fan tip 517.

Clear Coat Finish:

- Shall have a clear topcoat installed.

- Gloss level to meet **MPI Gloss Level 4**.

- Shall use a water born clear acrylic polyurethane clear coat.

Submittals at Completion:

- Contractors shall submit all installation information at time of completion.

-This is a requirement used for maintenance purposes.

- Required information:

1. Specific multi paint used, to include manufacturer, product type, and product number.
2. Background formula used.
3. Type of application equipment used.
4. Spray tip size.
5. Nozzle distance from wall.
6. Pressure gage setting.
7. Arm motion method for spraying.

- **Faux Painting:** Not allowed.

back to wall finishes

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interior design

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TEXTILE

fire code requirements

- Draperies: NFPA 701
- Upholstery: California 117, by ACT standards
- Panel and Tack Board Fabrics: UBC Standard 8.2 conducted by an independent testing laboratory, tested using a product mounting system, including adhesive, representative of actual use.

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TEXTILE

material types

- Upholstery
- Panel System Fabrics
- Tackboard Fabrics

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Upholstery:

- Consider the wearability and abrasion testing when selecting upholstery.

- An industry standard for test wearability is the Wyzenbeck test, measured by "**double-rubs**" (DR).

- All upholstery manufacturers shall be able to provide testing information.

- Areas with high probability of staining:

  - Use a patterned fabric & stain resistant fabrics.
  - Crypton fabrics are most appropriate for this use.
  - The pattern will help hide the stain.
  - Do not use a solid colored fabric for large items of furniture as it will show staining and wear.

- Content recommendations:

  - 100% solution dyed nylon (SDN)
  - Nylon
  - Crypton
  - Teflon finish
  - Polyesters
  - Wool, only to be used for low traffic and higher management locations
  - Do not use: cottons, rayon, silk, cellulose based materials

Desk and Task Seating:

- The fabric shall be fire-resistant.

- Fabric shall be Grade 3 or better.

- Fabric Type: Nylon or polyester with Teflon or Scotchguard protective coating.

- Fabric will be selected at time of bid award.

Fire Codes

- Upholstered furniture:

  - Resistant to a cigarette (smoldering) ignition **NFPA 260**, **NFPA 261**, and **CFR 16** Part 1632 unless fully sprinklered
  - Limited rates of heat release when tested **NFPA 266** or **ASTM E1590** as applicable unless fully sprinklered.

Panel System Fabrics

- Select patterns and colors that are not bold or busy.

- Abrasion and cleanability are important factors in selecting.

- No double rub requirements listed but if used in a high traffic area this may be a concern.

- Content recommendations:

  - Either 100% or a high amount of polyester
  - Mix of polyester, polyolefin,
  - Do not use: silk, cotton, wool, rayon, acetate, or nylon

Tackboard Fabrics:

- These fabrics may be selected to blend with the panels or be a larger more decorative pattern.

- Fabric shall be tested and approved for tackable uses.

- Contents: similar to panel fabric.

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TEXTILE

performance guidance

Colorfastness to Wet and Dry Crocking
Colorfastness to Light
Physical Properties
Double Rub Guideline (DR)
Cleaning Codes and Instructions

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Colorfastness to Wet and Dry Crocking:

- Colorfastness is a fabric's ability to retain color in various conditions. Crocking refers to the rubbing of color from a fabric when subject to abrasion.

- APPLICATION PASSES

Upholstery	AATCC 8 Dry Crocking, Class 4 minimum AATCC 8 Wet Crocking, Class 3 minimum
Direct Glue Wallcovering	AATCC 8, Class 3 minimum
Panels and Upholstered Walls	AATCC 8, Class 3 minimum
Drapery	AATCC 8, Class 3 minimum

-Rating range:

Class 5 = no transfer
Class 1 = high degree of transfer

Colorfastness to Light

- Colorfastness to light refers to a fabric's ability to resist fading when exposed to light. To measure for colorfastness to light, the fabric to be tested is exposed under specific conditions to a controlled light which simulates the sun's rays at an accelerated rate. At timed intervals, the test swatch is compared to standard scale and the degree of fading is rated.

- Application passes

Upholstery	AATCC 16A or AATCC 16E Class 4 minimum 40 hours
Direct Glue Wallcovering	AATCC 16A or AATCC 16E Class 4 minimum 40 hours
Panels and Upholstered Walls	AATCC 16A or AATCC 16E Class 4 minimum 40 hours
Drapery	AATCC 16A or AATCC 16E Class 4 minimum 60 hours

- Rating range:

Class 5 = no fading
Class 1 = high degree of fading

Physical Properties

- There are three tests used to measure the physical properties of a fabric:

    - Brush pill test determines a fabric's pilling.
    - Breaking/tensile strength is the ability of a fabric to withstand tension without breaking or tearing.
    - Seam slippage is the pulling apart of fabrics at the seams.

- Pilling:

    - The formation of fuzzy balls on the surface of a fabric.
    - Occurs when loose fibers in the fabric are worked to the surface after the fabric is subjected to abrasion.
    - The Brush Pill Test uses nylon bristles to rub the surface of the fabric to be tested for a specified amount of time. The amount of pilling that occurs on the surface of the fabric is measured against a visual standard and the fabric is evaluated in a 1 to 5 rating system.

    - Rating range:

        Class 5 = no pilling
        Class 1 = severe pilling

- Breaking Strength

    - Measures a fabric's ability to resist tearing or breaking when subjected to tension.
    - To evaluate breaking strength, the fabric to be tested is gripped by clamps at one end while weight is applied to pull it from the other end.
    - This test is performed in both the warp and the filling directions. The number of pounds required to cause the fabric to break or tear determines the rating.

    - Minimums:

        50 pounds minimum = upholstery
        35 pounds minimum = panel and vertical surface fabrics
        15 pounds minimum = drapery

- Seam Slippage

    - Refers to the condition when fabrics pull apart at a sewn seam.
    - To measure a fabric's ability to resist seam slippage, a standardized seam is sewn in the fabric to be tested.
    - These sewn fabrics are then clamped at one end and pulled by weights at the other end. - This test is performed in both the warp and filling directions. The weight is increased until the seam separates a specified distance. The number of pounds required to cause this separation determines the fabric's rating.

    - Minimums:

        25 pounds minimum = upholstery
        25 pounds minimum = panel and vertical surface fabrics
        15 pounds minimum = drapery

- Application Passes

- Upholstery

  - Brush pill **ASTM D3511**, 3 minimum
  - Breaking strength **ASTM D3597-D1682-64** 50 lb. minimum in warp and weft
  - Seam slippage **ASTM D3597-434** 25 lb. minimum in warp and weft

- Panels and Upholstered Walls

  - Breaking strength **ASTM D5034 Grab Method** 35 lb. minimum in warp and weft
  - Seam slippage **ASTM D3597-434** 25 lb. minimum in warp and weft

- Drapery

  - Seam slippage **ASTM D3597-434** for fabrics over oz./sq. yard 25 lb. minimum in warp and weft
  - Seam slippage **ASTM D3597-434** for fabrics under oz./sq. yard 15 lb. minimum in warp and weft

Double Rub Guideline (DR):

- These guidance ratings are based on the Wyzenbeck Method.

- Wyzenbeek – method **ASTM 4157 modified** (cotton duck)

  - The fabric to be tested is pulled taut and rubbed in both the warp and filling directions, using a piece of cotton duck fabric as the abradent. The number of cycles, or double rubs endured before the fabric shows “noticeable wear” is counted. This number determines the fabric’s abrasion rating.

- These are minimums and the actual range shall be determined by the traffic flow and use in a particular area.

  30,000 + : For low traffic or high administrative areas such as:

    - Executive waiting
    - Guest seating
    - High visible areas with low to medium use

  - Rarely use this low of a rating.

  60,000 + : For medium traffic such as:

    - Lodging reception lounge
    - Some conference rooms
    - Medium use waiting areas
    - Low use dinning areas

  100,000 + : For high traffic areas such as:

    - Highly used waiting area
    - Desk chairs

- Conference rooms
- Clinics
- All dorm furniture
- Dinning rooms
- Youth centers

Cleaning Codes and Instructions:

- Cleaning Code S:

  - Only mild, pure, water-free dry cleaning solvents may be used for cleaning this fabric.
  - Cleaning by a professional furniture service is recommended.

- Regular Maintenance

  - It is important to vacuum upholstery regularly to remove the surface dust that builds up and slowly contributes to a graying effect that diminishes the clarity of the original color. Please note that vacuuming to be done with the proper attachments to avoid breaking down the fibers and contributing to “pilling.”

  - In addition to regular vacuuming, a professional dry cleaner is to come in at least once or twice a year to thoroughly clean the fabrics and remove the soiling that a normal vacuum cleaner cannot reach. The expense of this service is small compared to the reward of seating that looks good as new after a lot of use.

  - With any upholstery fabric, it is extremely important to pre-test your cleaning method on a hidden area of the fabric to determine if the color bleeds, or if the fabric shrinks. When in doubt, seek the help of a professional furniture cleaner.

- Stain Treatment

  - Cleaning by a professional furniture service is recommended.

- The following procedure to be used with all cleaning agents:

  - A clean, white cloth dampened with the selected cleaning agent to be used in an inconspicuous place to test for colorfastness. Optimum cleaning will be achieved by not oversetting the cloth and by turning it frequently to keep it clean. Rings can be avoided by working from the outer edge of the spot toward the center. This process should be repeated until the spot is removed or there is no further transfer to the cloth.

- Cleaning Code W:

  - Water-based cleaning agents or foam may be used for cleaning. Cleaning by a professional furniture service is recommended.

  - Regular Maintenance:

    - It is important to vacuum upholstery regularly to remove the surface dust that builds up and slowly contributes to a graying effect that diminishes the clarity of the original color. Please note that vacuuming should be done with the proper attachments to avoid breaking down the fibers and contributing to “pilling.”

- In addition to regular vacuuming, a professional dry cleaner should come in at least once or twice a year to thoroughly clean the fabrics and remove the soiling that a normal vacuum cleaner cannot reach. The expense of this service is small compared to the reward of seating that looks good as new after a lot of use.

- With any upholstery fabric, it is extremely important to pre-test your cleaning method on a hidden area of the fabric to determine if the color bleeds, or if the fabric shrinks. When in doubt, seek the help of a professional furniture cleaner.

- Stain Treatment:

- There are two types of stains: water-based and oil-based. The key to removing either type is prompt action. The longer a stain is allowed to remain on a fabric, the more difficult it will be to remove.

- For water-based stains, a solution of warm soapy water (not overly soapy) used in the following manner should remove them. In removing oil-based stains, the same procedure can be followed, but instead of warm water, a spray dry cleaning solution can be used depending on cleaning code. Either treatment should be tried in a concealed part of the fabric first, to make sure there would be no adverse reaction between the dye stuffs and the cleaning solution.

Step 1. Soak up excess staining material immediately with a soft absorbent material. Do not dry the stain completely or it may set.

Step 2. Either by using the warm soapy water or a dry cleaning solution depending on specific cleaning code, and a clean sponge or soft bristle brush, begin brushing the stain with light, quick strokes. Start at the outside of the stain and work toward the center. Be careful not to overly saturate the stain with cleaning solution or you may get a ring. Do not rub too vigorously or you may damage the nap of the fabric or break fibers.

Step 3. Once the stain is removed, soak up all remaining cleaning solution and then use another clean clothe or sponge dipped in cool water to remove any residue that will attract further soiling.

Step 4. Allow fabric to dry thoroughly and then vacuum well before using.

Step 5. It has been proven that several light applications are less harmful to fabrics than one concentrated one. If you go through the above steps and there is still a stain, repeat the entire procedure.

Step 6. Remember, never use anything hot to clean fabric, as heat will set stains. Also, avoid a scrubbing motion.

Step 7. If the stain is stubborn, call a professional cleaner and ask for their advice.

- The following procedure should be used with all cleaning agents:

- A clean, white cloth dampened with the selected cleaning agent should be used in an inconspicuous place to test for colorfastness. Optimum cleaning will be achieved by not oversetting the cloth and by turning it frequently to keep it

clean. Rings can be avoided by working from the outer edge of the spot toward the center. This process should be repeated until the spot is removed or there is no further transfer to the cloth.

- Cleaning Code W/S:

  - Water-based cleaning agents and foam may be used for cleaning. This fabric may also be cleaned with mild, water-free solvents. Cleaning by a professional furniture service is recommended.

- Regular Maintenance:

  - It is important to vacuum upholstery regularly to remove the surface dust that builds up and slowly contributes to a graying effect that diminishes the clarity of the original color. Please note that vacuuming should be done with the proper attachments to avoid breaking down the fibers and contributing to "pilling."

  - In addition to regular vacuuming, a professional dry cleaner should come in at least once or twice a year to thoroughly clean the fabrics and remove the soiling that a normal vacuum cleaner cannot reach. The expense of this service is small compared to the reward of seating that looks good as new after a lot of use.

  - With any upholstery fabric, it is extremely important to pre-test your cleaning method on a hidden area of the fabric to determine if the color bleeds, or if the fabric shrinks. When in doubt, seek the help of a professional furniture cleaner.

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    Step 3. Once the stain is removed, soak up all remaining cleaning solution and then use another clean clothe or sponge dipped in cool water to remove any residue that will attract further soiling.

    Step 4. Allow fabric to dry thoroughly and then vacuum well

before using.

Step 5. It has been proven that several light applications are less harmful to fabrics than one concentrated one. If you go through the above steps and there is still a stain, repeat the entire procedure.

Step 6. Remember, never use anything hot to clean fabric, as heat will set stains. Also, avoid a scrubbing motion.

Step 7. If the stain is stubborn, call a professional cleaner and ask for their advice.

- The following procedure should be used with all cleaning agents:

  - A clean, white cloth dampened with the selected cleaning agent should be used in an inconspicuous place to test for colorfastness. Optimum cleaning will be achieved by not oversetting the cloth and by turning it frequently to keep it clean. Rings can be avoided by working from the outer edge of the spot toward the center. This process should be repeated until the spot is removed or there is no further transfer to the cloth.

- Cleaning Code X:

–This fabric should be vacuumed or brushed lightly to remove soil.

- WARNING: do not use water-based foam or liquid cleaning agents of any type on this fabric. Scrape and vacuum away dry, solid material. Avoid working soilant deeper into the fabric.

- Regular Maintenance:

  - It is important to vacuum upholstery regularly to remove the surface dust that builds up and slowly contributes to a graying effect that diminishes the clarity of the original color. Please note that vacuuming should be done with the proper attachments to avoid breaking down the fibers and contributing to “pilling.”

  - In addition to regular vacuuming, a professional dry cleaner should come in at least once or twice a year to thoroughly clean the fabrics and remove the soiling that a normal vacuum cleaner cannot reach. The expense of this service is small compared to the reward of seating that looks good as new after a lot of use.

  - With any upholstery fabric, it is extremely important to pre-test your cleaning method on a hidden area of the fabric to determine if the color bleeds, or if the fabric shrinks. When in doubt, seek the help of a professional furniture cleaner.

- Stain Treatment:

  - There are two types of stains: water-based and oil-based. The key to removing either type is prompt action. The longer a stain is allowed to remain on a fabric, the more difficult it will be to remove.

  - For water-based stains, a solution of warm soapy water (not overly soapy) used in the following manner should remove them. In removing oil-based stains, the same procedure can be followed, but instead of warm water, a spray dry cleaning solution can be used depending on cleaning code. Either treatment should be tried in a concealed part of the fabric first, to make sure

there would be no adverse reaction between the dye stuffs and the cleaning solution.

Step 1. Soak up excess staining material immediately with a soft absorbent material. Do not dry the stain completely or it may set.

Step 2. Either by using the warm soapy water or a dry cleaning solution depending on specific cleaning code, and a clean sponge or soft bristle brush, begin brushing the stain with light, quick strokes. Start at the outside of the stain and work toward the center. Be careful not to overly saturate the stain with cleaning solution or you may get a ring. Do not rub too vigorously or you may damage the nap of the fabric or break fibers.

Step 3. Once the stain is removed, soak up all remaining cleaning solution and then use another clean clothe or sponge dipped in cool water to remove any residue that will attract further soiling.

Step 4. Allow fabric to dry thoroughly and then vacuum well before using.

Step 5. It has been proven that several light applications are less harmful to fabrics than one concentrated one. If you go through the above steps and there is still a stain, repeat the entire procedure.

Step 6. Remember, never use anything hot to clean fabric, as heat will set stains. Also, avoid a scrubbing motion.

Step 7. If the stain is stubborn, call a professional cleaner and ask for their advice.

- The following procedure should be used with all cleaning agents:

- A clean, white cloth dampened with the selected cleaning agent should be used in an inconspicuous place to test for colorfastness. Optimum cleaning will be achieved by not oversetting the cloth and by turning it frequently to keep it clean. Rings can be avoided by working from the outer edge of the spot toward the center. This process should be repeated until the spot is removed or there is no further transfer to the cloth.

back to textile

print

interior design

signage

Concise, orderly and visually pleasant signage is a critical design element which creates an ongoing "dialogue" with its users. It directs traffic, identifies facilities, provides warnings, and prohibits access. The signage must respond not only to functional requirements and use signage hierarchy, materials, colors, and concise messages to communicate intent clearly, but must be a unifying element for the base. The following group of guidelines outlines a communication media.

Overall, this is one element in the built environment which should identify Peterson AFB as part of a larger whole, the United States Air Force. Common signage systems can visually communicate this continuity more readily than building or landscape design. For these reasons, this guideline adheres to the intent of **UFC-3-120-01, Sign Standards**. Some signage for Peterson AFB, in fact, is taken without modification from AFPAM 32-1099. The other signage is designed to meet these goals while lending distinctiveness to Peterson AFB.

existing signage

General Information

Existing Needs

Peterson AFB is a daily destination point and center of activity for thousands of people, including active duty Air Force personnel, families, civilian employees, and state, national, and international official visitors. Except for VIPs and others who fly in, these people enter and exit Peterson AFB along the base's and city's highways and roadways. The signage system is therefore the cornerstone of visual communication. Currently the base's signage, while generally attractive and well maintained, is too varied and has not been consolidated into a cohesive, easily usable, and visually appealing whole. Examples include the highly individualized signage at the Community Center.

existing signage

Another problem is over-signage. The repetitive parking signs at the NCO Club look cluttered and confusing. (They also resemble residential "For Sale" signs.)

Finally, some signage is very difficult to read. The lettering is too small and close together or, as in the case of the raised letters on the site wall at the Ent Federal Credit Union and at the CISF building, so similar in color to the background as to be almost invisible.

existing signage

Master Plan

The overall signage system must communicate information in an attractive and efficient manner as well as to help unify Peterson AFB. It is therefore imperative that these concepts and guidelines be implemented in a systematic manner. A Signage Master Plan should be prepared as a separate study. This Master Plan should include, at a minimum, a sign location plan and a

sign schedule, as discussed briefly below.

The sign location plan should be prepared by using a current General Site Map which clearly shows all major features, buildings and landscape elements. Sign type, message content, and sequential progression should be carefully considered for determining the sign location. The preliminary locations should be site verified, and each sign should be identified by a number.

The sign schedule should be prepared concurrently with the location plan, using the sign number established on the master plan. The written schedule documents the number, reference building number, sign type, and the exact message.

The Signage Master Plan should identify existing and proposed signs and be kept current.

System Organization

The signage system is broken down into several subgroups visually associated with different functions. The subgroups chosen for Peterson AFB include base, facility, destination, motivational, informational, and regulatory signage.

Base Signs

Base signs name the installation at each of the main entrances.

Facility Signs

Facility signs identify the large number of buildings which house a wide variety of functions.

Destination Signs

Destination signs direct vehicular and pedestrian traffic within Peterson AFB. These signs must be located in a logical, continuous progression from the point of entry to the desired activity along the street system.

Motivational Signs

Motivational signs are important elements of campaigns to boost morale, improve safety, aid in recruiting, and accomplish other motivational objectives. Often, however, such signs are produced by personnel having limited resources for designing and fabricating signage. It is therefore important to consolidate this signage.

Informational Signs

Informational signs are generally used to provide educational or general information for visitors or other people.

Regulatory Signs

This category of signage restricts, warns and advises. A systematic approach to sign placement is particularly important in this category to prevent over-signing and the resulting visual clutter. Regulatory signs have three subcategories: Highway/Traffic, Government Warning, and Parking Regulation. These guidelines will not address traffic control signage since this category is not regulated by the base, but is an extension of the surrounding civilian regulatory signage system.

System Characteristics

Peterson AFB's signage system must be a unifying visual element, and most importantly, must communicate necessary information effectively. To convey this information clearly, and to make a positive contribution to the overall visual image of Peterson AFB, the signage system must incorporate the following general characteristics:

Simplicity

An effective strategy provides only needed information, avoids redundancy and eliminates over-signing with its resulting clutter and visual confusion. Sign messages must be clear, simple and easy for motorists to process quickly.

Consistency

It is essential that the system be applied uniformly and consistently throughout the entire installation. The importance of consistent implementation extends from the larger issues of sign type and size down to accurate color continuity and matching typestyles.

Visibility

Sign location is very important to the success of the system. Signs must be located at significant decision points and oriented to provide clear sight lines for the intended users. Close coordination of locations with respect to landscaping, utilities, adjacent signs and various other streetscape design elements is imperative to insure long-term maximum visibility.

Legibility

Sign typestyle, line spacing, color and size all combine to create the crucial design characteristic of legibility. This aspect of sign design should take into consideration whether the elements are used by motorists, pedestrians, or bicyclists and the relative travel speed at which each type of user will be going when using the signs.

Flexibility

The system must allow for changing sign messages without total replacement of entire signs. At military installations, including Peterson AFB, activities and units are periodically relocated within the installation. These relocations can happen quite frequently. The signage system must be designed to effectively communicate these changes in an efficient and visually effective manner.

Hierarchy

The entire system must communicate by varying sign size, layout, and orientation the relative importance of the individual activity which the sign identifies. Likewise primary roadway identification signage should be part of an integrated signage, lighting, and traffic control system.

Typography

Typestyle

Helvetica Medium and Helvetica Regular are the primary approved typefaces for military service signage. This sans-serif typestyle has been found to be one of the most easily read and universally attractive for use in a comprehensive signage system. Helvetica Medium should be used for major information on all signs. Helvetica Regular has a slightly thinner stroke width and should be used for

secondary information on identification signs and on other miscellaneous signs. Helvetica Regular (all caps) should also be used for all individually-mounted, dimensional letters.

helvetica regular

Helvetica Medium should always be used when directional arrows are required in the sign message. Use Clarendon typestyle for all signs at historical buildings. This is primarily for use within Character Area 10 - Historical, and other historical buildings in all other character areas.

ABCDEFGHIJK?
LMNOPQRSTU !
VWXYZ/&£$ß)
äbcdefghijklmn.,
1234567890

helvetica medium

Spacing Standards

Applications of individual letters require different spacing depending upon the circumstances. At longer viewing distances, letters tend to meld together and become visually unless the spacing is increased. The contrast between letter color and background colors can also affect "ideal" letter spacing. For the purposes of this Exterior Design Guide, the following three layout methods will be used. These methods allow for proportional spacing to maintain visually equal spacing and alignment. Mechanically equal areas for all letters will not be used. Letter spacing standards should be used for both Helvetica Medium and Helvetica Regular typestyles. These standards are based on a "unit system", with one unit equalling 1/50th the height of the reference capital letter. Charts for this method are readily available in Technical Manuals and other reference documents. The computerized letter cutter currently in use in the BCE sign shop uses an electronic variation of this system.

Another method of assuring proper letter spacing is the "tile system", where individual letters are furnished on proportionately sized paperboard tiles. These tiles allow any message to be constructed with relatively little training and generate professional quality signage. Inventory of letters and characters must be maintained with this system.

Letters for signage can also be received on a "pre-spaced" basis. The vinyl die-cut letters are adhesive-backed and come on a transparent carrier sheet.

Sign Layout

The sizes of the different categories of signs in the system are based upon multiples of the capital letter height (CAP height) for the typestyle to be used on the sign. All aspects of the layout are based upon the cap height. Good judgement is essential when deciding where the lines of text should break in the sign. Single names or ideas should appear on the same line. Names of units or organizations should be spelled out, not abbreviated, wherever possible. If abbreviations are necessary, they should comply with **AFPAM 32-1097**. Numbers used for the titles of military units should always be written as numerals for all numbers to save space and letters. The lines of a sign should be visually balanced to avoid an awkward appearance.

Building identification signs using individual raised letters will most commonly indicate one major facility name, appearing in Helvetica Regular typestyle, using all caps.

Military Emblems

The Air Force has a rich tradition of military heraldry. Military emblems are an important part of personnel identity and the emblems have been carefully designed over the years to express pride and the unique history and/or function of a group. The careful use of organizational emblems in a signage system can add visual interest as well as build pride. The over-use of miscellaneous emblems, however, can lead to clutter and a dilution of its importance. Distinction is the key. Authorization for use of emblems and appropriate color and shape applications are regulated by **AFPAM 32-1097**. formerly AFP 88-40.

Military groups at Peterson AFB may use their command shield, branch insignia, shoulder sleeve insignia, coat of arms and/or other distinctive insignia on their headquarters signs. Such emblems shall be supplied by the respective units for application by BCE personnel. All military emblems must appear in full color. It is base policy to strictly prohibit display of emblems on building exterior walls or other permanent structures.

Pictographs

The symbols or pictographs (graphic expressions of actual objects) shown here can be useful where rapid communication is necessary. Each symbol background border must always be square with rounded corners, and the border line weight must be consistent for all symbols. The symbol types include service, mandatory/ prohibitory, sports and recreation symbols.

pictographs

Color

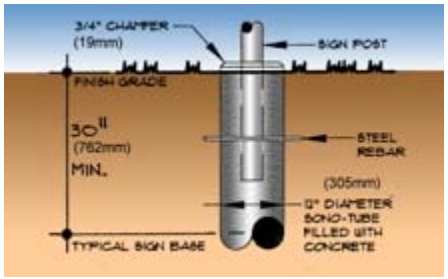
Since the signs will be produced in a number of ways, all required colors are given in at least two of the following: Federal Highway Administration PR Colors (FHA), Sherwin-Williams (SW), or Federal Stand Color (FSC).

All signage shall be provided in accordance with the requirements listed in this Design Guideline in the following colors:

- Standard Blue: FHA #3, Highway Blue; SW 2940, Bridgeport (N); FSC X5180
- Standard Brown: SW 2733, Chaparral (BGY); FSC X0045
- Standard Red: FHA #3, Highway Red; SW 2910, Red Door (PC); FSC X1086
- Standard Black: FHA Black (non-reflective); SW 2119, Umbrella Black (C); FSC X7038
- Standard White: FHA White; SW 2423, Polar White (TWT); FSC X7925
- Peterson Air Force Brown: SW 1112, Setter's Coat (R); FSC X0117.

Sign Construction

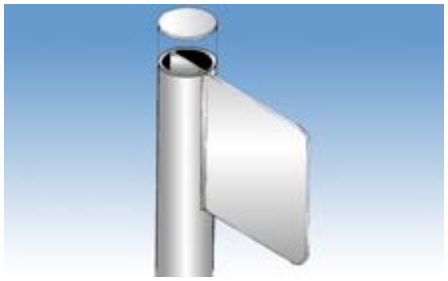
Careful selection and coordination of sign materials will help simplify sign fabrication and keep costs down. In addition to consistent use of color, typography, emblems and pictographs, consistent use of materials and construction methods will promote visual unity as the signs are used throughout the base.



typical base construction for signage

Sign Panel

Sign panels shall be fabricated from aluminum sheet in minimum 12 gauge or heavier to withstand high winds and physical abuse. Building mount panels shall be single-sheet. Panels over 18 inches (457.2 mm) square shall have a continuous return 1-1/2 (38.1 mm) or 3 inches (76.2 mm) deep as discussed later. Double-post and base mount panels shall be double-sheet and frame of the thickness of the posts or base. Single-post panels shall be single sheet.



Building Mount

Sign panels 18 inches (457.2 mm) square and larger

shall be mounted to the building face with concealed fasteners.

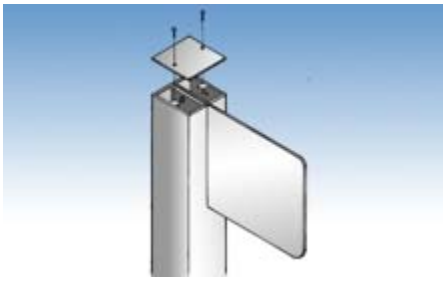
typical sigh post (peterson east)

Raised Letters and Numbers

At one and two story buildings, provide letters and numbers twelve inches (12") (304.8 mm) high. At three story buildings and taller, provide letters and numbers eighteen inches (18") (457.2 mm) high.

Sign panels less than 18 inches (457.2 mm) square (i.e. building number signs) may be mounted with exposed fasteners.

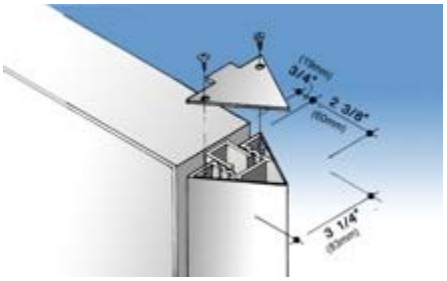
Individual letters shall be mounted to the building face with concealed anchors, and shall be Helvetica Regular typeface, all caps.



typical sign post (peterson main)

Post Mount

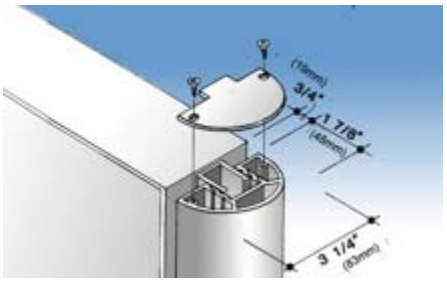
The sign panel (s) shall be mounted onto aluminum posts, size and shape as shown. Typically the post top ends shall be closed with a flat aluminum plate. Part Numbers: EOCPS1 and EOFPS1, 84" (2,133.6 mm) center post or flag post, choice of half round or squared.



typical sign post (peterson main)

Base Mount

The sign panel shall be mounted on post bases constructed of steel-reinforced concrete, with the width, height, and length as shown in each guideline graphic. All top (outside) corners of the concrete shall have a continuous 3/4" (19.05 mm) chamfer. The concrete shall have an exposed aggregate finish with a natural warm gray color. Top surface of concrete to be sloped away from post to ensure drainage.



typical sign post (peterson east)

Fence Mount

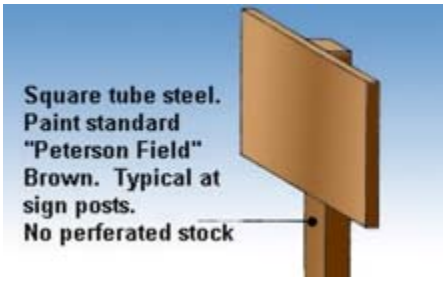
Sign panels may be mounted with exposed fasteners.

Landscaping

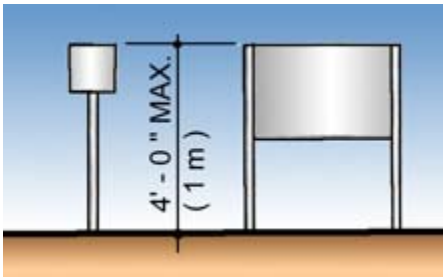
All free-standing signs shall be surrounded by appropriate landscaping. This landscaping shall be designed to enhance the sign without detracting from its communication ability. Refer to Guideline LD-6 for landscape guidelines.

Signage Source

The Air Force is mandated to use signage from Federal Prison Industries (FPI) UNICOR as a source for signage acquisition. At Peterson AFB the sign standard preferred is UNICOR-System 2/90.



typical sign post



sign heights

print

site elements

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fire protection equipment

- Extinguisher Cabinets
- Alarm Bells/A-V Devices
- Manual Pull Stations
- Exit Signs
- Panic Hardware
- Automatic Sprinklers
- Thermal Detectors
- Smoke Detectors
- Emergency Lighting
- Fire Glazing

General:

- Ensure any fire alarm equipment that is painted to match the room color is manufacturer applied as to not void the warranty.

- All panel boxes and other equipment boxes will be recessed in the wall and match/blend with the wall color.

Extinguisher Cabinets:

- Recessed in the wall.

- There are no required colors other than matching the wall color.

- May be field painted.

- There are no required styles.

- Locate in accordance with codes but consider other function requirements for selected location.

    - Such as, will a wall hanging be placed at that location.

- Shall be able to identify as a fire extinguisher location.

    - A glass door where you can see the extinguisher is adequate.

- Where required – within 75’, not every 75’

Alarm Bells/A-V Devices:

- Standard to be white in color for most walls.

- If walls are very dark they may be black. Only manufacturer’s factory finishes allowed, do not paint.

- Do not use red. These are not to stand out.

- The light shall be either clear or nominal white

- Located where can be seen and heard at appropriate level (15dB above ambient noise level)

    - Public mode – typically what has been used in the past
    - Private mode – typical of chimes

Manual Pull Stations:

- Activation boxes shall be recognizable as such.

- Activation boxes shall be located to make the method of it's use apparent.

- These shall be red in color and of factory finish only.

- No field painting so specify what is needed up front.

Exit Signs:

- Light source: Green ultra-bright LEDs.

- Listed/approved as manufactured for the intended purpose.

- Readily visible base on location, size, distinctive color and design.

- Provide contrast with decorations, interior finish, or other signs.

- No decorations furnishings, or equipment may impair visibility of an exit sign.

- No brightly illuminated sign, display, or object in or near the line of vision of the required exit sign of such character as to detract attention from the exit sign.

Panic Hardware:

- Panic hardware and fire hardware are not the same thing but they often look alike.

    - Panic hardware is a door-latching device that releases the door when pressure is applied in the direction of egress.
    - Fire exit hardware keeps the door closed to the passage of fire.

- Located not lower than 34" nor higher than 48" A.F.F.

- Actuating portion shall be at least ½ width of door.

- No required style, color, or finish.

- May be built into, recessed into or surfaced mounted on the door.

- Delayed egress systems permitted in most occupancies.

Automatic Sprinklers:

- Factory finishes only – no specific color or design.

- Finishes readily available:

    - Brass
    - Chrome
    - White
    - Brown
    - Black
    - Manufacturers do provide specialty finishes.

- Operating links, metal links, brass/chrome or liquid filled glass bulbs.

- Different styles have little cost difference if specified in original **RFP**

    – Major cost difference if a change order.

- Optional styles:

    - Exposed
    - Semi-recessed
    - Recessed
    - Concealed.

- Can be added to any structure, including historic buildings, and still be hidden and attractive.

    - Was added to Library of Congress and being added to the US Capitol.

- If building has automatic sprinklers:

    - Finishes can be a lower class such as where you are required Class A, Class B can be used. - Where you are required Class B, Class C can be used.
    - Doubles travel distance to exits inmost cases.
    - Permits or increases common paths of travel to exits.
    - Permits or increases dead end corridors.
    - Reduces the required enclosure and wall ratings.
    - Reduces the requirements for areas of refuge needed to meet ADA.

Thermal Detectors:

- Not required in buildings protected with automatic sprinkler systems.

    - Required in Air Force buildings not protected with automatic sprinkler systems.

- Factory finishes only, no specific color or design.

    - White and off-white readily available.
    - Typically white to be standard. Match wall color.

- Some manufacturers do provide specialty finishes.

- Styles: spot and linear.

- Most detectors are surfaced mounted.

Smoke Detectors:

- Required only in special cases. Such as:

  - Sleeping areas
  - Child Development Centers
  - Electronics
  - Special high value/mission importance cases

- Factory finishes only, no specific color or design.

  - White and off-white readily available.
  - Typically **white to be standard**.

- Styles - spot, beam, air sampling and ultra-sensitive.
- Spot and beam detectors are surfaced mounted.

- Air sampling and ultra-sensitive types are remotely mounted with air sampling tubes through the protected area.

- Can be added to any structure – including historic buildings.

Emergency Lighting:

- Required for:

  - Exits
  - Exit discharge
  - Portions of exit access

- Required in:

  - Most nonresidential occupancies (specific restrictions apply)
  - Some apartment buildings
  - Hotels
  - Dormitories with more than 25 rooms
  - In exits
  - Exit discharge
  - Portions of exit access.

- Always to be incorporated into normal lighting within the area.

  -Buildings provided with emergency back-up power generators always use normal lighting fixtures for the emergency lighting.
  - Buildings without generators incorporate emergency batteries into normal lighting fixtures.

Fire Glazing:

- All wire glass is not necessarily fire rated.

- Several manufacturers of clear fire rated glass.

- Approval now allows for entire walls, even atriums.

- Ratings apply to entire assembly (glass and frame).

- Fire rated doors shall have fire rated glazing openings factory installed.

print

interior design

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ATTACHMENT NO. 3

AVAILABLE EDITED AND UNEDITED GUIDE SPECFICATIONS

ABBREVIATIONS

UFGS – UNEDITED UNIFIED FACILITIES GUIDE SPECIFICATIONS
CEGS - 0MAHA – UNEDITED GUIDE SPECIFICATIONS, COPY INCLUDED AT END OF THIS INDEX.
THERE MAY BE SOME PARTIAL EDITING ALREADY DONE.
RFP – EDITED RFP SECTIONS TO BE USED WITHOUT CHANGE

COPIES OF EACH OF THE SPECIFICATIONS SECTIONS (SPECSINTACT FORMAT) LISTED BELOW HAS BEEN PROVIDED ON THE SOLICITATION CD-ROM UNDER FOLDER LABELED “GUIDES”. SECTIONS ARE UFGS UNLESS LABELED OTHERWISE.

USE OF UFGS SECTIONS

Unless directed otherwise, use UFGS sections. Available UFGS sections include sections that have a 5 digit section number with either the letters "A" or "N" following the section number or no letter following the section number. The letters designate the specification proponent ("A" is for USACE and "N" is for NAVFAC). The Contractor shall use sections with the letter "A" following the section number or sections with no letter following the section number. Sections with the letter "N" following the section number shall not be used unless there is no other available section, the solicitation directs the use of these sections or the available sections do not meet the solicitation requirements. Where UFGS sections include tailoring options for both Army and Navy, use the Army tailoring option. Where conflicts exist that cannot be resolved, the Contracting Officer shall be contacted to resolve the issue.

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SECTION 01356

STORM WATER POLLUTION PREVENTION MEASURES

11/01

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SECTION 01356

STORM WATER POLLUTION PREVENTION MEASURES
11/01

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 448	(1998) Sizes of Aggregate for Road and Bridge Construction
ASTM D 4873	(2001) Identification, Storage, and Handling of Geosynthetic Rolls and Samples

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

AASHTO M 288	(2000) Geotextile for Highway Applications

1.2 GENERAL

The Contractor shall implement the storm water pollution prevention measures specified in this section in a manner which will meet the requirements of Section 01355 ENVIRONMENTAL PROTECTION, and the requirements of the National Pollution Discharge Elimination System (NPDES) permit specified in Section 01556 (FEDERAL FACILITIES COLORADO) NPDES PERMIT REQUIREMENTS FOR STORM WATER DISCHARGES FROM CONSTRUCTION SITES.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not haveing a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-07 Certificates

Mill Certificate or Affidavit

1.4 EROSION AND SEDIMENT CONTROLS

The controls and measures required by the Contractor are described in the Storm Water Pollution Prevention Plans (SWPPP) attached to Section 01556 (FEDERAL FACILITIES COLORADO) NPDES PERMIT REQUIREMENTS FOR STORM WATER DISCHARGES FROM CONSTRUCTION SITES.

PART 2 PRODUCTS

2.1 COMPONENTS FOR SILT FENCES

2.1.1 Geotextile

The geotextile shall comply with the requirements of AASHTO M 288 for temporary silt fence.

2.1.2 Silt Fence Stakes and Posts

The Contractor may use either wooden stakes or steel posts for fence construction. Wooden stakes utilized for silt fence construction, shall have a minimum cross section of 2 inches by 2 inches when oak is used and 4 inches by 4 inches when pine is used, and shall have a minimum length of 3 feet. Steel posts (standard "U" or "T" section) utilized for silt fence construction, shall have a minimum weight of 1.33 pounds per linear foot and a minimum length of 5 feet.

2.1.3 Mill Certificate or Affidavit

A mill certificate or affidavit shall be provided attesting that the geotextile and factory seams meet chemical, physical, and manufacturing requirements specified above. The mill certificate or affidavit shall specify the actual Minimum Average Roll Values and shall identify the fabric supplied by roll identification numbers. The Contractor shall submit a mill certificate or affidavit signed by a legally authorized official from the company manufacturing the geotextile.

2.1.4 Identification Storage and Handling

Geotextile shall be identified, stored and handled in accordance with ASTM D 4873.

2.1.5 Support Mesh

Support mesh shall be 14-1/2 gage or heavier steel wire with a mesh spacing of 6 by 6 inch or a prefabricated polymeric mesh of equivalent strength.

2.2 Erosion Control Blankets

Erosion control blankets shall be a machine-produced mat with a biodegradable agricultural straw matrix (approximately 0.50 lb/sq yd) and photodegradable netting on each side. The blanket shall be sewn together with degradable thread. Installation staple patterns shall be clearly marked on the erosion control blanket with environmentally safe paint.

2.3 COMPONENTS FOR SEDIMENT TRAP

Coarse aggregate shall conform to ASTM D 448, Size 3, 357, or 5. Minor variations from the gradations specified will be permitted. Stone for riprap shall consist of field stone or rough unhewn quarry stone of approximately rectangular shape. The stone shall be hard and angular and of such quality that it will not disintegrate on exposure to water or weathering. The specific gravity of individual stones shall be at least 2.5. Riprap stones shall weigh between 50 and 150 pounds each, except that approximately 10 percent may weigh 50 pounds or less. At least 60 percent shall weight more than 100 pounds. Geotextile shall conform to paragraph GEOTEXTILES.

2.4 COMPONENTS FOR INLET PROTECTION

Aggregates for gravel filter should be sized to get the greatest amount of filtering action possible (by using smaller-sized stone), while not creating significant ponding problems.

2.5 STONE CONSTRUCTION ENTRANCE

Aggregate for construction entrance shall conform to ASTM D 448, Size 1. Minor variations from the gradation specified will be permitted. Geotextile shall conform to paragraph GEOTEXTILES.

2.6 ROCK CHECK DAMS

Coarse aggregate shall conform to ASTM D 448 size number 1 or approved equal. Riprap shall consist of field stone or rough unhewn quarry stone of approximately rectangular shape. Riprap shall be hard and angular. The specific gravity of individual stones shall be at least 2.5. Concrete rubble may be used provided it has a density of at least 150 pcf. Individual stones shall have a weight of 50 to 150 lbs except that a maximum of 10 percent of stone may weigh less than 50 lbs. At least 60 percent of stones shall weigh more than 100 lbs.

2.7 GEOTEXTILES

Geotextile for other than silt fence shall comply with the requirements of AASHTO M 288 for a separation geotextile.

PART 3 EXECUTION

3.1 INSTALLATION OF SILT FENCES

Silt fences shall extend a minimum of 16 inches above the ground surface and shall not exceed 34 inches above the ground surface. Filter fabric shall be from a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are unavoidable, filter fabric shall be spliced together at a support post, with a minimum 6 inch overlap, and securely sealed. A trench shall be excavated approximately 6 inches wide and 8 inches deep on the upslope side of the location of the silt fence. The 6-inch by 8-inch trench shall be backfilled and the soil compacted over the filter fabric. Silt fences shall be removed upon approval by the Contracting Officer.

3.2 Sediment Trap

The area under the embankment shall be cleared, grubbed, and stripped of any vegetation and root mat. Fill material for the embankment shall be placed in accordance with Section 02300 EARTHWORK. A geotextile shall be placed between the riprap and subgrade.

3.3 Stone Construction Entrance

The area of the entrance shall be cleared of all vegatation, roots, and other objectionable material. The aggregate layer shall have a minimum total thickness of 6 inches. A geotextile shall be placed beneath aggregate for the full width and length of the entrance. A minimum of 3 inches of the aggregate shall be placed in a cut section to provide stability and secure the geotextile. If conditions on the site are such

that the majority of the mud is not removed by the vehicles traveling over the stone, then the tires of the vehicles shall be washed before entering the road. Wash water must be carried away from the entrance to an approved settling area to remove sediment. A wash rack may also be installed for washing of vehicles.

3.4 MAINTENANCE

The Contractor shall maintain the temporary and permanent vegetation, erosion and sediment control measures, and other protective measures in good and effective operating condition by performing routine inspections to determine condition and effectiveness, by restoration of destroyed vegetative cover, and by repair of erosion and sediment control measures and other protective measures. Maintenance of protective measures shall conform to the requirements in the SWPPP.

3.5 INSPECTIONS

3.5.1 General

The Contractor shall inspect disturbed areas of the construction site, areas used for storage of materials that are exposed to precipitation that have not been finally stabilized, stabilization practices, structural practices, other controls, and area where vehicles exit the site at least once every seven (7) calendar days and within 24 hours of the end of any storm that produces 0.5 inches or more rainfall at the site. Where sites have been finally stabilized, such inspection shall be conducted at least once every month. Inspection of protective measures shall conform to the requirements in the SWPPP.

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SECTION 01400

SPECIAL SAFETY REQUIREMENTS

05/00 Rev 02/04

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SECTION 01400

SPECIAL SAFETY REQUIREMENTS
05/00 Rev 02/04

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1910.146	Permit-required Confined Spaces
29 CFR 1910.252	Welding, Cutting and Brazing: General Requirements
29 CFR 1926	Safety and Health Regulations for Construction
29 CFR 1926.1101	Asbestos
29 CFR 1926.51	Sanitation
29 CFR 1926.62	Lead
40 CFR 61	National Emission Standards for Hazardous Air Pollutants
40 CFR 763	Asbestos

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2003) Safety and Health Requirements Manual

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10	(2002) Portable Fire Extinguishers

AIR FORCE INSTRUCTION (AFI)Org

AFI 40-102	(3 June 2002) Tabacco Use in the Air Force

1.2 SUMMARY

1.2.1 General

This section provides guidelines for preparation of accident prevention plans, and to implement the accident prevention clause (this specification) and EM 385-1-1, Safety and Health Requirements Manual. This section also includes guidelines for demolition and renovation of structures that contain nonfriable (i.e. NESHAP Category I) asbestos or lead-based paint, and that are to be demolished or renovated with these materials in place. The U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1 is available from U.S. Government bookstores operated by the Government Printing Office and a copy is included on the CD-ROM issued with this solicitation. Changes to EM 385-1-1 applicable to this contract include only those revisions posted at the following website (all revisions up to the time this solicitation is issued): http://www.hq.usace.army.mil/soh/hqusace_soh.htm ("Changes to EM"). U.S. Government bookstores are located in most major cities including Milwaukee, Chicago, Kansas City, Denver, and Pueblo, Colorado.

1.3 PRECONSTRUCTION CONFERENCE

See Contract Clause "PRECONSTRUCTION CONFERENCE". A preconstruction conference will be scheduled prior to beginning of site work. Requirements relative to planning and administration of the overall safety program will be discussed.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330SUBMITTAL PROCEDURES:

<u>Administrative Submittals</u>

Accident Prevention Plan;

The written site-specific Accident Prevention Plan including sections for lead and asbestos.

SD-01 Data

Respiratory Protection Program; G-AO.

Records of the respirator program.

SD-06 Test Reports

Exposure Assessment and Air Monitoring; G-AO.

Initial exposure assessments, negative exposure assessments, air-monitoring results and documentation.

SD-07 Certificates

Qualifications; G-AO.

A written report providing evidence of qualifications for personnel, facilities and equipment assigned to the work. Include copies of state of Colorado certifications for personnel as required for lead or asbestos work.

a. Current AHERA Accreditation certificates, per AHERA Regulation 40 CFR 763, Appendix C to Subpart E, for each worker or supervisor; Current State and Local supervisor and worker accreditation certificates.

b. Laboratory Qualifications and Certificates

Training Program;

A copy of the written project site-specific training material as indicated in 29 CFR 1926, Section .1101 that will be used to train onsite employees. The training document shall be signed by the Contractor's Competent Person.

Medical Requirements.

Physician's written opinion.

1.5 ACCIDENT PREVENTION PLAN

The Contractor shall submit, prior to the start of on site construction activity, a proposed accident prevention plan which shall be the accident prevention policy to be followed by all of the Contractor's and subcontractor's personnel and supervisory staff during performance of the work.

1.5.1 Requirements

The proposed plan shall be developed after a careful analysis of the work involved and shall be tailored specifically to the conditions of this project and shall include, as separate sections, a lead safety plan and an asbestos safety plan as described in Paragraph: Safety Plans. The Contractor's accident prevention plan shall also contain, as a minimum, the following general information or procedures for the activity indicated. The Contractor shall submit his plan for review and acceptance prior to commencing work.

1.5.1.1 Responsible Individual(s)

The Contractor shall designate an onsite employee as the individual responsible for insuring the accident prevention plan is implemented and enforced.

1.5.1.2 Subcontractor Supervision

Explain procedures to assure that subcontractor(s) fully comply with the accident prevention plan.

1.5.1.3 Indoctrination of New Employees

The plan shall include provisions for advising workers of the purpose of the accident prevention plan, specific hazards on the job and precautions to be taken, emergency procedures, information concerning tool box safety meetings, required protective equipment, cleanup rules and location of company safety rules (posting or handout).

1.5.1.4 Tool Box Safety Meetings

Hold weekly "Tool Box" safety meetings. Timely safety subjects shall be determined by a responsible individual. Employees will be informed of time, location, who will conduct, and subject. Identify procedures for including subcontractors. The Contractor shall provide a copy of the Weekly Tool Box Meeting and Monthly Supervisor's Safety Meeting to the Contracting Officer.

1.5.1.5 Fire Prevention and Protection

Identify source of fire protection. Insure adequate fire extinguishers, water barrels, or other fire-fighting equipment is located on site. Explain prevention activities to include storage areas and special hazards such as welding and use of flammable liquids, and other special hazards.

1.5.1.6 Housekeeping

Daily cleanup of all debris and waste materials is required. Adequate disposal containers should be placed strategically around the site. Debris shall be removed on a regular basis. Explain procedures that include use of barrels, dumpsters, trash chutes, etc.

1.5.1.7 Mechanical Equipment Inspection

All mechanical equipment (trucks, cranes, forklifts, backhoes, graders, etc.) shall be inspected prior to use and at fixed intervals throughout the life of the contract. Explain how inspections will be accomplished (frequency, by whom, and records to be kept).

1.5.1.8 First Aid and Medical Facilities

First aid facilities shall be made available on the job site. Arrangements for emergency medical attention shall be made prior to start of work. All emergency numbers (doctor, hospital, ambulance, fire department) shall be posted at the project superintendent's office.

1.5.1.9 Sanitation

Include provisions for toilet facilities, drinking water and washing facilities. A sufficient number of toilet facilities as specified in EM 385-1-1 shall be provided unless permission is granted to use existing facilities (portable chemical are authorized). Insure safe drinking water and individual cups are available. For the projects where corrosive or toxic materials are used, separate washing facilities are required.

1.5.1.10 Safety Promotions

The Contractor shall promote accident prevention. Identify method (posters, awards etc.).

1.5.1.11 Accident Reporting

All accidents (employee injuries, vehicle, building, or equipment damage etc.) regardless of their severity, shall be reported to the onsite government representative or to the area engineer, who in turn will advise the Contractor of forms to be submitted and timeframes.

1.5.1.12 Job Hazard Analysis

When job situations change and it is necessary to alter safety requirements, a Job Hazard Analysis will be accomplished, documented, and added as an addendum to the Accident Prevention Plan. Each Job Hazard Analysis shall include, but not be limited to, a description of the work, probable hazards related to that work and positive precautionary measures to be taken to reduce or eliminate each hazard. An example of changing situations may be new subcontractors performing work such as earth moving, trenching, concrete work, roofing, electrical, masonry etc. The onsite government representative will determine the format and amount of detail required of the written plan.

1.6 RADIOLOGICAL EQUIPMENT

In addition to any applicable Nuclear Regulatory Commission, state, local, or other federal licenses or permits, and in accordance with requirements of EM 385-1-1, Safety and Health Requirement Manual, the Contractor is required to obtain a service permit to use, store, operate, or handle a radiation producing machine or radioactive materials on a Department of Defense (DOD) Installation. The service permit shall be obtained from the appropriate U.S. Army or U.S. Air Force Command through the Contracting Officer's representative. The Contractor should notify the Contracting Officer during the prework conference if a radiation producing device will be utilized on a DOD Installation in order to determine the permit application requirements, and allow a lead time of 45 days for obtaining a permit.

1.7 AIRFIELD SAFETY PRECAUTIONS (DEC 1991)

1.7.1 Definitions

As used in this clause-

a. "Landing areas" means:

(1) The primary surfaces, comprising the surface of the runway, runway shoulders, and lateral safety zones. The length of each primary surface is the same as the runway length. The width of each primary surface is 2,000 feet (1,000 feet on each side of the runway centerline);

(2) The "clear zone" beyond the ends of each runway, i.e., the extension of the primary surface for a distance of 1,000 feet beyond each end of each runway.

(3) All taxiways, plus the lateral clearance zones along each side for the length of the taxiways (the outer edge of each lateral clearance zone is laterally 250 feet from the far or opposite edge of the taxiway, e.g., a 75-foot-wide taxiway would have a combined width of taxiway and lateral clearance zones of 425 feet); and

(4) All aircraft parking aprons, plus the area 125 feet in width extending beyond each edge all around the aprons.

b. "Safety precaution areas" means those portions of approach-departure clearance zones and transitional zones where placement of objects incident to contract performance might result in vertical projections at or above the approach-departure clearance, or the

transitional surface.

(1) The "approach-departure clearance surface" is an extension of the primary surface and the clear zone at each end of each runway, for a distance of 50,000 feet, first along an inclined (glide angle) and then along a horizontal plane, both flaring symmetrically about the runway centerline extended.

(a) The inclined plane (glide angle) begins in the clear zone 200 feet past the end of the runway (and primary surface) at the same elevation as the end of the runway. It continues upward at a slope of 50:1 (1 foot vertically for each 50 feet horizontally) to an elevation of 500 feet above the established airfield elevation. At that point the plane become horizontal, continuing at that same uniform elevation to a point 50,000 feet longitudinally from the beginning of the inclined plane (glide angle) and ending there.

(b) The width of the surface at the beginning of the inclined plane (glide angle) is the same as the width of the clear zone. It then flares uniformly, reaching the maximum width of 16,000 feet at the end.

(2) The "approach-departure clearance zone" is the ground area under the approach-departure clearance surface.

(3) The "transitional surface" is a sideways extension of all primary surfaces, clear zones, and approach-departure clearance surfaces along inclined planes.

(a) The inclined plane in each case begins at the edge of the surface.

(b) The slope of the incline plane is 7:1 (1 foot vertically for each 7 feet horizontally). It continues to the point of intersection with the-

(i) Inner horizontal surface (which is the horizontal plane 500 feet above the established airfield elevation); or

(ii) Outer horizontal surface (which is the horizontal plane 500 feet above the established airfield elevation), whichever is applicable.

(4) The "transitional zone" is the ground area under the transitional surface. (It adjoins the primary surface, clear zone, and approach-departure clearance zone.)

1.7.2 General

a. The Contractor shall comply with the requirements of this clause while-

(1) Operating all ground equipment (mobile or stationary);

(2) Placing all materials; and

(3) Performing all work, upon and around all airfields.

b. The requirements of this clause are in addition to any other safety requirements of this contract.

1.7.3 The Contractor shall

a. Report to the Contracting Officer before initiating any work;

b. Notify the Contracting Officer of proposed changes to locations and operations;

c. Not permit either its equipment or personnel to use any runway for purposes other than aircraft operation without permission of the Contracting Officer, unless the runway is-

(1) Closed by order of the Contracting Officer; and

(2) Marked as provided in paragraph 1.7.4 b. of this clause;

d. Keep all paved surfaces, such as runways, taxiways, and hardstands, clean at all times and, specifically, free from small stones which might damage aircraft propellers or jet aircraft;

e. Operate mobile equipment according to the safety provisions of this clause, while actually performing work on the airfield. At all other times, the Contractor shall remove all mobile equipment to locations-

(1) Approved by the Contracting Officer;

(2) At a distance of at least 750 feet from the runway centerline, plus any additional distance, and

(3) Necessary to ensure compliance with the other provisions of this clause; and

f. Not open a trench unless material is on hand and ready for placing in the trench. As soon as practicable after material has been placed and work approved, the Contractor shall backfill and compact trenches as required by the contract. Meanwhile, all hazardous conditions shall be marked and lighted in accordance with the other provisions of this clause.

1.7.4 Landing Areas

The Contractor shall:

a. Place nothing upon the landing areas without the authorization of the Contracting Officer;

b. Outline those landing areas hazardous to aircraft, using (unless otherwise authorized by the Contracting Officer) red flags by day, and electric, battery-operated low-intensity red flasher lights by night;

c. Obtain, at an airfield where flying is controlled, additional permission from the control tower operator every time before entering any land area, unless the landing area is marked as hazardous in accordance with paragraph 1.7.4 b. of this clause;

d. Identify all vehicles it operates in landing areas by means of a flag on a staff attached to, and flying above, the vehicle. The flag shall be three feet square, and consist of a checkered pattern of international orange and white squares of 1 foot on each side (except that the flag may vary up to ten percent from each of these dimensions);

e. Mark all other equipment and materials in the landing areas, using the same marking devices as in paragraph 1.7.4 b. of this clause; and

f. Perform work so as to leave that portion of the landing area which is available to aircraft free from hazards, holes, piles of material, and projecting shoulders that might damage an airplane tire.

1.7.5 Safety Precaution Areas

The Contractor shall:

a. Place nothing upon the safety precaution areas without authorization of the Contracting Officer.

b. Mark all equipment and materials in safety precaution areas, using (unless otherwise authorized by the Contracting Officer) red flags by day, and electric, battery-operated, low-intensity red flasher lights by night.

c. Provide all objects placed in safety precaution areas with a red light or red lantern at night, if the objects project above the approach-departure clearance surface or above the transitional surface. (DFAR 252.236-7005)

1.8 EXCAVATION AND TRENCHING

The standards for excavation and trenching are outlined in 29 CFR 1926, Subpart P. These standards shall be followed in addition to those outlined in EM 385-1-1.

1.9 ASBESTOS AND LEAD PAINT

Where demolition of buildings will occur with lead-based paint and/or asbestos-containing materials in place, the following requirements shall be complied with.

1.9.1 Safety Plans

The accident prevention plan shall contain distinct sections entitled Lead Safety Plan and Asbestos Safety Plan. Each section will address the following topics: qualifications of the competent person, laboratory qualifications, personal air monitoring, exposure assessment, work practices for specific Class II asbestos activities, engineering controls to reduce exposure, personal protection equipment, respiratory protection program, hygiene facilities and practices, medical surveillance, employee training, housekeeping, and waste containerization, labeling and disposal,

1.9.2 Safety and Health Oversight

Work which may expose personnel to asbestos and lead paint shall be supervised by a Competent Person as defined in 29 CFR 1926.1101 and 29 CFR 1926.62 and as required in paragraph: Qualifications of this section. The Competent Person shall be able to identify existing and predictable asbestos and lead paint hazards and shall have the authority to take corrective measures to eliminate them. Personal air monitoring shall be overseen by the Competent Person.

1.9.3 Qualifications

1.9.3.1 Competent Person

a. Asbestos

The Contractor's full-time onsite Competent Person shall meet the competent person requirements of 29 CFR 1926 Section .1101 and shall have completed the EPA Model Accreditation Plan (MAP) "Contractor/Supervisor" training accreditation required by 40 CFR 763, Subpart E, Appendix C. The Competent Person shall be experienced in the administration and supervision of asbestos abatement projects, including exposure assessment and monitoring, work practices, protective measures for personnel, setting up and inspecting asbestos abatement work areas, ACM generated waste containment and disposal procedures, decontamination units installation and maintenance requirements, site safety and health requirements, etc. and have had a minimum of 2 years on-the-job experience.

b. Lead Paint

The Contractor's full-time onsite Competent Person shall meet the competent person requirements of 29 CFR 1926 Section .62 and be experienced in administration and supervision of projects involving lead-based paint, including work practices, protective measures for personnel, etc. This person shall have completed a Contractor Supervisor LBP abatement course by an EPA Training Center or an equivalent certification course, and have had a minimum of 2 years on-the-job experience.

1.9.3.2 Testing Laboratory

a. Asbestos

The Contractor shall provide the name, address and telephone number of the independent testing laboratory selected to perform the sample analyses and report the results. The testing laboratory shall be completely independent from the Contractor as recognized by federal, state or local regulations. Written verification, signed by the testing laboratory principal and the Contractor, that the laboratory is fully equipped and proficient in conducting PCM of airborne samples using the methods specified by 29 CFR 1926, Section .1101, OSHA method ID-160, and the most current version of NIOSH Pub No. 84-100 Method 7400. Evidence that the laboratory is currently judged proficient (classified as acceptable) in counting airborne asbestos samples by PCM by successful participation in each of the last 4 rounds in the American Industrial Hygiene Association (AIHA) shall be submitted.

b. Lead Paint

The laboratory performing the analysis shall be an EPA National Lead Laboratory Accreditation Program (NLLAP) accredited laboratory and be rated proficient in the NIOSH/EPA Environmental Lead Proficiency Analytical Testing Program (ELPAT). Currently, the American Association for Laboratory Accreditation (ASLA) and the American Industrial Hygiene Association (AIHA) are the EPA recognized laboratory accreditors.

1.9.4 Exposure Assessment

1.9.4.1 Asbestos

a. Initial Exposure Assessment

The Contractor's Competent Person shall conduct an exposure assessment immediately before or at the initiation of an asbestos abatement operation to ascertain expected exposures during that operation. The assessment shall be completed in time to comply with the requirements which are triggered by exposure data or the lack of a negative exposure assessment, and to provide information necessary to assure that all control systems planned are appropriate for that operation. The assessment shall take into consideration both the monitoring results and all observations, information or calculations which indicate employee exposure to asbestos, including any previous monitoring conducted in the workplace, or of the operations of the Contractor which indicate the levels of airborne asbestos likely to be encountered on the job.

b. Negative Exposure Assessment

The Contractor may provide a negative exposure assessment for the specific asbestos job covered by this Specification Section. When provided, the Negative Exposure Assessment shall be based on one or more of the following criteria:

(1) Objective Data: Objective data demonstrating that the product or material containing asbestos minerals or the activity involving such product or material cannot release airborne fibers in concentrations exceeding the PEL-TWA and PEL-Excursion Limit under those work conditions having the greatest potential for releasing asbestos.

(2) Prior Asbestos Jobs: Where the Contractor has monitored prior asbestos jobs for the PEL and the PEL-Excursion Limit within 12 months of the current job, the monitoring and analysis were performed in compliance with asbestos standard in effect; the data were obtained during work operations conducted under workplace conditions closely resembling the processes, type of material, control methods, work practices, and environmental conditions used and prevailing in the Contractor's current operations; the operations were conducted by employees whose training and experience are no more extensive than that of employees performing the current job; and these data show that under the conditions prevailing and which will prevail in the current workplace, there is a high degree of certainty that the monitoring covered exposure from employee exposures will not exceed the PEL-TWA and PEL-Excursion Limit.

(3) Initial Exposure Monitoring: The results of initial exposure monitoring of the current job, made from breathing zone air samples that are representative of the 8-hour PEL-TWA and 30-minute short-term exposures of each employee. The monitoring covered exposure from operations which are most likely during the performance of the entire asbestos job to result in exposures over the PELs.

1.9.4.2 Lead Paint

For personnel who may be exposed to dust resulting from demolition or removal of painted surfaces, the Contractor is required to perform an exposure assessment to determine personnel exposure levels to lead. This

assessment shall consist of personal air monitoring representative of a full shift. Airborne concentrations of lead shall be collected and analyzed in accordance with 29 CFR 1926 Section .62. Results shall be reported in micrograms per cubic meter of air. The Competent Person shall use personal air monitoring results to determine the effectiveness of engineering controls, the adequacy of PPE and to determine if proper work practices are being employed. The Contracting Officer shall be notified if any personal air monitoring result equals or exceeds 30 micrograms per cubic meter of air. The Contractor shall take steps to reduce the concentration of lead in the air. If results are obtained indicating employee exposure below the action level for lead (30 ug/m3) the Competent Person may recommend to the Contracting Officer, in writing, appropriate reductions in employee protection. Alternatively, as determined by the Competent Person, where the Contractor has previously monitored for lead exposures within the past 12 months during work operations conducted under workplace conditions closely resembling the processes, type of materials, control methods, work practices, and environmental conditions used and prevailing in the Contractor's current operations, the Contractor may, upon approval of the Contracting Officer, use this data in making the initial determination of employee exposure.

1.9.5 Employee Protection

Until monitoring results are received which document that the employee is not exposed above the action level for asbestos or lead, the Contractor shall implement employee protective measures as listed below:

1.9.5.1 Respiratory Protection Program

A respiratory protection program shall be established as required by 29 CFR 1926 Section .103, .1101 and .62 and in accordance with 29 CFR 1910 Section .134. A NIOSH-approved respirator and cartridges appropriate to the job, as determined by the Competent Person, shall be furnished to each employee and visitor potentially exposed to airborne asbestos or lead. A fit test shall be conducted in accordance with applicable sections of 29 CFR 1926.

1.9.5.2 Protective Equipment

The Contractor shall furnish, at no cost to personnel, equipment/clothing for protection from airborne and waterborne asbestos and LBP debris. An adequate supply of disposable full-body coveralls, steel toe/shank boots with nonskid soles or impermeable work boot covers, gloves, hard hats and eye protection shall be worn by workers in regulated work areas. Employees shall be instructed in appropriate practices for donning and removing protective equipment. Protective clothing and equipment shall not be removed from the work site at any time.

1.9.5.3 Decontamination Areas

The employer shall establish a decontamination area that is adjacent to the regulated area for the decontamination of employees and their equipment which is contaminated with asbestos. The decontamination area shall be a designated area shall be covered by an impermeable drop cloth and shall be of sufficient size to accommodate cleaning of equipment and for removing personal protective equipment without spreading contamination beyond the area. The decontamination area shall be established in a manner such that employees must enter and exit the decontamination area through the equipment drop area. Work clothing, must be HEPA vacuumed before it is removed. Equipment and other surfaces shall be cleaned prior to removing

the items from the decontamination area. To prevent cross-contamination, the employer shall provide storage facilities for protective work clothing and equipment that are segregated from storage areas for street clothes and non-contaminated equipment. The employer shall also assure that employees do not leave the workplace wearing any protective clothing or equipment that is required to be worn during the work shift.

1.9.5.4 Handwashing Facilities

The employer shall provide adequate handwashing facilities for use by employees in accordance with 29 CFR 1926.51(f) and shall assure that employees wash their hands and face at the end of the work-shift.

1.9.5.5 Medical Surveillance

a. Asbestos

Before being exposed to airborne asbestos fibers, workers shall be provided with a medical examination as required by 29 CFR 1926, Section .1101(m) and other pertinent state or local requirements. This requirement shall have been satisfied within the last 12 months. The same medical examination shall be given on an annual basis to employees engaged in an occupation involving asbestos and within 30 calendar days before or after the termination of employment in such occupation. X-ray films of asbestos workers shall be identified to the consulting radiologist and medical record jackets shall be marked with the word "asbestos."

b. Lead Paint

Medical surveillance for lead shall comply with the requirements of 29 CFR 1926 Section 62(j) and other pertinent state or local requirements. Analysis for blood lead and zinc protoporphyrin levels shall be included in the examination portion of the medical surveillance program.

1.9.5.6 Training

a. Asbestos

Workers conducting Class II asbestos work shall be provided training prior to the time of job assignment and, at least, annually. Training shall include, at a minimum the elements specified in 29 CFR 1926 Section .1101(k)(9)"Employee Information and Training".

b. Lead Paint

Workers potentially exposed to lead-contaminated dust shall be provided training regarding lead hazards prior to the time of job assignment and, at least, annually. Training shall include, at a minimum the elements specified in 29 CFR 1926 Section .62(l) "Employee Information and Training".

1.9.6 Engineering Controls

Engineering controls shall be employed to maintain the integrity of the asbestos material and lead paint and to minimize the potential for release of asbestos fibers or generation of lead-containing dust. Asbestos-containing materials shall not be cut, ground, abraded or handled in any other manner that may render the material friable as described in 40 CFR 61, Subpart M and OSHA 29 CFR 1926.1101. The contractor shall describe proposed engineering control methods and practices in the lead safety and

asbestos safety portions of the accident prevention plan.

1.10 EQUIPMENT NOTIFICATION & FAA CRANE PERMIT

The Contractor shall notify the COR (60) days prior to arrival of any equipment over twenty (20) feet high. A crane permit is needed each time a crane is used. There is no single permit for the entire construction period. The Contractor shall provide the height of crane, location and dates of use to the 21 CES/CECC through the Contracting Officer at least 60 days before use of crane. The 746-1 permits (Form 7460-1) will be processed by the 21/CECC. This permit will only cover the time the crane is needed. If the crane is needed at a later date there will have to be another application (same information as listed above) submitted 60 days prior to the use of the crane and approved through the FAA.

1.11 FIRE PROTECTION REQUIREMENTS

1.11.1 Smoking

Smoking is prohibited in accordance with AFI 40-102 (3 June 1994) in all facilities except in areas posted with "Designated Smoking Area" signs. Smoking is also prohibited in all Air Force vehicles.

1.11.2 Fire Extinguishers

The Contractor shall furnish and maintain on site, during the demolition and construction phases of the project, approved fire extinguishers in good working condition, IAW NFPA 10 or as directed by the Peterson AFB Fire Department, 21 CES/CEF.

1.11.3 Work in Fire Protected Areas

The Contractor shall notify the CO/COR prior to performing any work in areas protected by fire protection detection/suppression systems. After notification to CO/COR, the Contractor shall notify the Peterson Air Force Base Fire Department. Fire protection personnel will survey the area to determine if fire protection systems will need to be disconnected. At the end of each day, and after all work is completed, fire department personnel shall be notified by the Contractor so the system can be brought back to normal status.

1.12 PROTECTION OF WATER RESOURCES

1.12.1 ACCIDENTAL DISCHARGE

If any hazardous materials are accidentally discharged into any stream, pond, sanitary sewer, storm sewer, or industrial waste water system, the Contractor shall immediately notify the 21 CES Environmental Coordinator through the CO/COR.

1.13 CLEAN UP AND WASTE DISPOSAL

The Contractor shall keep the construction area clean at all times and shall remove accumulated debris each day. Prior to blocking any exit or entrance, hallway etc., the Contractor must receive approval from the CO/COR and the Peterson AFB Fire Department. Upon completion of the work, the Contractor shall remove all debris, excess materials, tools and

equipment, temporary buildings and barricades, etc., from the construction site and shall clean all areas used in the performance of the work under this contract. If at any time, debris or materials become a safety hazard to personnel or Government equipment, the Contractor will be directed to correct the hazard. The Contractor shall abide by directions given by the CO/COR at no cost to the Government, regardless of the delay clean up may cause. Safety personnel will periodically monitor the work site.

1.14 WELDING

1.14.1 Welding and Flame Cutting

The Contractor is responsible for notifying the Peterson AFB Fire Department(Telephone 556-4242), within 24 hours prior to starting work to obtain **AF Form 592.** For welding, cutting and any open flame operation,a welding permit (**AF Form 592)** must be issued to the Contractor by the Fire Department after work site inspection and prior to any welding or cutting operations. Proper flashback and backflow devices are mandatory for tank type equipment as required by 29 CFR 1910.252 through 254 and Section 10, EM 385-1-1, Special provisions must be made if welding involves lead or other critical metal alloys, (See para 10.B.04, EM 385-1-1)

1.14.2 Grounding for Welding Equipment

All grounding for welding equipment shall be made within three (30) feet to the item being welded.

1.14.3 Securing of Welding Tanks

All welding fuel/oxidizer tanks must be secured either in standard cart devices or otherwise secured to preclude accidental damage and hazardous situations. Chain or wire rope must be used to secure any spare containers. (See EM 385-1-1, para 20.D.08)

1.14.4 Welding in Confined Spares

Welding or cutting materials in confined space is critically regulated by 29 CFR 1910.146. Adequate exhaust and airflow requirements are clearly defined. The Contractor shall provide local exhaust ventilation for workers/observers during welding operations as required by OSHA 29 CFR 1910.252. (See section 12 for required program compliance and permits.)

1.15 CONSTRUCTION PERMIT

The Contractor shall request a Construction Permit (AF Form 103) prior to performing any construction activities on Base. Permits can be obtained from the Contracting Officer Representative and will require a 10 Day lead time for approval.

1.16 POWER EQUIPMENT

Power equipment use increases significantly the hazard not only to Contractor personnel, but to other Peterson AFB resources. Power tools and equipment shall be used by personnel who have been trained and have a working knowledge for the safe use of the tools or equipment. Electrical tools and equipment must meet UL requirements as specified in the National Electric Code (NEC) to include grounding needs. Equipment must be in good condition, free from defect, and have appropriate maintenance records available at the work site. Power Actuated, including Ramset, tools and

equipment will be used only by personnel who have been trained and certified by the applicable manufacturer in the operation of that particular tool/equipment. POWER ACTUATED EQUIPMENT SHALL NOT BE USED IN OR ON OCCUPIED BUILDINGS, DUE TO INHERENT PENETRATION ABILITY OF THE EQUIPMENT, WITHOUT SPECIFIC APPROVAL OF PETERSON AFB SAFETY OFFICIALS.

1.17 TOXIC OR HAZARDOUS MATERIALS

The Contracting Officer of COR shall be notified of the location of any/all to toxic or hazardous materials used or removed by the Contractor. All toxic or hazardous materials utilized by the Contractor, or removed or handled as part of Contractor operations, shall be stored, handled, utilized, and disposed of in a manner to prevent any possibility of exposure to any non-contractor personnel. "Exposure" is defined as levels exceeding 1/2 the most stringent Federal, State, Air Force 2992D or other recommended industry standards. Material shall also be stored, handled, utilized, and disposed of in a manner to prevent any reasonable possibility of pollution and/or damage to the environment. The Contractor shall report all spills to the COR who will in turn report the incident(s) to all base officials concerned.

1.18 ASBESTOS POTENTIAL

Asbestos-Containing Materials (ACM) may be found in various areas at Peterson AFB. All reasonable efforts will be made to pre-identify such ACM. but situations may be encountered by Contractor personnel which have not been previously identified. If so, Contractor personnel shall contact the CO/COR immediately so that appropriate personnel can be notified. The Contractor shall ensure that the suspect materials remain protected from damage and undisturbed. In the event that materials have been disturbed, immediately isolate and secure the area with plastic covering. See Section 13280 ASBESTOS ABATEMENT for information regarding asbestos-containing materials that have been identified for removal as part of this project.

1.19 CONFINED SPACE OPERATIONS AND PERMITS

Confined space entry and operations are controlled on Peterson AFB in accordance with 29 CFR 1910.146. Confined Spaces Classifications at Peterson AFB are identified at the end of this section.

1.19.1 Permits

The Air Force permit system (AF Form 1024) shall be used by all Contractors with a need to enter confined spaces. Master permits may be used by Contractors.

Permits shall be requested through the COR so approval can be granted no later than two work days prior to the required entry.

1.19.2 Training

The Contractor shall ensure personnel are trained to meet OSHA standards and EM 385-1-1 requirements.

(a) The Contractor shall provide a certificate of training or a signed letter on company letterhead with a list of employees who will be used for confined space entry. A copy of the training plan for these personnel shall be included in the Accident Prevention Plan.

(b) The certificate or letter shall provide the name of the individual, the date of training, level of training, i.e., entrants, attendants or rescue function and the respiratory and monitoring equipment the individual is trained to use.

1.19.3 Equipment

Contractor personnel shall be equipped by the Contractor to meet confined space requirements.

(a) The Contractor shall equip his personnel with the proper personal protection equipment (PPE) and ensure it meet the requirements for the desired entry.

(b) The Contractor shall provide air monitoring equipment to meet the desired entry needs and ensure personnel are trained in its use.

(c) The Contractor shall provide evacuation alarm devices to meet OSHA 29 CFR 1910.146 requirements. Alarms may be built into the monitoring equipment provided written instructions are available to reflect the intended worker reaction.

(d) The Contractor shall provide all warning barricades, devices and warning signs necessary to ensure adequate warning of confined space work in progress.

(e) The Contractor shall provide any auxiliary equipment needed to reduce confined space hazard class level to an acceptable level for safe entry.

1.19.4 Rescue

Rescue operations are a Contractor responsibility.

(a) Rescue and organizational rescue shall be performed by Contractor personnel.

(b) Base level rescue operations will be provided by 21 CES/CEF.

1.19.5 Permit Required Confined Space Locations:

The Contractor shall notify the COR at least two days prior to entry into a Permit Required Confined Space Location (Immediately Dangerous to Life or Health). Installation Fire, Safety and Health officials will be on site at the time of the entry.

1.19.6 Termination

Installation Fire, Safety of Health officials have the authority to terminate any entry without prior notification when they determine the operation exceeds the bounds permitted. They shall terminate the operation by notifying the site supervisor.

1.19.7 Debriefing

The Contractor shall provide the COR and Safety, Fire and Health officials a debriefing of problems related to the confined space entry within 24 hours of the entry. The debriefing shall be in accordance with 29 CFR 1910.146(c) (9) (iii).

1.20 VISUAL AND SAFETY BARRIER CONSTRUCTION FENCE

At the boundary of the work area(s) the Contractor shall install and maintain a six (6) foot high (1.8 meters) chain link fence with gates. The fence shall be located such that each phase of the project site is fenced during construction. The fence shall have a warning sign(s). The sign(s) will have "DANGER CONSTRUCTION AREA" on them in two (2) inch red lettering. The background of the signs will be white. Upon completion of the work, all fence materials shall be disposed of outside the limits of Peterson AFB.

1.21 CLEANLINESS OF PAVED SURFACES

The Contractor shall keep all paved surfaces traveled by his construction equipment clean at all times and, specifically, free from small stones, soil or other materials which might damage jet aircraft. The traveled areas shall be cleaned using a self-propelled vacuum, vacuum truck, or other appropriate equipment and shall be cleaned to the approval of the Using Agency through the Contracting Officer's Representative.PART 2 PRODUCTS (NOT APPLICABLE)

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SECTION 02440

TRAFFIC SIGNS
03/04

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 36/A 36M	(2003) Carbon Structural Steel
ASTM A 123/A 123M	(2002) Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A 499	(1997) Steel Bars and Shapes, Carbon Rolled from "T" Rails
ASTM A 653/A 653M	(2003) Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM B 209	(2002a) Aluminum and Aluminum-Alloy Sheet and Plate
ASTM D 4956	(2001a) Retroreflective Sheeting for Traffic Control

FEDERAL HIGHWAY ADMINISTRATION

MUTCD	(2003) Manual on Uniform Traffic Control Devices

1.2 SUBMITTALS (NOT USED)

1.3 GENERAL

All sign faces shall conform to MUTCD.

PART 2 PRODUCTS

2.1 TRAFFIC SIGN POSTS

2.1.1 Steel Flanged Channel Section (U-Shape)

Steel posts shall be fabricated from steel conforming to ASTM A 36/A 36M or ASTM A 499 and shall have a minimum yield strength of 30 ksi and a minimum tensile strength of 50 ksi. Steel posts shall have 5/16 to 3/8 inch diameter holes spaced at 1 or 2 inch centers punched or drilled along the centerline of the web prior to galvanizing for the entire length of the

post. Posts shall be galvanized after punching in accordance with ASTM A 123/A 123M.

2.1.2 Perforated Steel Tube

Steel posts shall be fabricated from steel conforming to either ASTM A 653/A 653M, structural steel, Grade 50, Class 1, coating designation G90 or ASTM A 1011, structural steel, Grade 50, hot-dip galvanized after punching in accordance with ASTM A 123/A 123M. Steel posts shall have prepunched holes approximately 7/16 inch in diameter spaced at approximately 1 inch centers along each side of the tube for the entire length of the post.

2.2 ALUMINUM SIGN PANELS

Aluminum sign panels shall conform to ASTM B 209, alloy no.-temper 6061-T6 or 5052-H38. The blanks shall be free from laminations, blisters, open seams, pits, holes, other defects that may affect their appearance or use. The thickness shall be uniform and the blank commercially flat.

2.3 DELINEATOR POSTS

Steel posts shall be fabricated from steel conforming to ASTM A 36/A 36M or ASTM A 499 and shall have a minimum yield strength of 30 ksi and a minimum tensile strength of 50 ksi. Posts shall be galvanized after punching in accordance with ASTM A 123/A 123M.

2.4 TRAFFIC SIGN RETROREFLECTIVE SHEETING

Retroreflective sheeting shall conform to ASTM D 4956, Type III, VII, VIII or IX. Use type L-1 letters, numerals, arrows, symbols, and borders. All retroreflective sheeting shall have a precoated adhesive which will permanently adhere to the sign panel surface. Backing shall be Class 1, 2 or 3.

2.5 DELINEATOR RETROREFLECTORS

Retroreflectors shall be a 3-inch minimum diameter acrylic plastic lens with prismatic optical elements and a smooth, clear, transparent face. The back shall be fabricated from similar material and fused to the lens around the entire perimeter to form a homogeneous unit. The units shall be permanently sealed against the intrusion of dust, water, or air. The retroreflector unit shall be mounted in a housing fabricated from 0.063-inch aluminum alloy or similar, or from cold-rolled, hot dip, galvanized steel, having a thickness of 0.064 inches.

2.6 HARDWARE

Bolts, nuts and metal washers shall be either aluminum alloy or commercial quality steel, hot-dip galvanized or cadmium plated after fabrication. Fiber washers shall be of commercial quality.

PART 3 EXECUTION

3.1 GENERAL

3.2 SIGN POSTS

Sign posts shall consist of a base post and sign post. Steel sign base posts shall be driven with a suitable driving head. Sign posts shall be

attached to base posts. Any posts damaged during driving or otherwise shall be replaced at no additional cost to the Government. [Sign posts shall be painted in accordance with Section 09900 PAINTS AND COATINGS. Color shall be as indicated in Section 09915 COLOR SCHEDULE.]

3.3 SIGN PANELS

Clean, degrease and etch the face of metal panels using methods recommended by the retroreflective sheeting manufacturer. After cleaning and degreasing, retroreflective sheeting material shall be applied to the sign panels as recommended by the manufacturer. Shearing, cutting and punching shall be performed prior to preparing the blanks for application of reflective material. Holes shall not be field drilled in any part of the panel. [The back side of all sign panels shall be stamped with the month and year that the sign was manufactured. The date shall be located on the lower right side of the back of the sign panel and shall be approximately 1/4 inch high. The date shall be stamped into the sign panel material for a permanent record.] [The backs of sign panels shall be painted in accordance with Section 09900 PAINTS AND COATINGS. Color shall be as indicated in Section 09915 COLOR SCHEDULE.] Any damaged sign panels shall be replaced at no additional cost to the Government.

3.4 LETTERS, NUMERALS, ARROWS, SYMBOLS, AND BORDERS

Letters, numerals, arrows, symbols, and borders shall be applied on the retroreflective sheeting or opaque background of the sign using the direct or reverse screen process. Messages and borders of a color darker than the background shall be applied to the paint or the retroreflective sheeting using the direct process. Messages and borders shall be of a color lighter than the sign background and shall be applied using the reverse screen process. Opaque or transparent colors, inks, and paints of the type and quality recommended by the retroreflective sheeting manufacturer shall be used in the screen process. The screening shall be performed in a manner that results in a uniform color and tone, with sharply defined edges of legends and borders and without blemishes on the sign background that will affect intended use. The signs shall be air dried or baked after screening according to the manufacturer's recommendations to provide a smooth hard finish. Any signs with blister's or other blemishes shall be rejected.

3.5 DELINEATOR MARKERS

Attach delineators to posts according to the manufacturer's recommendations.

3.6 LOCATION AND POSITION OF SIGNS

All signs shall be located and erected in accordance with the drawings and MUTCD. Unless otherwise shown, signs shall be erected with the sign faces and posts vertical. To reduce specular glare (mirror reflection), sign panels shall be turned 3 degrees away from the road in the direction of travel. The Contracting Officer's Representative shall inspect all signs for specular reflection at night after installation has been completed. If specular reflection is apparent on any sign, it shall be adjusted by the Contractor at his expense to eliminate or minimize specular reflection to the satisfaction of the Contracting Officer's Representative.

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1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z87.1	(1989; Errata; Z87.1a) Occupational and Educational Eye and Face Protection
ANSI Z88.2	(1992) Respiratory Protection
ANSI Z9.2	(1979; R 1991) Fundamentals Governing the Design and Operation of Local Exhaust Systems

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 1331	(1989; R 1995) Surface and Interfacial Tension of Solutions of Surface-Active Agents
ASTM D 4397	(1996) Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications
ASTM E 1368	(2000) Visual Inspection of Asbestos Abatement Projects

COMPRESSED GAS ASSOCIATION (CGA)

CGA G-7	(1990) Compressed Air for Human Respiration
CGA G-7.1	(1997) Commodity Specification for Air

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 701	(1999) Methods of Fire Tests for Flame-Resistant Textiles and Films

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH 84-100	(1984; Supple 1985, 1987, 1988 & 1990) NIOSH Manual of Analytical Methods

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2003) U.S. Army Corps of Engineers Safety and Health Requirements Manual

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA 340/1-90/018	(1990) Asbestos/NESHAP Regulated Asbestos Containing Materials Guidance
EPA 340/1-90/019	(1990) Asbestos/NESHAP Adequately Wet Guidance
EPA 560/5-85-024	(1985) Guidance for Controlling Asbestos-Containing Materials in Buildings

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1926	Safety and Health Regulations for Construction
40 CFR 61	National Emission Standards for Hazardous Air Pollutants
40 CFR 763	Asbestos
42 CFR 84	Approval of Respiratory Protective Devices
49 CFR 107	Hazardous Materials Program Procedures
49 CFR 171	General Information, Regulations, and Definitions
49 CFR 172	Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
49 CFR 173	Shippers - General Requirements for Shipments and Packagings

UNDERWRITERS LABORATORIES (UL)

UL 586	(1996; Rev thru Aug 1999) High-Efficiency, Particulate, Air Filter Units

1.2 DEFINITIONS

a. Adequately Wet: A term defined in 40 CFR 61, Subpart M, and EPA 340/1-90/019 meaning to sufficiently mix or penetrate with liquid to prevent the release of particulate. If visible emissions are

observed coming from asbestos-containing material (ACM), then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wetted.

b. Aggressive Method: Removal or disturbance of building material by sanding, abrading, grinding, or other method that breaks, crumbles, or disintegrates intact asbestos-containing material (ACM).

c. Amended Water: Water containing a wetting agent or surfactant with a surface tension of at least 29 dynes per square centimeter when tested in accordance with ASTM D 1331.

d. Asbestos: Asbestos includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophylite asbestos, actinolite asbestos, and any of these minerals that have been chemically treated and/or altered.

e. Asbestos-Containing Material (ACM): Any materials containing more than one percent asbestos.

f. Asbestos Fiber: A particulate form of asbestos, 5 micrometers or longer, with a length-to-width ratio of at least 3 to 1.

g. Authorized Person: Any person authorized by the Contractor and required by work duties to be present in the regulated areas.

h. Building Inspector: Individual who inspects buildings for asbestos and has EPA Model Accreditation Plan (MAP) "Building Inspector" training; accreditation required by 40 CFR 763, Subpart E, Appendix C.

i. Certified Industrial Hygienist (CIH): An Industrial Hygienist certified in the practice of industrial hygiene by the American Board of Industrial Hygiene.

j. Class I Asbestos Work: Activities defined by OSHA involving the removal of thermal system insulation (TSI) and surfacing ACM.

k. Class II Asbestos Work: Activities defined by OSHA involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos - containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastic. Certain "incidental" roofing materials such as mastic, flashing and cements when they are still intact are excluded from Class II asbestos work. Removal of small amounts of these materials which would fit into a glovebag may be classified as a Class III job.

l. Class III Asbestos Work: Activities defined by OSHA that involve repair and maintenance operations, where ACM, including TSI and surfacing ACM, is likely to be disturbed. Operations may include drilling, abrading, cutting a hole, cable pulling, crawling through tunnels or attics and spaces above the ceiling, where asbestos is actively disturbed or asbestos-containing debris is actively disturbed.

m. Class IV Asbestos Work: Maintenance and custodial construction

activities during which employees contact but do not disturb ACM and activities to clean-up dust, waste and debris resulting from Class I, II, and III activities. This may include dusting surfaces where ACM waste and debris and accompanying dust exists and cleaning up loose ACM debris from TSI or surfacing ACM following construction.

n. Clean room: An uncontaminated room having facilities for the storage of employees' street clothing and uncontaminated materials and equipment.

o. Competent Person: In addition to the definition in 29 CFR 1926, Section .32(f), a person who is capable of identifying existing asbestos hazards as defined in 29 CFR 1926, Section .1101, selecting the appropriate control strategy, has the authority to take prompt corrective measures to eliminate them and has EPA Model Accreditation Plan (MAP) "Contractor/Supervisor" training; accreditation required by 40 CFR 763, Subpart E, Appendix C.

p. Contractor/Supervisor: Individual who supervises asbestos abatement work and has EPA Model Accreditation Plan "Contractor/Supervisor" training; accreditation required by 40 CFR 763, Subpart E, Appendix C.

q. Critical Barrier: One or more layers of plastic sealed over all openings into a regulated area or any other similarly placed physical barrier sufficient to prevent airborne asbestos in a regulated area from migrating to an adjacent area.

r. Decontamination Area: An enclosed area adjacent and connected to the regulated area and consisting of an equipment room, shower area, and clean room, which is used for the decontamination of workers, materials, and equipment that are contaminated with asbestos.

s. Demolition: The wrecking or taking out of any load-supporting structural member and any related razing, removing, or stripping of asbestos products.

t. Disposal Bag: A 6 mil thick, leak-tight plastic bag, pre-labeled in accordance with 29 CFR 1926, Section .1101, used for transporting asbestos waste from containment to disposal site.

u. Disturbance: Activities that disrupt the matrix of ACM, crumble or pulverize ACM, or generate visible debris from ACM. Disturbance includes cutting away small amounts of ACM, no greater than the amount which can be contained in 1 standard sized glovebag or waste bag, not larger than 60 inches in length and width in order to access a building component.

v. Equipment Room or Area: An area adjacent to the regulated area used for the decontamination of employees and their equipment.

w. Employee Exposure: That exposure to airborne asbestos that would occur if the employee were not using respiratory protective equipment.

x. Fiber: A fibrous particulate, 5 micrometers or longer, with a length to width ratio of at least 3 to 1.

y. Friable ACM: A term defined in 40 CFR 61, Subpart M and EPA 340/1-90/018 meaning any material which contains more than 1 percent asbestos, as determined using the method specified in 40 CFR 763, Subpart E, Appendix A, Section 1, Polarized Light Microscopy (PLM), that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent, as determined by a method other than point counting by PLM, the asbestos content is verified by point counting using PLM.

z. Glovebag: Not more than a 60 by 60 inch impervious plastic bag-like enclosure affixed around an asbestos-containing material, with glove-like appendages through which material and tools may be handled.

aa. High-Efficiency Particulate Air (HEPA) Filter: A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter.

bb. Homogeneous Area: An area of surfacing material or thermal system insulation that is uniform in color and texture.

cc. Industrial Hygienist: A professional qualified by education, training, and experience to anticipate, recognize, evaluate, and develop controls for occupational health hazards.

dd. Intact: ACM which has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix. Removal of "intact" asphaltic, resinous, cementitious products does not render the ACM non-intact simply by being separated into smaller pieces.

ee. Model Accreditation Plan (MAP): USEPA training accreditation requirements for persons who work with asbestos as specified in 40 CFR 763, Subpart E, Appendix C.

ff. Modification: A changed or altered procedure, material or component of a control system, which replaces a procedure, material or component of a required system.

gg. Negative Exposure Assessment: A demonstration by the Contractor to show that employee exposure during an operation is expected to be consistently below the OSHA Permissible Exposure Limits (PELs).

hh. NESHAP: National Emission Standards for Hazardous Air Pollutants. The USEPA NESHAP regulation for asbestos is at 40 CFR 61, Subpart M.

ii. Nonfriable ACM: A NESHAP term defined in 40 CFR 61, Subpart M and EPA 340/1-90/018 meaning any material containing more than 1 percent asbestos, as determined using the method specified in 40 CFR 763, Subpart E, Appendix A, Section 1, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.

jj. Nonfriable ACM (Category I): A NESHAP term defined in 40 CFR 61, Subpart E and EPA 340/1-90/018 meaning asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing

products containing more than 1 percent asbestos as determined using the method specified in 40 CFR 763, Subpart F, Appendix A, Section 1, Polarized Light Microscopy.

kk. Nonfriable ACM (Category II): A NESHAP term defined in 40 CFR 61, Subpart E and EPA 340/1-90/018 meaning any material, excluding Category I nonfriable ACM, containing more than 1 percent asbestos, as determined using the methods specified in 40 CFR 763, Subpart F, Appendix A, Section 1, Polarized Light Microscopy, that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

ll. Permissible Exposure Limits (PELs):

(1) PEL-Time weighted average(TWA): Concentration of asbestos not in excess of 0.1 fibers per cubic centimeter of air (f/cc) as an 8 hour time weighted average (TWA), as determined by the method prescribed in 29 CFR 1926, Section .1101, Appendix A, or the current version of NIOSH 84-100 analytical method 7400.

(2) PEL-Excursion Limit: An airborne concentration of asbestos not in excess of 1.0 f/cc of air as averaged over a sampling period of 30 minutes as determined by the method prescribed in 29 CFR 1926, Section .1101, Appendix A, or the current version of NIOSH 84-100 analytical method 7400.

mm. Regulated Area: An OSHA term defined in 29 CFR 1926, Section .1101 meaning an area established by the Contractor to demarcate areas where Class I, II, and III asbestos work is conducted; also any adjoining area where debris and waste from such asbestos work accumulate; and an area within which airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the permissible exposure limit.

nn. Removal: All operations where ACM is taken out or stripped from structures or substrates, and includes demolition operations.

oo. Repair: Overhauling, rebuilding, reconstructing, or reconditioning of structures or substrates, including encapsulation or other repair of ACM attached to structures or substrates. If the amount of asbestos so "disturbed" cannot be contained in 1 standard glovebag or waste bag, Class I precautions are required.

pp. Spills/Emergency Cleanups: Cleanup of sizable amounts of asbestos waste and debris which has occurred, for example, when water damage occurs in a building, and sizable amounts of ACM are dislodged. A Competent Person evaluates the site and ACM to be handled, and based on the type, condition and extent of the dislodged material, classifies the cleanup as Class I, II, or III. Only if the material was intact and the cleanup involves mere contact of ACM, rather than disturbance, could there be a Class IV classification.

qq. Surfacing ACM: Asbestos-containing material which contains more than 1% asbestos and is sprayed-on, troweled-on, or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes.

rr. Thermal system insulation (TSI) ACM: ACM which contains more than 1% asbestos and is applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain or water condensation.

ss. Transite: A generic name for asbestos cement wallboard and pipe.

tt. Worker: Individual (not designated as the Competent Person or a supervisor) who performs asbestos work and has completed asbestos worker training required by 29 CFR 1926, Section .1101, to include EPA Model Accreditation Plan (MAP) "Worker" training; accreditation required by 40 CFR 763, Subpart E, Appendix C, if required by the OSHA Class of work to be performed or by the state where the work is to be performed.

1.3 DESCRIPTION OF WORK

Buildings scheduled for demolition and removal as part of this project (Buildings 365, 391, and 880) are known to contain asbestos-containing material requiring removal prior to demolition. Several types of asbestos-containing materials have been identified in the buildings, including vinyl asbestos floor tile in Building 365; mastic on acoustical tiles, floor tile mastic, and vinyl asbestos floor tiles with associated mastic in Building 391; and wall plaster, mudded joint packings on water pipe elbows, vinyl asbestos floor tile, floor tile mastic, and glued-on ceiling tiles in Building 880. Building 880 contains large amounts of asbestos-containing wall plaster. Specific information is available in the attached asbestos surveys. The work covered by this section includes the removal of asbestos-containing materials (ACM) which are encountered during demolition activities associated with this project and describes procedures and equipment required to protect workers and occupants of the regulated area from contact with airborne asbestos fibers and ACM dust and debris. Activities include OSHA Class I and Class II work operations involving ACM. The work also includes containment, storage, transportation and disposal of the generated ACM wastes. More specific operational procedures shall be detailed in the required Accident Prevention Plan and its subcomponents, the Asbestos Hazard Abatement Plan and Activity Hazard Analyses required in paragraph SAFETY AND HEALTH PROGRAM AND PLANS.

1.3.1 Abatement Work Tasks

The specific ACM to be abated is identified on the detailed plans and project drawings.

1.3.2 Unexpected Discovery of Asbestos

For any previously untested building components suspected to contain asbestos and located in areas impacted by the work, the Contractor shall notify the Contracting Officer (CO) who will have the option of ordering up to 6 bulk samples to be obtained at the Contractor's expense and delivered to a laboratory accredited under the National Institute of Standards and Technology (NIST) "National Voluntary Laboratory Accreditation Program (NVLAP)" and analyzed by PLM at no additional cost to the Government. Any additional components identified as ACM that have been approved by the Contracting Officer for removal shall be removed by the Contractor and will be paid for by an equitable adjustment to the contract price under the CONTRACT CLAUSE titled "changes". Sampling activities undertaken to determine the presence of additional ACM shall be conducted by personnel

who have successfully completed the EPA Model Accreditation Plan (MAP) "Building Inspector" training course required by 40 CFR 763, Subpart E, Appendix C.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Respiratory Protection Program; G

Records of the respirator program.

Cleanup and Disposal; G

Waste shipment records. Weigh bills and delivery tickets shall be furnished for information only.

Detailed Drawings; G

Descriptions, project drawings, and site layout to include worksite containment area techniques and boundaries of each regulated area.

Materials and Equipment; G

Manufacturer's catalog data for all materials and equipment to be used in the work, including brand name, model, capacity, performance characteristics and any other pertinent information. Material Safety Data Sheets for all chemicals to be used onsite in the same format as implemented in the Contractor's HAZARD COMMUNICATION PROGRAM. Data shall include, but shall not be limited to, the following items:

a. High Efficiency Filtered Air (HEPA) local exhaust equipment

b. Vacuum cleaning equipment

c. Pressure differential monitor for HEPA local exhaust equipment

d. Air monitoring equipment

e. Respirators

f. Personal protective clothing and equipment

g. Glovebag

h. Not Used

i. Disposal Containers

j. Sheet Plastic

k. Wetting Agent

l. Not Used

m. Prefabricated Decontamination Unit (if used)

n. Other items

o. Chemical encapsulant

p. Not Used

q. Material Safety Data Sheets (for all chemicals proposed)

Qualifications; G

A written report providing evidence of qualifications for personnel, facilities and equipment assigned to the work.

Training Program; G

A copy of the written project site-specific training material as indicated in 29 CFR 1926, Section .1101 that will be used to train onsite employees. The training document shall be signed by the Contractor's Designated IH and Competent Person.

Medical Requirements; G

Physician's written opinion.

SD-06 Test Reports

Exposure Assessment and Air Monitoring; G

Initial exposure assessments, negative exposure assessments, air-monitoring results and documentation.

Local Exhaust Ventilation; G

Pressure differential recordings.

Licenses, Permits and Notifications; G

Licenses, permits, and notifications.

SD-07 Certificates

Vacuum, Filtrationand Ventilation Equipment; G

Manufacturer's certifications showing compliance with ANSI Z9.2 for:

a. Vacuums.

b. Water filtration equipment.

c. Ventilation equipment.

d. Other equipment required to contain airborne asbestos fibers.

1.5 QUALIFICATIONS

1.5.1 Written Qualifications and Organization Report

The Contractor shall furnish a written qualifications and organization report providing evidence of qualifications of the Contractor, Contractor's Project Supervisor, Designated Competent Person, supervisors and workers; Designated IH (person assigned to project and firm name); independent testing laboratory (including name of firm, principal, and analysts who will perform analyses); all subcontractors to be used including disposal transportation and disposal facility firms, subcontractor supervisors, subcontractor workers; and any others assigned to perform asbestos abatement and support activities. The report shall include an organization chart showing the Contractor's staff organization for this project by name and title, chain of command and reporting relationship with all subcontractors. The report shall be signed by the Contractor, the Contractor's onsite project manager, Designated Competent Person, Designated IH, designated testing laboratory and the principals of all subcontractors to be used. The Contractor shall include the following statement in the report: "By signing this report I certify that the personnel I am responsible for during the course of this project fully understand the contents of 29 CFR 1926, Section .1101, 40 CFR 61, Subpart M, and the federal, state and local requirements specified in paragraph SAFETY AND HEALTH PROGRAM AND PLANS for those asbestos abatement activities that they will be involved in."

1.5.2 Specific Requirements

The Contractor shall designate in writing, personnel meeting the following qualifications:

a. Designated Competent Person: The name, address, telephone number, and resume of the Contractor's Designated Competent Person shall be provided. Evidence that the full-time Designated Competent Person is qualified in accordance with 29 CFR 1926, Sections .32 and .1101, has EPA Model Accreditation Plan (MAP) "Contractor/Supervisor" training accreditation required by 40 CFR 763, Subpart E, Appendix C, and is experienced in the administration and supervision of asbestos abatement projects, including exposure assessment and monitoring, work practices, abatement methods, protective measures for personnel, setting up and inspecting asbestos abatement work areas, evaluating the integrity of containment barriers, placement and operation of local exhaust systems, ACM generated waste containment and disposal procedures, decontamination units installation and maintenance requirements, site safety and health requirements, notification of other employees onsite, etc. The duties of the

Competent Person shall include the following: controlling entry to and exit from the regulated area; supervising any employee exposure monitoring required by 29 CFR 1926, Section .1101; ensuring that all employees working within a regulated area wear the appropriate personal protective equipment (PPE), are trained in the use of appropriate methods of exposure control, and use the hygiene facilities and decontamination procedures specified; and ensuring that engineering controls in use are in proper operating conditions and are functioning properly. The Designated Competent Person shall be responsible for compliance with applicable federal, state and local requirements, the Contractor's Accident Prevention Plan and Asbestos Hazard Abatement Plan. The Designated Competent Person shall provide, and the Contractor shall submit, the "Contractor/Supervisor" course completion certificate and the most recent certificate for required refresher training with the employee "Certificate of Worker Acknowledgment" required by this paragraph. The Contractor shall submit evidence that this person has a minimum of 2 years of on-the-job asbestos abatement experience relevant to OSHA competent person requirements. The Designated Competent Person shall be onsite at all times during the conduct of this project.

b. Project and Other Supervisors: The Contractor shall provide the name, address, telephone number, and resume of the Project Supervisor and other supervisors who have responsibility to implement the Accident Prevention Plan, including the Asbestos Hazard Abatement Plan and Activity Hazard Analyses, the authority to direct work performed under this contract and verify compliance, and have EPA Model Accreditation Plan (MAP) "Contractor/Supervisor" training accreditation required by 40 CFR 763, Subpart E, Appendix C. The Project Supervisor and other supervisors shall provide, and the Contractor shall submit, the "Contractor/Supervisor" course completion certificate and the most recent certificate for required refresher training with the employee "Certificate of Worker Acknowledgment" required by this paragraph. The Contractor shall submit evidence that the Project Supervisor has a minimum of 2 years of on-the-job asbestos abatement experience relevant to project supervisor responsibilities and the other supervisors have a minimum of 1 year on-the-job asbestos abatement experience commensurate with the responsibilities they will have on this project.

c. Designated Industrial Hygienist: The Contractor shall provide the name, address, telephone number, resume and other information specified below for the Industrial Hygienist (IH) selected to prepare the Contractor's Asbestos Hazard Abatement Plan, prepare and perform training, direct air monitoring and assist the Contractor's Competent Person in implementing and ensuring that safety and health requirements are complied with during the performance of all required work. The Designated IH shall be a person who is board certified in the practice of industrial hygiene as determined and documented by the American Board of Industrial Hygiene (ABIH), has EPA Model Accreditation Plan (MAP) "Contractor/Supervisor" training accreditation required by 40 CFR 763, Subpart E, Appendix C, and has a minimum of 2 years of comprehensive experience in planning and overseeing asbestos abatement activities. The Designated IH shall provide, and the Contractor shall submit, the "Contractor/Supervisor" course completion certificate and the most recent certificate for

required refresher training with the employee "Certificate of Worker Acknowledgment" required by this paragraph. The Designated IH shall be completely independent from the Contractor according to federal, state, or local regulations; that is, shall not be a Contractor's employee or be an employee or principal of a firm in a business relationship with the Contractor negating such independent status. A copy of the Designated IH's current valid ABIH certification shall be included. The Designated IH shall be available for consultation for the duration of asbestos activities and shall be available for emergencies.

d. Asbestos Abatement Workers: Asbestos abatement workers shall meet the requirements contained in 29 CFR 1926, Section .1101, 40 CFR 61, Subpart M, and other applicable federal, state and local requirements. Worker training documentation shall be provided as required on the "Certificate of Workers Acknowledgment" in this paragraph.

e. Worker Training and Certification of Worker Acknowledgment: Training documentation will be required for each employee who will perform OSHA Class I or Class II asbestos abatement operations. Such documentation shall be submitted on a Contractor generated form titled "Certificate of Workers Acknowledgment", to be completed for each employee in the same format and containing the same information as the example certificate at the end of this section. Training course completion certificates (initial and most recent update refresher) required by the information checked on the form shall be attached.

f. Physician: The Contractor shall provide the name, medical qualifications, address, and telephone number of the physician who will or has performed the medical examinations and evaluations of the persons who will conduct the asbestos abatement work tasks. The physician shall be currently licensed by the state where the workers will be or have been examined, have expertise in pneumoconiosis and shall be responsible for the determination of medical surveillance protocols and for review of examination/test results performed in compliance with 29 CFR 1926, Section .1101 and paragraph MEDICAL REQUIREMENTS. The physician shall be familiar with the typical type of tasks performed by workers.

g. First Aid and CPR Trained Persons: The names of at least 2 persons who are currently trained in first aid and CPR by the American Red Cross or other approved agency shall be designated and shall be onsite at all times during site operations. They shall be trained in universal precautions and the use of PPE as described in the Bloodborne Pathogens Standard of 29 CFR 1910, Section .1030 and shall be included in the Contractor's Bloodborne Pathogen Program. These persons may perform other duties but shall be immediately available to render first aid when needed. A copy of each designated person's current valid First Aid and CPR certificate shall be provided.

h. Independent Testing Laboratory: The Contractor shall provide the name, address and telephone number of the independent testing laboratory selected to perform the sample analyses and report the results. The testing laboratory shall be completely independent from the Contractor as recognized by federal, state or local regulations. Written verification of the following criteria,

signed by the testing laboratory principal and the Contractor, shall be submitted:

(1) Phase contrast microscopy (PCM): The laboratory is fully equipped and proficient in conducting PCM of airborne samples using the methods specified by 29 CFR 1926, Section .1101, OSHA method ID-160, the most current version of NIOSH 84-100 Method 7400, the laboratory is currently judged proficient (classified as acceptable) in counting airborne asbestos samples by PCM by successful participation in each of the last 4 rounds in the American Industrial Hygiene Association (AIHA) Proficiency Analytical Testing (PAT) Program; the names of the selected microscopists who will analyze airborne samples by PCM with verified documentation of their proficiency to conduct PCM analyses by being judged proficient in counting samples as current participating analysts in the AIHA PAT Program, and having successfully completed the Asbestos Sampling and Analysis course (NIOSH 582 or equivalent) with a copy of course completion certificate provided; when the PCM analysis is to be conducted onsite, documentation shall be provided certifying that the onsite analyst meets the same requirements.

(2) Polarized light microscopy (PLM): The laboratory is fully equipped and proficient in conducting PLM analyses of suspect ACM bulk samples in accordance with 40 CFR 763, Subpart E, Appendix E; the laboratory is currently accredited by NIST under the NVLAP for bulk asbestos analysis and will use analysts (names shall be provided) with demonstrated proficiency to conduct PLM to include its application to the identification and quantification of asbestos content.

(3) Transmission electron microscopy (TEM): The laboratory is [fully equipped and proficient in conducting TEM analysis of airborne samples using the mandatory method specified by 40 CFR 763, Subpart E, Appendix E; the laboratory is currently accredited by NIST under the NVLAP for airborne sample analysis of asbestos by TEM; the laboratory will use analysts (names shall be provided) that are currently evaluated as competent with demonstrated proficiency under the NIST NVLAP for airborne sample analysis of asbestos by TEM.

i. Disposal Facility, Transporter: The Contractor shall provide written evidence that the landfill to be used is approved for asbestos disposal by the USEPA and state and local regulatory agencies. Copies of signed agreements between the Contractor (including subcontractors and transporters) and the asbestos waste disposal facility to accept and dispose of all asbestos containing waste generated during the performance of this contract shall be provided. Qualifications shall be provided for each subcontractor or transporter to be used, indicating previous experience in transport and disposal of asbestos waste to include all required state and local waste hauler requirements for asbestos. The Contractor and transporters shall meet the DOT requirements of 49 CFR 171, 49 CFR 172, and 49 CFR 173 as well as registration requirements of 49 CFR 107 and other applicable state or local requirements. The disposal facility shall meet the requirements of 40 CFR 61, Sections .154 or .155, as required in 40 CFR 61,

Section .150(b), and other applicable state or local requirements.

1.6 REGULATORY REQUIREMENTS

In addition to detailed requirements of this specification, work performed under this contract shall comply with EM 385-1-1, applicable federal, state, and local laws, ordinances, criteria, rules and regulations regarding handling, storing, transporting, and disposing of asbestos waste materials. This includes, but is not limited to, OSHA standards, 29 CFR 1926, especially Section .1101, 40 CFR 61, Subpart M and 40 CFR 763. Matters of interpretation of standards shall be submitted to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements shall apply.

1.7 SAFETY AND HEALTH PROGRAM AND PLANS

The Contractor shall develop and submit a written comprehensive site-specific Accident Prevention Plan at least 30 days prior to the preconstruction conference. The Accident Prevention Plan shall address requirements of EM 385-1-1, Appendix A, covering onsite work to be performed by the Contractor and subcontractors. The Accident Prevention Plan shall incorporate an Asbestos Hazard Abatement Plan, and Activity Hazard Analyses as separate appendices into 1 site specific Accident Prevention Plan document. Any portions of the Contractor's overall Safety and Health Program that are referenced in the Accident Prevention Plan, e.g., respirator program, hazard communication program, confined space entry program, etc., shall be included as appendices to the Accident Prevention Plan. The plan shall be prepared or reviewed, signed (and sealed, including certification number if required), and dated by the Contractor's Designated IH, Competent Person, and Project Supervisor.

1.7.1 Asbestos Hazard Abatement Plan Appendix

The Asbestos Hazard Abatement Plan appendix to the Accident Prevention Plan shall include, but not be limited to, the following:

a. The personal protective equipment to be used;

b. The location and description of regulated areas;

c. Initial exposure assessment in accordance with 29 CFR 1926, Section .1101;

d. Level of supervision;

e. Method of notification of other employers at the worksite;

f. Abatement method to include containment and control procedures;

g. Interface of trades involved in the construction;

h. Sequencing of asbestos related work;

i. Storage and disposal procedures and plan;

j. Type of wetting agent and/or asbestos encapsulant to be used;

k. Location of local exhaust equipment;

l. Air monitoring methods (personal, environmental and clearance);

m. Bulk sampling and analytical methods (if required);

n. A detailed description of the method to be employed in order to control the spread of ACM wastes and airborne fiber concentrations;

o. Fire and medical emergency response procedures;

p. The security procedures to be used for all regulated areas.

1.7.2 Activity Hazard Analyses Appendix

Activity Hazard Analyses, for each major phase of work, shall be submitted and updated during the project. The Activity Hazard Analyses format shall be in accordance with EM 385-1-1 (Figure 1-2). The analysis shall define the activities to be performed for a major phase of work, identify the sequence of work, the specific hazards anticipated, and the control measures to be implemented to eliminate or reduce each hazard to an acceptable level. Work shall not proceed on that phase until the Activity Hazard Analyses has been accepted and a preparatory meeting has been conducted by the Contractor to discuss its contents with everyone engaged in the activities, including the onsite Government representatives. The Activity Hazard Analyses shall be continuously reviewed and, when appropriate, modified to address changing site conditions or operations.

1.8 PRECONSTRUCTION CONFERENCE AND ONSITE SAFETY

The Contractor and the Contractor's Designated Competent Person, and Project Supervisor, shall meet with the Contracting Officer prior to beginning work at a safety preconstruction conference to discuss the details of the Contractor's submitted Accident Prevention Plan to include the Asbestos Hazard Abatement Plan and Activity Hazard Analyses appendices. Deficiencies in the Accident Prevention Plan will be discussed and the Accident Prevention Plan shall be revised to correct the deficiencies and resubmitted for acceptance. Any changes required in the specification as a result of the Accident Prevention Plan shall be identified specifically in the plan to allow for free discussion and acceptance by the Contracting Officer, prior to the start of work. Onsite work shall not begin until the Accident Prevention Plan has been accepted. A copy of the written Accident Prevention Plan shall be maintained onsite. Changes and modifications to the accepted Accident Prevention Plan shall be made with the knowledge and concurrence of the Designated IH, the Project Supervisor, Designated Competent Person, and the Contracting Officer. Should any unforeseen hazard become evident during the performance of the work, the Competent Person shall bring such hazard to the attention of the Designated IH, the Project Supervisor, and the Contracting Officer, both verbally and in writing, for resolution as soon as possible. In the interim, all necessary action shall be taken by the Contractor to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public, and the environment. Once accepted by the Contracting Officer, the Accident Prevention Plan, including the Asbestos Hazard Abatement Plan and Activity Hazard Analyses will be enforced as if an addition to the contract. Disregarding the provisions of this contract or the accepted Accident Prevention Plan will be cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified.

1.9 SECURITY

Barriers to prevent entry of unauthorized persons shall be provided for each regulated area. A log book shall be kept documenting entry into and out of the regulated area. Entry into regulated areas shall only be by personnel authorized by the Contractor and the Contracting Officer. Personnel authorized to enter regulated areas shall be trained, be medically evaluated, and wear the required personal protective equipment for the specific regulated area to be entered.

1.10 MEDICAL REQUIREMENTS

Medical requirements shall conform to 29 CFR 1926, Section .1101.

1.10.1 Medical Examinations

Before being exposed to airborne asbestos fibers, workers shall be provided with a medical examination as required by 29 CFR 1926, Section .1101 and other pertinent state or local requirements. This requirement shall have been satisfied within the last 12 months. The same medical examination shall be given on an annual basis to employees engaged in an occupation involving asbestos and within 30 calendar days before or after the termination of employment in such occupation. X-ray films of asbestos workers shall be identified to the consulting radiologist and medical record jackets shall be marked with the word "asbestos."

1.10.1.1 Not Used

1.10.1.2 Written Medical Opinion

For each worker, a written medical opinion prepared and signed by a licensed physician indicating the following:

a. Summary of the results of the examination.

b. The potential for an existing physiological condition that would place the employee at an increased risk of health impairment from exposure to asbestos.

c. The ability of the individual to wear personal protective equipment, including respirators, while performing strenuous work tasks under cold and/or heat stress conditions.

d. A statement that the employee has been informed of the results of the examination, provided with a copy of the results, informed of the increased risk of lung cancer attributable to the combined effect of smoking and asbestos exposure, and informed of any medical condition that may result from asbestos exposure.

1.10.2 Medical and Exposure Records

Complete and accurate records shall be maintained of each employee's medical examinations, medical records, and exposure data, as required by 29 CFR 1910, Section .1910.20 and 29 CFR 1926, Section .1101 for a period of 50 years after termination of employment. Records of the required medical examinations and exposure data shall be made available, for inspection and copying, to the Assistant Secretary of Labor for Occupational Safety and Health (OSHA) or authorized representatives of the employee and an employee's physician upon request of the employee or former employee. A

copy of the required medical certification for each employee shall be maintained on file at the worksite for review, as requested by the Contracting Officer or the representatives.

1.11 TRAINING PROGRAM

1.11.1 General Training Requirements

The Contractor shall establish a training program as specified by EPA Model Accreditation Plan (MAP), training requirements at 40 CFR 763, Subpart E, Appendix C, the State of Colorado regulation no. 8, OSHA requirements at 29 CFR 1926, Section .1101(k)(9), and this specification. Contractor employees shall complete the required training for the type of work they are to perform and such training shall be documented and provided to the Contracting Officer as specified in paragraph QUALIFICATIONS.

1.11.2 Project Specific Training

Prior to commencement of work, each worker shall be instructed in the following project specific training:

a. The hazards and health effects of the specific types of ACM to be abated;

b. The content and requirements of the Contractor's Accident Prevention Plan to include the Asbestos Hazard Abatement Plan and Activity Hazard Analyses and site-specific safety and health precautions;

c. Hazard Communication Program;

d. Hands-on training for each asbestos abatement technique to be employed;

e. Heat and/or cold stress monitoring specific to this project;

f. Air monitoring program and procedures;

g. Medical surveillance to include medical and exposure record-keeping procedures;

h. The association of cigarette smoke and asbestos-related disease;

i. Security procedures;

j. Specific work practice controls and engineering controls required for each Class of work in accordance with 29 CFR 1926, Section .1101.

1.12 RESPIRATORY PROTECTION PROGRAM

The Contractor shall establish in writing, and implement a respiratory protection program in accordance with 29 CFR 1926, Section .1101, 29 CFR 1910, Section .134, ANSI Z88.2, CGA G-7, CGA G-7.1 and DETAIL SHEET 12. The Contractor shall establish minimum respiratory protection requirements based on measured or anticipated levels of airborne asbestos fiber concentrations encountered during the performance of the asbestos abatement work. The Contractor's respiratory protection program shall include, but not be limited to, the following elements:

a. The company policy, used for the assignment of individual responsibility, accountability, and implementation of the respiratory protection program.

b. The standard operating procedures covering the selection and use of respirators. Respiratory selection shall be determined by the hazard to which the worker is exposed.

c. Medical evaluation of each user to verify that the worker may be assigned to an activity where respiratory protection is required.

d. Training in the proper use and limitations of respirators.

e. Respirator fit-testing, i.e., quantitative, qualitative and individual functional fit checks.

f. Regular cleaning and disinfection of respirators.

g. Routine inspection of respirators during cleaning and after each use when designated for emergency use.

h. Storage of respirators in convenient, clean, and sanitary locations.

i. Surveillance of regulated area conditions and degree of employee exposure (e.g., through air monitoring).

j. Regular evaluation of the continued effectiveness of the respiratory protection program.

k. Recognition and procedures for the resolution of special problems as they affect respirator use (e.g., no facial hair that comes between the respirator face piece and face or interferes with valve function; prescription eye wear usage; contact lenses usage; etc.).

l. Proper training in putting on and removing respirators.

1.12.1 Respiratory Fit Testing

A qualitative or quantitative fit test conforming to 29 CFR 1926, Section 1101, Appendix C shall be conducted for each Contractor worker required to wear a respirator, and for the Contracting Officer and authorized visitors who enter a regulated area where respirators are required to be worn. A respirator fit test shall be performed for each worker wearing a negative-pressure respirator prior to initially wearing a respirator on this project and every 6 months thereafter. The qualitative fit tests may be used only for testing the fit of half-mask respirators where they are permitted to be worn, or of full-facepiece air purifying respirators where they are worn at levels at which half-facepiece air purifying respirators are permitted. If physical changes develop that will affect the fit, a new fit test for the worker shall be performed. Functional fit checks shall be performed by employees each time a respirator is put on and in accordance with the manufacturer's recommendation.

1.12.2 Respirator Selection and Use Requirements

The Contractor shall provide respirators, and ensure that they are used as required by 29 CFR 1926, Section .1101 and in accordance with the

manufacturer's recommendations. Respirators shall be jointly approved by the Mine Safety and Health Administration and the National Institute for Occupational Safety and Health (MSHA/NIOSH), or by NIOSH, under the provisions of 42 CFR 84, for use in environments containing airborne asbestos fibers. Personnel who handle ACM, enter regulated areas that require the wearing of a respirator, or who are otherwise carrying out abatement activities that require the wearing of a respirator, shall be provided with approved respirators that are fully protective of the worker at the measured or anticipated airborne asbestos concentration level to be encountered. For air-purifying respirators, the particulate filter portion of the cartridges or canister approved for use in airborne asbestos environments shall be high-efficiency particulate air (HEPA). The initial respirator selection and the decisions regarding the upgrading or downgrading of respirator type shall be made by the Contractor's Designated IH based on the measured or anticipated airborne asbestos fiber concentrations to be encountered. Recommendations made by the Contractor's Designated IH to downgrade respirator type shall be submitted in writing to the Contracting Officer. The Contractor's Designated Competent Person in consultation with the Designated IH, shall have the authority to take immediate action to upgrade or downgrade respiratory type when there is an immediate danger to the health and safety of the wearer. Respirators shall be used in the following circumstances:

a. During all Class I asbestos jobs.

b. During all Class II work where the ACM is not removed in a substantially intact state.

c. During all Class II and III work which is not performed using wet methods. Respirators need not be worn during removal of ACM from sloped roofs when a negative exposure assessment has been made and ACM is removed in an intact state.

d. During all Class II and III asbestos jobs where the Contractor does not produce a negative exposure assessment.

e. During all Class III jobs where TSI or surfacing ACM is being disturbed.

f. During all Class IV work performed within regulated areas where employees performing other work are required to wear respirators.

g. During all work where employees are exposed above the PEL-TWA or PEL-Excursion Limit.

h. In emergencies

1.12.3 Class I Work

The Contractor shall provide: (1) a tight-fitting, powered air purifying respirator equipped with high efficiency filters, or (2) a full-facepiece supplied air respirator operated in the pressure demand mode, equipped with HEPA egress cartridges, or (3) an auxiliary positive pressure self-contained breathing apparatus, for all employees within the regulated area where Class I work is being performed; provided that a negative exposure assessment has not been produced, and that the exposure level will not exceed 1 f/cc as an 8-hour time weighted average. A full-facepiece supplied air respirator, operated in the pressure demand mode, equipped with an auxiliary positive pressure self-contained breathing apparatus

shall be provided under such conditions, if the exposure assessment indicates exposure levels above 1 f/cc as an 8-hour time weighted average.

1.12.4 Class II Work

The Contractor shall provide an air purifying respirator, other than a disposable respirator, equipped with high-efficiency filters whenever the employee performs Class II asbestos jobs where the Contractor does not produce a negative exposure assessment.

1.12.5 Sanitation

Employees who wear respirators shall be permitted to leave work areas to wash their faces and respirator facepieces whenever necessary to prevent skin irritation associated with respirator use.

1.13 HAZARD COMMUNICATION PROGRAM

A hazard communication program shall be established and implemented in accordance with 29 CFR 1926, Section .59. Material safety data sheets (MSDSs) shall be provided for all hazardous materials brought onto the worksite. One copy shall be provided to the Contracting Officer and 1 copy shall be included in the Contractor's Hazard Communication Program.

1.14 LICENSES, PERMITS AND NOTIFICATIONS

1.14.1 General Legal Requirements

Necessary licenses, permits and notifications shall be obtained in conjunction with the project's asbestos abatement, transportation and disposal actions and timely notification furnished of such actions as required by federal, state, regional, and local authorities. The Contractor shall notify the Regional Office of the USEPA, state's environmental protection agency responsible for asbestos air emissions, local air pollution control district/agency, state OSHA program, and the Contracting Officer in writing, at least 10 days prior to the commencement of work, in accordance with 40 CFR 61, Subpart M, and state and local requirements to include the mandatory "Notification of Demolition and Renovation Record" form and other required notification documents. Notification shall be by Certified Mail, Return Receipt Requested. The Contractor shall furnish copies of the receipts to the Contracting Officer, in writing, prior to the commencement of work. A copy of the rental company's written acknowledgment and agreement shall be provided as required by paragraph RENTAL EQUIPMENT. For licenses, permits, and notifications that the Contractor is responsible for obtaining, the Contractor shall pay any associated fees or other costs incurred.

1.14.2 Litigation and Notification

The Contractor shall notify the Contracting Officer if any of the following occur:

a. The Contractor or any of the subcontractors are served with notice of violation of any law, regulation, permit or license which relates to this contract;

b. Proceedings are commenced which could lead to revocation of related permits or licenses; permits, licenses or other Government authorizations relating to this contract are revoked;

c. Litigation is commenced which would affect this contract;

d. The Contractor or any of the subcontractors become aware that their equipment or facilities are not in compliance or may fail to comply in the future with applicable laws or regulations.

1.15 PERSONAL PROTECTIVE EQUIPMENT

Three complete sets of personal protective equipment shall be made available to the Contracting Officer and authorized visitors for entry to the regulated area. Contracting Officer and authorized visitors shall be provided with training equivalent to that provided to Contractor employees in the selection, fitting, and use of the required personal protective equipment and the site safety and health requirements. Contractor workers shall be provided with personal protective clothing and equipment and the Contractor shall ensure that it is worn properly. The respiratory protection selected to be used for this project shall be identified in the Asbestos Hazard Abatement Plan Appendix.

1.15.1 Respirators

Respirators shall be in accordance with paragraph RESPIRATORY PROTECTION PROGRAM.

1.15.2 Whole Body Protection

Personnel exposed to airborne concentrations of asbestos that exceed the PELs, or for all OSHA Classes of work for which a required negative exposure assessment is not produced, shall be provided with whole body protection and such protection shall be worn properly. The whole body protection selected to be used for this project shall be identified in the Asbestos Hazard Abatement Plan Appendix.The Competent Person shall examine work suits worn by employees at least once per work shift for rips or tears that may occur during performance of work. When rips or tears are detected while an employee is working, rips and tears shall be immediately mended, or the work suit shall be immediately replaced. Disposable whole body protection shall be disposed of as asbestos contaminated waste upon exiting from the regulated area. Reusable whole body protection worn shall be either disposed of as asbestos contaminated waste upon exiting from the regulated area or be properly laundered in accordance with 29 CFR 1926, Section .1101. Whole body protection used for asbestos abatement shall not be removed from the worksite by a worker to be cleaned. Recommendations made by the Contractor to downgrade whole body protection shall be submitted in writing to the Contracting Officer. The Contractor's Designated Competent Person, has the authority to take immediate action to upgrade or downgrade whole body protection when there is an immediate danger to the health and safety of the wearer.

1.15.2.1 Coveralls

Disposable coveralls with a zipper front shall be provided. Sleeves shall be secured at the wrists, and foot coverings secured at the ankles. See DETAIL SHEET 13.

1.15.2.2 Not Used

1.15.2.3 Work Clothing

An additional coverall shall be provided when the abatement and control method employed does not provide for the exit from the regulated area directly into an attached decontamination unit. Cloth work clothes for wear under the protective coverall, and foot coverings, shall be provided when work is being conducted in low temperature conditions. Cloth work clothes shall be either disposed of as asbestos contaminated waste or properly laundered in accordance with 29 CFR 1926, Section .1101.

1.15.2.4 Gloves

Gloves shall be provided to protect the hands. Where there is the potential for hand injuries (i.e., scrapes, punctures, cuts, etc.) a suitable glove shall be provided and used.

1.15.2.5 Foot Coverings

Cloth socks shall be provided and worn next to the skin. Footwear, as required by OSHA and EM 385-1-1, that is appropriate for safety and health hazards in the area shall be worn. Rubber boots shall be used in moist or wet areas. Reusable footwear removed from the regulated area shall be thoroughly decontaminated or disposed of as ACM waste. Disposable protective foot covering shall be disposed of as ACM waste. If rubber boots are not used, disposable foot covering shall be provided.

1.15.2.6 Head Covering

Hood type disposable head covering shall be provided. In addition, protective head gear (hard hats) shall be provided as required. Hard hats shall only be removed from the regulated area after being thoroughly decontaminated.

1.15.2.7 Protective Eye Wear

Eye protection provided shall be in accordance with ANSI Z87.1.

1.16 HYGIENE FACILITIES AND PRACTICES

The Contractor shall establish a decontamination area for the decontamination of employees, material and equipment. The Contractor shall ensure that employees enter and exit the regulated area through the decontamination area.

1.16.1 Shower Facilities

Shower facilities, when provided, shall comply with 29 CFR 1910, Section .141(d)(3).

1.16.2 3-Stage Decontamination Area

A temporary negative pressure decontamination unit that is adjacent and attached in a leak-tight manner to the regulated area shall be provided as described in SET-UP DETAIL SHEET Numbers 22 and 23. Utilization of prefabricated units shall have prior approval of the Contracting Officer. The decontamination unit shall have an equipment room and a clean room

separated by a shower that complies with 29 CFR 1910, Section .141 (unless the Contractor can demonstrate that such facilities are not feasible). Equipment and surfaces of containers filled with ACM shall be cleaned prior to removing them from the equipment room or area. Surfaces of the equipment room shall be wet wiped 2 times after each shift. Materials used for wet wiping shall be disposed of as asbestos contaminated waste. Two separate lockers shall be provided for each asbestos worker, one in the equipment room and one in the clean room. If the Contracting Officer approves securing hot water service from the building hot water system, backflow protection shall be installed by the Contractor at the point of connection. Should sufficient hot water be unavailable, the Contractor shall provide a minimum 40 gal. electric water heater with minimum recovery rate of 20 gal. per hour and a temperature controller for each showerhead. The Contractor shall provide a minimum of 2 showers. Instantaneous type in-line water heater may be incorporated at each shower head in lieu of hot water heater, upon approval by the Contracting Officer. Flow and temperature controls shall be located within the shower and shall be adjustable by the user. The wastewater pump shall be sized for 1.25 times the showerhead flow-rate at a pressure head sufficient to satisfy the filter head loss and discharge line losses. The pump shall supply a minimum 25 gpm flow with 35 ft. of pressure head. Used shower water shall be collected and filtered to remove asbestos contamination. Filters and residue shall be disposed of as asbestos contaminated material, per DETAIL SHEETS 9 and 14. Filtered water shall be discharged to the sanitary system. Wastewater filters shall be installed in series with the first stage pore size of 20 microns and the second stage pore size of 5 microns. The floor of the decontamination unit's clean room shall be kept dry and clean at all times. Water from the shower shall not be allowed to wet the floor in the clean room. Surfaces of the clean room and shower shall be wet-wiped 2 times after each shift change with a disinfectant solution. Proper housekeeping and hygiene requirements shall be maintained. Soap and towels shall be provided for showering, washing and drying. Any cloth towels provided shall be disposed of as ACM waste or shall be laundered in accordance with 29 CFR 1926, Section .1101.

1.16.3 Load-Out Unit

A temporary load-out unit that is adjacent and connected to the regulated area shall be provided as described in DETAIL SHEET Number 20. Utilization of prefabricated units shall have prior approval of the Contracting Officer. The load-out unit shall be attached in a leak-tight manner to each regulated area. Surfaces of the load-out unit and access tunnel shall be adequately wet-wiped 2 times after each shift change. Materials used for wet wiping shall be disposed of as asbestos contaminated waste.

1.16.4 Not Used

1.16.5 Not Used

1.16.6 Decontamination Area Entry Procedures

The Contractor shall ensure that employees entering the decontamination area through the clean room or clean area:

a. Remove street clothing in the clean room or clean area and deposit

it in lockers.

b. Put on protective clothing and respiratory protection before leaving the clean room or clean area.

c. Pass through the equipment room to enter the regulated area.

1.16.7 Decontamination Area Exit Procedures

The Contractor shall ensure that the following procedures are followed:

a. Before leaving the regulated area, respirators shall be worn while employees remove all gross contamination and debris from their work clothing using a HEPA vacuum.

b. Employees shall remove their protective clothing in the equipment room and deposit the clothing in labeled impermeable bags or containers (see Detail Sheets 9 and 14) for disposal and/or laundering.

c. Employees shall not remove their respirators in the equipment room.

d. Employees shall shower prior to entering the clean room. If a shower has not been located between the equipment room and the clean room or the work is performed outdoors, the Contractor shall ensure that employees engaged in Class I asbestos jobs: a) Remove asbestos contamination from their work suits in the equipment room or decontamination area using a HEPA vacuum before proceeding to a shower that is not adjacent to the work area; or b) Remove their contaminated work suits in the equipment room, without cleaning worksuits, and proceed to a shower that is not adjacent to the work area.

e. After showering, employees shall enter the clean room before changing into street clothes.

1.16.8 Lunch Areas

The Contractor shall provide lunch areas in which the airborne concentrations of asbestos are below 0.01 f/cc.

1.16.9 Smoking

Smoking, if allowed by the Contractor, shall only be permitted in designated areas approved by the Contracting Officer.

1.17 REGULATED AREAS

All Class I and II asbestos work shall be conducted within regulated areas. The regulated area shall be demarcated to minimize the number of persons within the area and to protect persons outside the area from exposure to airborne asbestos. Where critical barriers or negative pressure enclosures are used, they shall demarcate the regulated area. Access to regulated areas shall be limited to authorized persons. The Contractor shall control access to regulated areas, ensure that only authorized personnel enter, and verify that Contractor required medical surveillance, training and respiratory protection program requirements are met prior to allowing entrance.

1.18 WARNING SIGNS AND TAPE

Warning signs and tape printed in English shall be provided at the regulated boundaries and entrances to regulated areas. The Contractor shall ensure that all personnel working in areas contiguous to regulated areas comprehend the warning signs, and if necessary, shall provide additional signs in other languages understandable by the Contractor's workers. Signs shall be located to allow personnel to read the signs and take the necessary protective steps required before entering the area. Warning signs, as shown and described in DETAIL SHEET 11, shall be in vertical format conforming to 29 CFR 1910 and 29 CFR 1926, Section .1101, a minimum of 20 by 14 inches, and displaying the following legend in the lower panel:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA

Spacing between lines shall be at least equal to the height of the upper of any two lines. Warning tape shall be provided as shown and described on DETAIL SHEET 11. Decontamination unit signage shall be as shown and described on DETAIL SHEET 15.

1.19 WARNING LABELS

Warning labels shall be affixed to all asbestos disposal containers used to contain asbestos materials, scrap, waste debris, and other products contaminated with asbestos. Containers with preprinted warning labels conforming to requirements are acceptable. Warning labels shall be as described in DETAIL SHEET 14, shall conform to 29 CFR 1926, Section .1101 and shall be of sufficient size to be clearly legible displaying the following legend:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

1.20 LOCAL EXHAUST VENTILATION

Local exhaust ventilation units, if used, shall conform to ANSI Z9.2 and 29 CFR 1926, Section .1101. Filters on local exhaust system equipment shall conform to ANSI Z9.2 and UL 586. Filter shall be UL labeled.

1.21 TOOLS

Vacuums shall be leak proof to the filter, equipped with HEPA filters, of sufficient capacity and necessary capture velocity at the nozzle or nozzle attachment to efficiently collect, transport and retain the ACM waste material. Power tools shall not be used to remove ACM unless the tool is equipped with effective, integral HEPA filtered exhaust ventilation capture and collection system, or has otherwise been approved for use by the Contracting Officer. Residual asbestos shall be removed from reusable tools prior to storage and reuse. Reusable tools shall be thoroughly decontaminated prior to being removed from regulated areas.

1.22 RENTAL EQUIPMENT

If rental equipment is to be used, written notification shall be provided to the rental agency, concerning the intended use of the equipment, the possibility of asbestos contamination of the equipment and the steps that will be taken to decontaminate such equipment. A written acceptance of the terms of the Contractor's notification shall be obtained from the rental agency.

1.23 AIR MONITORING EQUIPMENT

The Contractor's Designated IH shall approve air monitoring equipment to be used to collect samples. The equipment shall include, but shall not be limited to:

a. High-volume sampling pumps that can be calibrated and operated at a constant airflow up to 16 liters per minute when equipped with a sampling train of tubing and filter cassette.

b. Low-volume, battery powered, body-attachable, portable personal pumps that can be calibrated to a constant airflow up to approximately 3.5 liters per minute when equipped with a sampling train of tubing and filter cassette, and a self-contained rechargeable power pack capable of sustaining the calibrated flow rate for a minimum of 10 hours. The pumps shall also be equipped with an automatic flow control unit which shall maintain a constant flow, even as filter resistance increases due to accumulation of fiber and debris on the filter surface.

c. Single use standard 25 mm diameter cassette, open face, 0.8 micron pore size, mixed cellulose ester membrane filters and cassettes with 50 mm electrically conductive extension cowl, and shrink bands, to be used with low flow pumps in accordance with 29 CFR 1926, Section .1101 for personal air sampling.

d. Single use standard 25 mm diameter cassette, open face, 0.45 micron pore size, mixed cellulose ester membrane filters and cassettes with 50 mm electrically conductive cowl, and shrink bands, to be used with high flow pumps when conducting environmental area sampling using NIOSH 84-100 Methods 7400 and 7402, (and the transmission electric microscopy method specified at 40 CFR 763 if required).

e. Appropriate plastic tubing to connect the air sampling pump to the selected filter cassette.

f. A flow calibrator capable of calibration to within plus or minus 2 percent of reading over a temperature range of minus 4 to plus 140 degrees F and traceable to a NIST primary standard.

1.24 EXPENDABLE SUPPLIES

1.24.1 Glovebag

Glovebags shall be provided as described in 29 CFR 1926, Section .1101 and SET-UP DETAIL SHEET 10. The glovebag assembly shall be 6 mil thick plastic, prefabricated and seamless at the bottom with preprinted OSHA warning label.

1.24.2 Duct Tape

Industrial grade duct tape of appropriate widths suitable for bonding sheet plastic and disposal container shall be provided.

1.24.3 Disposal Containers

Leak-tight (defined as solids, liquids, or dust that cannot escape or spill out) disposal containers shall be provided for ACM wastes as required by 29 CFR 1926 Section .1101 and DETAIL SHEETS 9A, 9B, and 14.

1.24.4 Disposal Bags

Leak-tight bags, 6 mil thick, shall be provided for placement of asbestos generated waste as described in DETAIL SHEET 9A.

1.24.5 Not Used

1.24.6 Not Used

1.24.7 Sheet Plastic

Sheet plastic shall be polyethylene of 6 mil minimum thickness and shall be provided in the largest sheet size necessary to minimize seams. Film shall conform to ASTM D 4397, except as specified below:

1.24.7.1 Flame Resistant

Where a potential for fire exists, flame-resistant sheets shall be provided. Film shall conform to the requirements of NFPA 701.

1.24.7.2 Reinforced

Reinforced sheets shall be provided where high skin strength is required, such as where it constitutes the only barrier between the regulated area and the outdoor environment. The sheet stock shall consist of translucent, nylon-reinforced or woven-polyethylene thread laminated between 2 layers of polyethylene film. Film shall meet flame resistant standards of NFPA 701.

1.24.8 Amended Water

Amended water shall meet the requirements of ASTM D 1331.

1.24.9 Mastic Removing Solvent

If used, mastic removing solvent shall be nonflammable and shall not contain methylene chloride, glycol ether, or halogenated hydrocarbons. Solvents used onsite shall have a flash point greater than 140 degrees F.

1.24.10 Leak-tight Wrapping

Two layers of 6 mil minimum thick polyethylene sheet stock shall be used for the containment of removed asbestos-containing components or materials such as reactor vessels, large tanks, boilers, insulated pipe segments and other materials too large to be placed in disposal bags as described in

DETAIL SHEET 9B. Upon placement of the ACM component or material, each layer shall be individually leak-tight sealed with duct tape.

1.24.11 Viewing Inspection Window

Where feasible, a minimum of 1 clear, 1/8 inch thick, acrylic sheet, 18 by 24 inches, shall be installed as a viewing inspection window at eye level on a wall in each containment enclosure. The windows shall be sealed leak-tight with industrial grade duct tape.

1.24.12 Wetting Agents

Removal encapsulant (a penetrating encapsulant) shall be provided when conducting removal abatement activities that require a longer removal time or are subject to rapid evaporation of amended water. The removal encapsulant shall be capable of wetting the ACM and retarding fiber release during disturbance of the ACM greater than or equal to that provided by amended water. Performance requirements for penetrating encapsulants are specified in paragraph ENCAPSULANTS.

1.24.13 Not Used

1.25 MISCELLANEOUS ITEMS

A sufficient quantity of other items, such as, but not limited to: scrapers, brushes, brooms, staple guns, tarpaulins, shovels, rubber squeegees, dust pans, other tools, scaffolding, staging, enclosed chutes, wooden ladders, lumber necessary for the construction of containments, UL approved temporary electrical equipment, material and cords, ground fault circuit interrupters, water hoses of sufficient length, fire extinguishers, first aid kits, portable toilets, logbooks, log forms, markers with indelible ink, spray paint in bright color to mark areas, project boundary fencing, etc., shall be provided.

PART 2 PRODUCTS

2.1 ENCAPSULANTS

Encapsulants shall conform to USEPA requirements, shall contain no toxic or hazardous substances and no solvent and shall meet the following requirements:

2.2 NOT USED

2.3 NOT USED

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

Asbestos abatement work tasks shall be performed as summarized in paragraph DESCRIPTION OF WORK and the Contractor's Accident Prevention Plan, Asbestos Hazard Abatement Plan, and the Activity Hazard Analyses.

The Contractor shall use the engineering controls and work practices required in 29 CFR 1926, Section .1101(g) in all operations regardless of the levels of exposure. Personnel shall wear and utilize protective clothing and equipment as specified. The Contractor shall not permit eating, smoking, drinking, chewing or applying cosmetics in the regulated area. All hot work (burning, cutting, welding, etc.) shall be conducted under controlled conditions in conformance with 29 CFR 1926, Section .352, Fire Prevention. Personnel of other trades, not engaged in asbestos abatement activities, shall not be exposed at any time to airborne concentrations of asbestos unless all the administrative and personal protective provisions of the Contractor's Accident Prevention Plan are complied with. Power to the regulated area shall be locked-out and tagged in accordance with 29 CFR 1910, and temporary electrical service with ground fault circuit interrupters shall be provided as needed. Temporary electrical service shall be disconnected when necessary for wet removal. The Contractor shall stop abatement work in the regulated area immediately when the airborne total fiber concentration: (1) equals or exceeds 0.01 f/cc, or the pre-abatement concentration, whichever is greater, outside the regulated area; or (2) equals or exceeds 1.0 f/cc inside the regulated area. The Contractor shall correct the condition to the satisfaction of the Contracting Officer, including visual inspection and air sampling. Work shall resume only upon notification by the Contracting Officer. Corrective actions shall be documented.

3.2 PROTECTION OF ADJACENT WORK OR AREAS TO REMAIN

Asbestos abatement shall be performed without damage to or contamination of adjacent work or area. Where such work or area is damaged or contaminated, as verified by the Contracting Officer using visual inspection or sample analysis, it shall be restored to its original condition or decontaminated by the Contractor at no expense to the Government, as deemed appropriate by the Contracting Officer. This includes inadvertent spill of dirt, dust or debris in which it is reasonable to conclude that asbestos may exist. When these spills occur, work shall stop in all effected areas immediately and the spill shall be cleaned. When satisfactory visual inspection and air sampling analysis results are obtained and have been evaluated by the Contractor's Designated IH and the Contracting Officer, work shall proceed.

3.3 OBJECTS

3.3.1 Removal of Mobile Objects

Mobile objects, furniture, and equipment will be removed from the area of work by the Government before asbestos abatement work begins.

3.3.2 Not Used

3.3.3 Not Used

3.4 BUILDING VENTILATION SYSTEM AND CRITICAL BARRIERS

Building ventilating systems supplying air into or returning air out of a regulated area shall be isolated by airtight seals to prevent the spread of contamination throughout the system. Air-tight critical barriers shall be installed on building ventilating openings located inside the regulated

area that supply or return air from the building ventilation system or serve to exhaust air from the building. The critical barriers shall consist of 2 layers of polyethylene. Edges to wall, ceiling and floor surfaces shall be sealed with industrial grade duct tape. Critical barriers shall be installed as shown on drawings and appended SET-UP DETAIL SHEETS.

3.5 NOT USED

3.6 METHODS OF COMPLIANCE

3.6.1 Mandated Practices

The Contractor shall employ proper handling procedures in accordance with 29 CFR 1926 and 40 CFR 61, Subpart M, and the specified requirements. The specific abatement techniques and items identified shall be detailed in the Contractor's Asbestos Hazard Abatement Plan including, but not limited to, details of construction materials, equipment, and handling procedures. The Contractor shall use the following engineering controls and work practices in all operations, regardless of the levels of exposure:

a. Vacuum cleaners equipped with HEPA filters to collect debris and dust containing ACM.

b. Wet methods or wetting agents to control employee exposures during asbestos handling, removal, cutting, and cleanup; except where it can be demonstrated that the use of wet methods is unfeasible due to, for example, the creation of electrical hazards, equipment malfunction, and in roofing.

c. Prompt clean-up and disposalin leak-tight containers of wastes and debris contaminated with asbestos.

d. Inspection and repair of polyethylene in work and high traffic areas.

e. Cleaning of equipment and surfaces of containers filled with ACM prior to removing them from the equipment room or area.

3.6.2 Control Methods

The Contractor shall use the following control methods to comply with the PELs:

a. Local exhaust ventilation equipped with HEPA filter dust collection systems;

b. Enclosure or isolation of processes producing asbestos dust;

c. Ventilation of the regulated area to move contaminated air away from the breathing zone of employees and toward a filtration or collection device equipped with a HEPA filter;

d. Use of other work practices and engineering controls;

e. Where the feasible engineering and work practice controls described above are not sufficient to reduce employee exposure to or below the PELs, the Contractor shall use them to reduce

employee exposure to the lowest levels attainable by these controls and shall supplement them by the use of respiratory protection that complies with paragraph, RESPIRATORY PROTECTION PROGRAM.

3.6.3 Unacceptable Practices

The following work practices and engineering controls shall not be used for work related to asbestos or for work which disturbs ACM, regardless of measured levels of asbestos exposure or the results of initial exposure assessments:

a. High-speed abrasive disc saws that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air.

b. Compressed air used to remove asbestos, or materials containing asbestos, unless the compressed air is used in conjunction with an enclosed ventilation system designed to capture the dust cloud created by the compressed air.

c. Dry sweeping, shoveling, or other dry clean-up of dust and debris containing ACM.

d. Employee rotation as a means of reducing employee exposure to asbestos.

3.6.4 Class I Work Procedures

In addition to requirements of paragraphs Mandated Practices and Control Methods, the following engineering controls and work practices shall be used:

a. A Competent Person shall supervise the installation and operation of the control system.

b. For jobs involving the removal of more than 25 feet or 10 square feet of TSI or surfacing material, the Contractor shall place critical barriers over all openings to the regulated area.

c. HVAC systems shall be isolated in the regulated area by sealing with a double layer of plastic or air-tight rigid covers.

d. Impermeable dropcloths (6 mil or greater thickness) shall be placed on surfaces beneath all removal activity.

e. Objects within the regulated area shall be handled as specified in paragraph OBJECTS.

f. Where a negative exposure assessment has not been provided or where exposure monitoring shows the PEL was exceeded, the regulated area shall be ventilated to move contaminated air away from the employee's breathing zone toward a HEPA unit or collection device.

3.6.5 Specific Control Methods for Class I Work

In addition to requirements of paragraph Class I Work Procedures, Class I asbestos work shall be performed using one of the control methods identified in the subparagraphs below, as appropriate to the work.

3.6.5.1 Negative Pressure Enclosure (NPE) System

The NPE system shall be as shown in SETUP DETAIL SHEET 3. The system shall provide at least 4 air changes per hour inside the containment. The local exhaust unit equipment shall be operated 24 hours per day until the containment is removed, and shall be leak-proof to the filter and equipped with HEPA filters. Air movement shall be directed away from the employees and toward a HEPA filtration device. The NPE shall be smoke tested for leaks at the beginning of each shift. Local exhaust equipment shall be sufficient to maintain a minimum pressure differential of minus 0.02 inch of water column relative to adjacent, unsealed areas. Pressure differential shall be monitored continuously, 24 hours per day, with an automatic manometric recording instrument. Pressure differential recordings shall be provided daily on the same day collected. Readings shall be reviewed by the Contractor's Designated Competent Person and IH prior to submittal. The Contracting Officer shall be notified immediately if the pressure differential falls below the prescribed minimum. The building ventilation system shall not be used as the local exhaust system for the regulated area. The local exhaust system shall terminate outdoors unless an alternate arrangement is allowed by the Contract Officer. All filters used shall be new at the beginning of the project and shall be periodically changed as necessary and disposed of as ACM waste.

3.6.5.2 Glovebag Systems

Glovebag systems shall be as shown in SETUP DETAIL SHEET 10. The glovebag system shall be used to remove ACM from straight runs of piping and elbows and other connections. Glovebags shall be used without modification and shall be smoke-tested for leaks and any leaks sealed prior to use. Glovebags shall be installed to completely cover the circumference of pipe or other structures where the work is to be done. Glovebags shall be used only once and shall not be moved. Glovebags shall not be used on surfaces that have temperatures exceeding 150 degrees F. Prior to disposal, glovebags shall be collapsed by removing air within them using a HEPA vacuum. Before beginning the operation, loose and friable material adjacent to the glovebag operation shall be wrapped and sealed in 2 layers of plastic or otherwise rendered intact. At least 2 persons shall perform Class I glovebag removal. Asbestos regulated work areas shall be established as specified and shown on detailed drawings and plans for glovebag abatement. Designated boundary limits for the asbestos work shall be established with rope or other continuous barriers and all other requirements for asbestos control areas shall be maintained, including area signage and boundary warning tape as specified in SET-UP DETAIL SHEET 11.

a. In addition to requirements for negative pressure glovebag systems above, the Contractor shall attach HEPA vacuum systems or other devices to the bag to prevent collapse during removal of ACM from straight runs of piping and elbows and other connections.

b. The negative pressure glove boxes used to remove ACM from pipe runs shall be fitted with gloved apertures and a bagging outlet and constructed with rigid sides from metal or other material which can withstand the weight of the ACM and water used during removal. A negative pressure shall be created in the system using a HEPA filtration system. The box shall be smoke tested for leaks prior to each use.

3.6.5.3 Mini-Enclosures

Single bulkhead containment, double bulkhead containment, or m ini-containment (small walk-in enclosure) as shown in SETUP DETAIL SHEET 5, 6, or 7 to accommodate no more than 2 persons, may be used if the disturbance or removal can be completely contained by the enclosure with the following specifications and work practices. The mini-enclosure shall be inspected for leaks and smoke tested before each use. Air movement shall be directed away from the employee's breathing zone within the mini-enclosure.

3.6.5.4 Wrap and Cut Operation

Wrap and cut operations shall be as shown in SETUP DETAIL SHEET 9B and 10. Prior to cutting pipe, the asbestos-containing insulation shall be wrapped with polyethylene and securely sealed with duct tape to prevent asbestos becoming airborne as a result of the cutting process. The following steps shall be taken: install glovebag, strip back sections to be cut 6 inches from point of cut, and cut pipe into manageable sections.

3.6.6 Class II Work

In addition to the requirements of paragraphs Mandated Practices and Control Methods, the following engineering controls and work practices shall be used:

a. A Competent Person shall supervise the work.

b. For indoor work, critical barriers shall be placed over all openings to the regulated area.

c. Impermeable dropcloths shall be placed on surfaces beneath all removal activity.

3.6.7 Specific Control Methods for Class II Work

In addition to requirements of paragraph Class II Work, Class II work shall be performed using one of the following methods, as appropriate to the work:

3.6.7.1 Vinyl and Asphalt Flooring Materials

When removing vinyl and asphalt flooring materials which contain ACM , the Contractor shall use the following practices as shown in RESPONSE ACTION DETAIL SHEET 57, 58, 59,61, or 62. Resilient sheeting shall be removed by adequately wet methods. Tiles shall be removed intact (if possible); wetting is not required when tiles are heated and removed intact. Flooring or its backing shall not be sanded. Scraping of residual adhesive and/or backing shall be performed using wet methods. Mechanical chipping is prohibited unless performed in a negative pressure enclosure. Dry sweeping is prohibited. The Contractor shall use vacuums equipped with HEPA filter, disposable dust bag, and metal floor tool (no brush) to clean floors.

3.6.7.2 Not Used

3.6.7.3 Not Used

3.6.7.4 Not Used

3.6.7.5 Other Class II Jobs

The Contractor shall use the following work practices when performing Class II removal of ACM: The material shall be thoroughly wetted with amended water prior and during its removal. The material shall be removed in an intact state. Cutting, abrading or breaking the material is prohibited. The ACM removed shall be immediately bagged or wrapped.

3.6.8 Not Used

3.6.9 Not Used

3.6.10 Not Used

3.6.11 Cleaning After Asbestos Removal

After completion of all asbestos removal work, surfaces from which ACM has been removed shall be wet wiped or sponged clean, or cleaned by some equivalent method to remove all visible residue. Run-off water shall be collected and filtered through a dual filtration system. A first filter shall be provided to remove fibers 20 micrometers and larger, and a final filter provided that removes fibers 5 micrometers and larger. After the gross amounts of asbestos have been removed from every surface, remaining visible accumulations of asbestos on floors shall be collected using plastic shovels, rubber squeegees, rubber dustpans, and HEPA vacuum cleaners as appropriate to maintain the integrity of the regulated area. When TSI and surfacing material has been removed, workmen shall use HEPA vacuum cleaners to vacuum every surface. Surfaces or locations which could harbor accumulations or residual asbestos dust shall be checked after vacuuming to verify that no asbestos-containing material remains; and shall be re-vacuumed as necessary to remove the ACM.

3.6.12 Class I Asbestos Work Response Action Detail Sheets

The following Class I Asbestos Work Response Action Detail Sheets shall be followed for the appropriate work task to be performed:

a. Troweled Wall Plaster on Masonry: See Sheet 32

b. Troweled Wall Plaster on Stud Wall: See Sheet 33

c. Acoustical Wall Plaster on Masonry: See Sheet 42

d. Pipe Insulation (Using a Glovebag): See Sheet 87

e. Horizontal Pipe Insulation (Using a Containment Area): See Sheet 88

f. Pipe Insulation (Using a Mini-Containment Area): See Sheet 89

3.6.13 Class II Asbestos Work Response Action Detail Sheets

The following Class II Asbestos Work Response Action Detail Sheets shall be followed as appropriate for each individual work task to be performed:

a. Glued-on Acoustical Ceiling and Wall Tile: See Sheet 55

b. Vinyl Asbestos Tile Adhered to Concrete Floor System by Asbestos Containing Adhesive: See Sheet 57

c. Vinyl Asbestos Tile Adhered to Concrete Floor System by Asbestos Free Adhesive: See Sheet 58

d. Vinyl Asbestos Tile and Chemical Dissolution of Asbestos-Containing Adhesives on Concrete Floor System: See Sheet 59

e. Vinyl Asbestos Tile Adhered to Wood Floor System by Asbestos-Containing Adhesive: See Sheet 61

f. Vinyl Asbestos Tile Adhered to Wood Floor System by Asbestos Free Adhesive: See Sheet 62

g. Miscellaneous Asbestos-Containing Materials: See Sheet 45

3.6.14 Not Used

3.6.15 Not Used

3.6.16 Not Used

3.6.17 Not Used

3.6.18 Not Used

3.6.19 Not Used

3.6.20 Not Used

3.6.21 Not Used

3.7 FINAL CLEANING AND VISUAL INSPECTION

Upon completion of abatement, the regulated area shall be cleaned by collecting, packing, and storing all gross contamination; see SET-UP DETAIL SHEETS 9, 14 and 20. A final cleaning shall be performed using HEPA vacuum and wet cleaning of all exposed surfaces and objects in the regulated area. Upon completion of the cleaning, the Contractor shall conduct a visual pre-inspection of the cleaned area in preparation for a final inspection before final air clearance monitoring and recleaning, as necessary. Upon completion of the final cleaning, the Contractor and the Contracting Officer shall conduct a final visual inspection of the cleaned regulated area in accordance with ASTM E 1368 and document the results on the Final Cleaning and Visual Inspection as specified on the SET-UP DETAIL SHEET 19. If the Contracting Officer rejects the clean regulated area as not meeting final cleaning requirements, the Contractor shall reclean as necessary and have a follow-on inspection conducted with the Contracting Officer. Recleaning and follow-up reinspection shall be at the Contractor's expense.

3.8 LOCKDOWN

Prior to removal of plastic barriers and after clean-up of gross contamination and final visual inspection, a post removal (lockdown) encapsulant shall be spray applied to ceiling, walls, floors, and other surfaces in the regulated area.

3.9 EXPOSURE ASSESSMENT AND AIR MONITORING

3.9.1 General Requirements For Exposure

Exposure assessment, air monitoring and analysis of airborne concentration of asbestos fibers shall be performed in accordance with 29 CFR 1926, Section .1101, the Contractor's air monitoring plan, and as specified. Personal exposure air monitoring (collected at the breathing zone) that is representative of the exposure of each employee who is assigned to work within a regulated area shall be performed or overseen by the Contractor's Designated IH. Breathing zone samples shall be taken for at least 25 percent of the workers in each shift, or a minimum of 2, whichever is greater. Air monitoring results at the 95 percent confidence level shall be calculated as shown in Table 2 at the end of this section. Abatement environmental air monitoring shall be performed or overseen by the Contractor's Designated IH. Final clearance environmental air monitoring, shall be performed by the Contractor's Designated IH. Environmental and final clearance air monitoring shall be performed using NIOSH 84-100 Method 7400 (PCM) or the EPA TEM Method specified in 40 CFR 763. For environmental and final clearance, air monitoring shall be conducted at a sufficient velocity and duration to establish the limit of detection of the method used at 0.005 f/cc. Monitoring may be duplicated by the Government at the discretion of the Contracting Officer. Results of breathing zone samples shall be posted at the job site and made available to the Contracting Officer. The Contractor shall maintain a fiber concentration inside a regulated area less than or equal to 0.1 f/cc expressed as an 8 hour, time-weighted average (TWA) during asbestos abatement activities. If fiber concentration rises above 0.1 f/cc, work procedures shall be investigated with the Contracting Officer to determine the cause. At the discretion of the Contracting Officer, fiber concentration may exceed 0.1 f/cc but shall not exceed 1.0 f/cc expressed as an 8-hour TWA. The Contractor's workers shall not be exposed to an airborne fiber concentration in excess of 1.0 f/cc, as averaged over a sampling period of 30 minutes. Should either an environmental concentration of 1.0 f/cc expressed as an 8-hour TWA or a personal excursion concentration of 1.0 f/cc expressed as a 30-minute sample occur inside a regulated work area, the Contractor shall stop work immediately, notify the Contracting Officer, and implement additional engineering controls and work practice controls to reduce airborne fiber levels below prescribed limits in the work area. Work shall not restart until authorized by the Contracting Officer.

3.9.2 Initial Exposure Assessment

The Contractor shall conduct an exposure assessment immediately before or at the initiation of an asbestos abatement operation to ascertain expected exposures during that operation. The assessment shall be completed in time to comply with the requirements which are triggered by exposure data or the lack of a negative exposure assessment, and to provide information necessary to assure that all control systems planned are appropriate for that operation. The assessment shall take into consideration both the monitoring results and all observations, information or calculations which indicate employee exposure to asbestos, including any previous monitoring conducted in the workplace, or of the operations of the Contractor which indicate the levels of airborne asbestos likely to be encountered on the job. For Class I asbestos work, until the employer conducts exposure monitoring and documents that employees on that job will not be exposed in excess of PELs, or otherwise makes a negative exposure assessment, the Contractor shall presume that employees are exposed in excess of the PEL-TWA and PEL-Excursion Limit.

3.9.3 Negative Exposure Assessment

If the Contractor chooses to provide a negative exposure assessment, the assessment shall conform to the following criteria:

a. Objective Data: Objective data demonstrating that the product or material containing asbestos minerals or the activity involving such product or material cannot release airborne fibers in concentrations exceeding the PEL-TWA and PEL-Excursion Limit under those work conditions having the greatest potential for releasing asbestos.

b. Prior Asbestos Jobs: Where the Contractor has monitored prior asbestos jobs for the PEL and the PEL-Excursion Limit within 12 months of the current job, the monitoring and analysis were performed in compliance with asbestos standard in effect; the data were obtained during work operations conducted under workplace conditions closely resembling the processes, type of material, control methods, work practices, and environmental conditions used and prevailing in the Contractor's current operations; the operations were conducted by employees whose training and experience are no more extensive than that of employees performing the current job; and these data show that under the conditions prevailing and which will prevail in the current workplace, there is a high degree of certainty that the monitoring covered exposure from employee exposures will not exceed the PEL-TWA and PEL-Excursion Limit.

c. Initial Exposure Monitoring: The results of initial exposure monitoring of the current job, made from breathing zone air samples that are representative of the 8-hour PEL-TWA and 30-minute short-term exposures of each employee. The monitoring covered exposure from operations which are most likely during the performance of the entire asbestos job to result in exposures over the PELs.

3.9.4 Not Used

3.9.5 Not Used

3.9.6 Environmental Air Monitoring During Abatement

Until an exposure assessment is provided to the Contracting Officer, environmental air monitoring shall be conducted at locations and frequencies that will accurately characterize any evolving airborne asbestos fiber concentrations. The assessment shall demonstrate that the product or material containing asbestos minerals, or the abatement involving such product or material, cannot release airborne asbestos fibers in concentrations exceeding 0.01 f/cc as a TWA under those work conditions having the greatest potential for releasing asbestos. The monitoring shall be at least once per shift at locations including, but not limited to, close to the work inside a regulated area; outside entrances to a regulated area; close to glovebag operations; representative locations outside of the perimeter of a regulated area; inside clean room; and at the exhaust discharge point of local exhaust system ducted to the outside of a

containment (if used). If the sampling outside regulated area shows airborne fiber levels have exceeded background or 0.01 f/cc, whichever is greater, work shall be stopped immediately, and the Contracting Officer notified. The condition causing the increase shall be corrected. Work shall not restart until authorized by the Contracting Officer.

3.9.7 Final Clearance Air Monitoring

Prior to conducting final clearance air monitoring, the Contractor and the Contracting Officer shall conduct a final visual inspection of the regulated area where asbestos abatement has been completed. The final visual inspection shall be as specified in SET-UP DETAIL SHEET 19. Final clearance air monitoring shall not begin until acceptance of the Contractor's final cleaning by the Contracting Officer. The Contractor's Designated IH shall conduct final clearance air monitoring using aggressive air sampling techniques as defined in EPA 560/5-85-024 or as otherwise required by federal or state requirements. The sampling and analytical method used will be NIOSH 84-100Method 7400 (PCM) and Table 3 or the EPA TEM Method specified at 40 CFR 763 and Table 4.

3.9.7.1 Final Clearance Requirements, NIOSH PCM Method

For PCM sampling and analysis using NIOSH 84-100 Method 7400, the fiber concentration inside the abated regulated area, for each airborne sample, shall be less than 0.01 f/cc. The abatement inside the regulated area is considered complete when every PCM final clearance sample is below the clearance limit. If any sample result is greater than 0.01 asbestos f/cc, abatement is incomplete and cleaning shall be repeated. Upon completion of any required recleaning, resampling with results to meet the above clearance criteria shall be done.

3.9.7.2 Final Clearance Requirements, EPA TEM Method

For EPA TEM sampling and analysis, using the EPA Method specified in 40 CFR 763, abatement inside the regulated area is considered complete when the arithmetic mean asbestos concentration of the 5 inside samples is less than or equal to 70 structures per square millimeter (70 S/mm). When the arithmetic mean is greater than 70 S/mm, the 3 blank samples shall be analyzed. If the 3 blank samples are greater than 70 S/mm, resampling shall be done. If less than 70 S/mm, the 5 outside samples shall be analyzed and a Z-test analysis performed. When the Z-test results are less than 1.65, the decontamination shall be considered complete. If the Z-test results are more than 1.65, the abatement is incomplete and cleaning shall be repeated. Upon completion of any required recleaning, resampling with results to meet the above clearance criteria shall be done.

3.9.7.3 Air Clearance Failure

If clearance sampling results fail to meet the final clearance requirements, the Contractor shall pay all costs associated with the required recleaning, resampling, and analysis, until final clearance requirements are met.

3.9.8 Air-Monitoring Results and Documentation

Air sample fiber counting shall be completed and results provided within 24 hours (breathing zone samples), and 24 hours (environmental/clearance monitoring) after completion of a sampling period. The Contracting Officer shall be notified immediately of any airborne levels of asbestos fibers in

excess of established requirements. Written sampling results shall be provided within 5 working days of the date of collection. The written results shall be signed by testing laboratory analyst, testing laboratory principal and the Contractor's Designated IH. The air sampling results shall be documented on a Contractor's daily air monitoring log. The daily air monitoring log shall contain the following information for each sample:

a. Sampling and analytical method used;

b. Date sample collected;

c. Sample number;

d. Sample type: BZ = Breathing Zone (Personal), E = Environmental, C = Abatement Clearance;

e. Location/activity/name where sample collected;

f. Sampling pump manufacturer, model and serial number, beginning flow rate, end flow rate, average flow rate (L/min);

g. Calibration date, time, method, location, name of calibrator, signature;

h. Sample period (start time, stop time, elapsed time (minutes);

i. Total air volume sampled (liters);

j. Sample results (f/cc and S/mm square) if EPA methods are required for final clearance;

k. Laboratory name, location, analytical method, analyst, confidence level. In addition, the printed name and a signature and date block for the Industrial Hygienist who conducted the sampling and for the Industrial Hygienist who reviewed the daily air monitoring log verifying the accuracy of the information.

3.10 CLEARANCE CERTIFICATION

When asbestos abatement is complete, ACM waste is removed from the regulated areas, and final clean-up is completed, the Contracting Officer will certify the areas as safe before allowing the warning signs and boundary warning tape to be removed. The Contractor and the Contracting Officer shall visually inspect all surfaces within the containment for residual material or accumulated debris. The Contractor shall reclean all areas showing dust or residual materials. The Contracting Officer will certify in writing that the area is safe before unrestricted entry is permitted. The Government will have the option to perform monitoring to certify the areas are safe before entry is permitted.

3.11 CLEANUP AND DISPOSAL

3.11.1 Title to ACM Materials

ACM material resulting from abatement work, except as specified otherwise, shall become the property of the Contractor and shall be disposed of as specified and in accordance with applicable federal, state and local regulations.

3.11.2 Collection and Disposal of Asbestos

All ACM waste shall be collected and including contaminated wastewater filters, scrap, debris, bags, containers, equipment, and asbestos contaminated clothing, shall be collected and placed in leak-tight containers such as double plastic bags (see DETAIL SHEET 9A); sealed double wrapped polyethylene sheet (see DETAIL 9B); or other approved containers. Waste within the containers shall be wetted in case the container is breeched. Asbestos-containing waste shall be disposed of at an EPA, state and local approved asbestos landfill. For temporary storage, sealed impermeable containers shall be stored in an asbestos waste load-out unit or in a storage/transportation conveyance (i.e., dumpster, roll-off waste boxes, etc.) in a manner acceptable to and in an area assigned by the Contracting Officer. Procedure for hauling and disposal shall comply with 40 CFR 61, Subpart M, state, regional, and local standards.

3.11.3 Not Used

3.11.4 Weigh Bill and Delivery Tickets

Copies of weigh bills and delivery tickets shall be submitted to the Contracting Officer during the progress of the work. The Contractor shall furnish the Contracting Officer scale tickets for each load of ACM weighed and certified. These tickets shall include tare weight; identification mark for each vehicle weighed; and date, time and location of loading and unloading. Tickets shall be furnished at the point and time individual trucks arrive at the worksite. A master log of all vehicle loading shall be furnished for each day of loading operations. Before the final statement is allowed, the Contractor shall file with the Contracting Officer certified weigh bills and/or certified tickets and manifests of all ACM actually disposed by the Contractor for this contract.

3.11.5 Asbestos Waste Shipment Record

The Contractor shall complete and provide the Contracting Officer final completed copies of the Waste Shipment Record for all shipments of waste material as specified in 40 CFR 61, Subpart M and other required state waste manifest shipment records, within 3 days of delivery to the landfill. Each Waste Shipment Record shall be signed and dated by the Contracting Officer, the waste transporter and disposal facility operator.

TABLE 1 - NOT USED

TABLE 2

FORMULA FOR CALCULATION OF THE 95 PERCENT CONFIDENCE LEVEL
(Reference: NIOSH 7400)

Fibers/cc(01.95 percent CL) = X + [(X) * (1.645) * (CV)]

Where: X = ((E)(AC))/((V)(1000))

E = ((F/Nf) - (B/Nb))/Af

CV = The precision value; 0.45 shall be used unless the analytical laboratory provides the Contracting Officer with documentation (Round Robin Program participation and results) that the laboratory's precision is better.

AC = Effective collection area of the filter in square millimeters

V = Air volume sampled in liters

E = Fiber density on the filter in fibers per square millimeter

F/Nf = Total fiber count per graticule field

B/Nb = Mean field blank count per graticule field

Af = Graticule field area in square millimeters

TWA = C1/T1 + C2/T2 = Cn/Tn

Where: C = Concentration of contaminant

T = Time sampled.

TABLE 3

NI0SH METHOD 7400

PCM ENVIRONMENTAL AIR SAMPLING PROTOCOL (NON-PERSONAL)

Sample Location	Minimum No. of Samples	Filter Pore Size (Note 1)	Min. Vol. (Note 2) (Liters)	Sampling Rate (liters/min.)
Inside Abatement Area	0.5/140 Square Meters (Notes 3 & 4)	0.45 microns	3850	2-16
Each Room in 1 Abatement Area Less than 140 Square meters		0.45 microns	3850	2-16
Field Blank	2	0.45 microns	0	0
Laboratory Blank	1	0.45 microns	0	0

Notes:

1. Type of filter is Mixed Cellulose Ester.

2. Ensure detection limit for PCM analysis is established at 0.005 fibers/cc.

3. One sample shall be added for each additional 140 square meters. (The corresponding I-P units are 5/1500 square feet).

4. A minimum of 5 samples are to be taken per abatement area, plus 2 field blanks.

TABLE 4

EPA AHERA METHOD: TEM AIR SAMPLING PROTOCOL

Location Sampled	Minimum No. of Samples	Filter Pore Size	Min. Vol. (Liters)	Sampling Rate (liters/min.)
Inside Abatement Area	5	0.45 microns	1500	2-16
Outside Abatement Area	5	0.45 microns	1500	2-16
Field Blank	2	0.45 microns	0	0
Laboratory Blank	1	0.45 microns	0	0

Notes:

1. Type of filter is Mixed Cellulose Ester.

2. The detection limit for TEM analysis is 70 structures/square mm.

CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

PROJECT NAME _____ CONTRACT NO. _____
PROJECT ADDRESS _____
CONTRACTOR FIRM NAME _____
EMPLOYEE'S NAME _____,_____,_____,
(Print) (Last) (First) (MI)

Social Security Number: _____-_____-_____,

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH TYPES OF LUNG DISEASE AND CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS, THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NONSMOKING PUBLIC.

Your employer's contract for the above project requires that you be provided and you complete formal asbestos training specific to the type of work you will perform and project specific training; that you be supplied with proper personal protective equipment including a respirator, that you be trained in its use; and that you receive a medical examination to evaluate your physical capacity to perform your assigned work tasks, under the environmental conditions expected, while wearing the required personal protective equipment. These things are to be done at no cost to you. By signing this certification, you are acknowledging that your employer has met these obligations to you. The Contractor's Designated Industrial Hygienist will check the block(s) for the type of formal training you have completed. Review the checked blocks prior to signing this certification.

FORMAL TRAINING:
_____ a. For Competent Persons and Supervisors: I have completed EPA's Model Accreditation Program (MAP) training course, "Contractor/Supervisor", that meets this State's requirements.

b. For Workers:
_____ (1) For OSHA Class I work: I have completed EPA's MAP training course, "Worker", that meets this State's requirements.
_____ (2) For OSHA Class II work (where there will be abatement of more than one type of Class II materials, i.e., roofing, siding, floor tile, etc.): I have completed EPA's MAP training course, "Worker", that meets this State's requirements.
(3) For OSHA Class II work (there will only be abatement of one type of Class II material):
_____ (a) I have completed an 8-hour training class on the elements of 29 CFR 1926, Section .1101(k)(9)(viii), in addition to the specific work practices and engineering controls of 29 CFR 1926, Section .1101(g) and hands-on training.
_____ (b) I have completed EPA's MAP training course, "Worker", that meets this State's requirements.
_____ (4) For OSHA Class III work: I have completed at least a 16-hour course consistent with EPA requirements for training of local education agency maintenance and custodial staff at 40 CFR 763, Section .92(a)(2) and the elements of 29 CFR 1926, Section .1101(k)(9)(viii), in addition to the specific work practices and engineering controls at 29 CFR 1926, Section .1101, and hands-on training.

CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

_____ (5) For OSHA Class IV work: I have completed at least a 2-hr course consistent with EPA requirements for training of local education agency maintenance and custodial staff at 40 CFR 763, (a)(1), and the elements of 29 CFR 1926, Section .1101(k)(9)(viii), in addition to the specific work practices and engineering controls at 29 CFR 1926, Section .1101(g) and hands-on training.

_____ c. Workers, Supervisors and the Designated Competent Person: I have completed annual refresher training as required by EPA's MAP that meets this State's requirements.

PROJECT SPECIFIC TRAINING:
_____ I have been provided and have completed the project specific training required by this Contract. My employer's Designated Industrial Hygienist and Designated Competent Person conducted the training.

RESPIRATORY PROTECTION:
_____ I have been trained in accordance with the criteria in the Contractor's Respiratory Protection program. I have been trained in the dangers of handling and breathing asbestos dust and in the proper work procedures and use and limitations of the respirator(s) I will wear. I have been trained in and will abide by the facial hair and contact lens use policy of my employer.

RESPIRATOR FIT-TEST TRAINING:
_____ I have been trained in the proper selection, fit, use, care, cleaning,maintenance, and storage of the respirator(s) that I will wear. I have been fit-tested in accordance with the criteria in the Contractor's Respiratory Program and have received a satisfactory fit. I have been assigned my individual respirator. I have been taught how to properly perform positive and negative pressure fit-check upon donning negative pressure respirators each time.

MEDICAL EXAMINATION:
_____ I have had a medical examination within the last twelve months which was paid for by my employer. The examination included: health history, pulmonary function tests, and may have included an evaluation of a chest x-ray. A physician made a determination regarding my physical capacity to perform work tasks on the project while wearing personal protective equipment including a respirator. I was personally provided a copy and informed of the results of that examination. My employer's Industrial Hygienist evaluated the medical certification provided by the physician and checked the appropriate blank below. The physician determined that there:

_____ were no limitations to performing the required work tasks.
_____ were identified physical limitations to performing the required work tasks.

Date of the medical examination _____

Employee Signature _____ date _____
Contractor's Industrial
Hygienist Signature _____ date _____

-- End of Section --

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Facility Summary Report
Building 391
Major Command Headquarters

Date Prepared: 30 APR 93
Date Revised: 12 DEC 96

PES conducted an asbestos identification survey of Building 391 on 26 JAN 93. Building 391 was a 9,325 square foot, one story building. The building was constructed of wood framing with stucco plaster exterior built over a crawlspace. The building was constructed in 1951.

PES identified three assessment areas within Building 391. In summary, these were:

Area Code	Assessment Area	AF GRADE	AF Priority
A	Office Areas	11.8641	6
B	Mechanical Room	11.8641	6
C	Building Exterior	0.0000	0

Overall GRADE: 11.8641 Overall Priority: 6

Thirteen homogeneous sampling areas (HSA's) were identified in this building. PES collected 43 samples of suspect asbestos-containing materials (ACM) from Building 391. Sample locations and identified ACM are shown on AutoCad drawing P000391A.

On 12 Dec 1996, Mr. Ian Cummings and Mr. Vincent Colo of PES completed a walkthrough evaluation of Building 391. Building occupants and this evaluation indicated that the asbestos-containing materials were not removed at the time of this renovation.

Asbestos Survey Summary Narrative
Building 391
Major Command Headquarters
Assessment Area A - Office Areas

Date Prepared: 30 APR 93
Date Revised: 13 SEP 93

Assessment Area A included the offices of Building 391. Asbestos-containing materials (ACM) identified in this assessment area were mastic on acoustical tiles and mastic under the brown linoleum. This area has been designated on AutoCad drawing P000391A.

Approximately 3,600 square feet (SF) of acoustical tile mastic (HSA 004) was identified in this assessment area. This material contained 01-05% chrysotile asbestos. PES identified 144 SF of mastic under brown linoleum (HSA 009). The mastic contained 01-05% chrysotile asbestos. These nonfriable materials were in good condition at the time of the survey.

Nonasbestos materials within this assessment area included wall plaster, ceiling tile, acoustical tile and linoleum. These materials were sampled but did not contain asbestos.

The Air Force GRADE for this area was: 11.8641
The Air Force Priority for this area was: 6

Recommendations: Prior to renovation or demolition, all identified potentially friable ACM must be removed in accordance with current EPA NESHAP regulations.

Asbestos Survey Summary Narrative
Building 391
Major Command Headquarters
Assessment Area B - Mechanical Room

Date Prepared: 30 APR 93
Date Revised: 13 SEP 93

Assessment Area B was the mechanical room in Building 391. Asbestos-containing materials (ACM) identified within this assessment area included two forms of vinyl asbestos floor tile (VAT) and floor tile mastic. This area has been designated on AutoCad drawing P000391A.

Approximately 220 square feet (SF) of 12" x 12" tan VAT (HSA 010) and floor tile mastic (HSA 011) were identified in this assessment area. Approximately 220 SF of 9" x 9" tan VAT (HSA 012) was identified in this assessment area. Both types of VAT contained 01-05% chrysotile asbestos. The floor tile mastic under HSA 010 contained 05-15% chrysotile asbestos. These nonfriable materials were in good condition at the time of this survey.

The Air Force GRADE for this area was: 11.8641
The Air Force Priority for this area was: 6

Recommendations: Prior to demolition or renovation, all potentially friable ACM must be removed in accordance with current EPA NESHAP regulations.

Asbestos Survey Summary Narrative
Building 391
Major Command Headquarters
Assessment Area C - Building Exterior

Date Prepared: 30 APR 93
Date Revised: 13 SEP 93

Assessment Area C was the exterior of Building 391. PES did not identify any suspect materials on the exterior of Building 391. This area has been designated on AutoCad drawing P000391A.

The Air Force GRADE for this area was: 0.0000
The Air Force Priority for this area was: 0

Recommendations: None.

PETERSON AIR FORCE BASE ASBESTOS MANAGEMENT PROGRAM

ACBM SUMMARY REPORT

17 JUN 98

FACILITY NUMBER: 391

FACILITY DESCRIPTION: Major Command Headquarters

ASSESSMENT AREA ID: A

ASSESSMENT AREA DESCRIPTION: Office Areas

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
1	Miscellaneous Materials Ceiling Tile Lay-in/Suspended Grid 2' x 4'	None Detected
2	Surfacing Materials Troweled-on Acoustical/Decorative Ceiling/Wall Plaster Cementitious/Textured	None Detected
3	Miscellaneous Materials Glue on Acoustical Tile Acoustical Tiles 1'x 1'	None Detected
4	Miscellaneous Materials Acoustical Tile Mastic Ceiling/Wall Brown	01-05% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
5	Miscellaneous Materials Ceiling Tile Lay-in/Suspended Grid 2' x 2'	None Detected
6	Miscellaneous Materials Floor Tile/Floor Finishes Linoleum	None Detected
7	Miscellaneous Materials Mastics/Sealants/Coatings Floor Tile Mastic Brown Glue	None Detected
8	Miscellaneous Materials Floor Tile/Floor Finishes Linoleum	None Detected
9	Miscellaneous Materials Mastics/Sealants/Coatings Floor Tile Mastic Black Tar	01-05% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite

PETERSON AIR FORCE BASE ASBESTOS MANAGEMENT PROGRAM

ACBM SUMMARY REPORT

17 JUN 98

ASSESSMENT AREA ID: B

ASSESSMENT AREA DESCRIPTION: Mechanical Room

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
10	Miscellaneous Materials Floor Tile/Floor Finishes Vinyl Floor Tile 12" x 12"	01-05% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
11	Miscellaneous Materials Mastics/Sealants/Coatings Floor Tile Mastic Black Tar	05-15% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
12	Miscellaneous Materials Floor Tile/Floor Finishes Vinyl Floor Tile 9" x 9"	01-05% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
13	Miscellaneous Materials Mastics/Sealants/Coatings Floor Tile Mastic Black Tar	None Detected

ASSESSMENT AREA ID: C

ASSESSMENT AREA DESCRIPTION: Building Exterior

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
0		None Detected

PETERSON AIR FORCE BASE ASBESTOS MANAGEMENT PROGRAM

HOMOGENEOUS SAMPLE AREA REPORT

17 JUN 93

FACILITY ID: 391 FACILITY NAME: Major Command Headquarters PRIORITY: 6 GRADE RATING: 11.8641

PRIMARY POC: SMS Kenneth Madison TELEPHONE: 556-6362

SECONDARY POC: AB Jacob Linkowski TELEPHONE: 556-6736

FACILITY ABATEMENT COST: $11,196.00

HSA ID: 1 HSA DESCRIPTION: Ceiling tiles - throughout building HSA PRIORITY: 0 HSA GRADE RATING: 0.0000

Lay-in/Suspended Grid 2' x 4' Miscellaneous Materials [3A1a]

				ASBESTOS CONTENT					OTHER MATERIALS		
SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	MATERIAL 1	MATERIAL2	MATERIAL3
PE-000391-001	93-01908	L		00-00	00-00	00-00	00-00	00-00	Cellulose	Perlite	Fibrous Glass
PE-000391-002	93-01909	L		00-00	00-00	00-00	00-00	00-00	Cellulose	Perlite	Fibrous Glass
PE-000391-003	93-01910	L		00-00	00-00	00-00	00-00	00-00	Cellulose	Perlite	Fibrous Glass

HSA ID: 2 HSA DESCRIPTION: Wall plaster - throughout building HSA PRIORITY: 0 HSA GRADE RATING: 0.0000

Cementitious/Textured Surfacing Materials [1C2]

				ASBESTOS CONTENT					OTHER MATERIALS		
SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	MATERIAL 1	MATERIAL2	MATERIAL3
PE-000391-004	93-01911	L		00-00	00-00	00-00	00-00	00-00	Carbonates	Vermiculite	Perlite
PE-000391-005	93-01912	L		00-00	00-00	00-00	00-00	00-00	Carbonates	Vermiculite	Quartz
PE-000391-006	93-01913	L		00-00	00-00	00-00	00-00	00-00	Carbonates	Vermiculite	Quartz
PE-000391-007	93-01914	L		00-00	00-00	00-00	00-00	00-00	Carbonates	Perlite	Quartz
PE-000391-008	93-01915	L		00-00	00-00	00-00	00-00	00-00	Quartz	Gypsum	Perlite
PE-000391-009	93-01916	L		00-00	00-00	00-00	00-00	00-00	Carbonates	Perlite	Unid. Other
PE-000391-010	93-01917	L		00-00	00-00	00-00	00-00	00-00	Carbonates	Perlite	Quartz

HSA ID: 3 HSA DESCRIPTION: Acoustical CT-fissured (office) HSA PRIORITY: 0 HSA GRADE RATING: 0.0000

Acoustical Tiles 1'x 1' Miscellaneous Materials [3A3a]

				ASBESTOS CONTENT					OTHER MATERIALS		
SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	MATERIAL 1	MATERIAL2	MATERIAL3
PE-000391-011	93-01918	L		00-00	00-00	00-00	00-00	00-00	Fibrous Glass	Cellulose	Perlite

FACILITY ID: 391 FACILITY NAME: Major Command Headquarters PRIORITY: 6 GRADE RATING: 11.8641

HSA ID: 3 HSA DESCRIPTION: Acoustical CT-fissured (office) HSA PRIORITY: 0 HSA GRADE RATING: 0.0000
Acoustical Tiles 1'x 1' Miscellaneous Materials [3A3a]

SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	ASBESTOS CONTENT: CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	OTHER MATERIALS: MATERIAL 1	MATERIAL2	MATERIAL3
PE-000391-012	93-01919	L		00-00	00-00	00-00	00-00	00-00	Fibrous Glass	Cellulose	Perlite
PE-000391-013	93-01920	L		00-00	00-00	00-00	00-00	00-00	Fibrous Glass	Cellulose	Perlite

HSA ID: 4 HSA DESCRIPTION: Mastic under 1' X 1' acoustical tile HSA PRIORITY: 6 HSA GRADE RATING: 11.8641
Ceiling/Wall Brown Miscellaneous Materials [3C7b]

SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	ASBESTOS CONTENT: CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	OTHER MATERIALS: MATERIAL 1	MATERIAL2	MATERIAL3
PE-000391-014	93-01921	N	C	01-05	00-00	00-00	00-00	00-00	Mastic	Unid. Other	Carbonates
PE-000391-015		N	C								

SAMPLE NOT ANALYZED - APPLIED POSITIVE SAMPLE RESULT

PE-000391-016		N	C								

SAMPLE NOT ANALYZED - APPLIED POSITIVE SAMPLE RESULT

HSA ID: 5 HSA DESCRIPTION: Acoustical tile in offices HSA PRIORITY: 0 HSA GRADE RATING: 0.0000
Lay-in/Suspended Grid 2' x 2' Miscellaneous Materials [3A1b]

SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	ASBESTOS CONTENT: CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	OTHER MATERIALS: MATERIAL 1	MATERIAL2	MATERIAL3
PE-000391-017	93-01924	L		00-00	00-00	00-00	00-00	00-00	Fibrous Glass	Perlite	
PE-000391-018	93-01925	L		00-00	00-00	00-00	00-00	00-00	Fibrous Glass	Perlite	Carbonates

FACILITY ID: 391 FACILITY NAME: Major Command Headquarters PRIORITY: 6 GRADE RATING: 11.8641

HSA ID: 6 HSA DESCRIPTION: Linoleum in break room HSA PRIORITY: 0 HSA GRADE RATING: 0.0000

Linoleum Miscellaneous Materials [3B2]

SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	ASBESTOS CONTENT: CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	OTHER MATERIALS: MATERIAL 1	MATERIAL2	MATERIAL3
PE-000391-019	93-01926	L		00-00	00-00	00-00	00-00	00-00	Fibrous Glass	Perlite	Unid. Other
PE-000391-020	93-01927	N	C	00-00	00-00	00-00	00-00	00-00	Binders	Quartz	
PE-000391-021	93-01928	N	C	00-00	00-00	00-00	00-00	00-00	Binders	Quartz	
PE-000391-022	93-01929	N	C	00-00	00-00	00-00	00-00	00-00	Binders	Quartz	

HSA ID: 7 HSA DESCRIPTION: Mastic under linoleum HSA PRIORITY: 0 HSA GRADE RATING: 0.0000

Floor Tile Mastic Brown Glue Miscellaneous Materials [3C1c]

SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	ASBESTOS CONTENT: CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	OTHER MATERIALS: MATERIAL 1	MATERIAL2	MATERIAL3
PE-000391-023	93-01930	N	C	00-00	00-00	00-00	00-00	00-00	Mastic	Gypsum	Fibrous Glass
PE-000391-024	93-01931	N	C	00-00	00-00	00-00	00-00	00-00	Mastic	Gypsum	Cellulose
PE-000391-025		N	C								

SAMPLE NOT ANALYZED

HSA ID: 8 HSA DESCRIPTION: Linoleum in the building entrance HSA PRIORITY: 0 HSA GRADE RATING: 0.0000

Linoleum Miscellaneous Materials [3B2]

SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	ASBESTOS CONTENT: CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	OTHER MATERIALS: MATERIAL 1	MATERIAL2	MATERIAL3
PE-000391-026	93-01933	N	C	00-00	00-00	00-00	00-00	00-00	Cellulose	Carbonates	Binders
PE-000391-027	93-01934	N	C	00-00	00-00	00-00	00-00	00-00	Carbonates	Diat. Earth	Woolastonite
PE-000391-028	93-01935	N	C	00-00	00-00	00-00	00-00	00-00	Carbonates	Cellulose	Binders

FACILITY ID: 391 FACILITY NAME: Major Command Headquarters PRIORITY: 6 GRADE RATING: 11.8641

HSA ID: 9 HSA DESCRIPTION: Mastic under brown linoleum HSA PRIORITY: 6 HSA GRADE RATING: 11.8641
Floor Tile Mastic Black Tar Miscellaneous Materials [3C1a]

SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	ASBESTOS CONTENT: CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	OTHER MATERIALS: MATERIAL 1	MATERIAL2	MATERIAL3
PE-000391-029	93-01936	N	C	00-00	00-00	00-00	00-00	00-00	Mastic	Carbonates	Quartz
SAMPLE NOT ANALYZED - APPLIED POSITIVE SAMPLE RESULT											
PE-000391-030	93-01937	N	C	00-00	00-00	00-00	00-00	00-00	Mastic	Carbonates	Quartz
SAMPLE NOT ANALYZED - APPLIED POSITIVE SAMPLE RESULT											
PE-000391-031	93-01938	N	C	01-05	00-00	00-00	00-00	00-00	Mastic	Carbonates	Quartz

HSA ID: 10 HSA DESCRIPTION: Tan floor tiles in the air handling room HSA PRIORITY: 6 HSA GRADE RATING: 11.8641
Vinyl Floor Tile 12" x 12" Miscellaneous Materials [3B1a]

SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	ASBESTOS CONTENT: CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	OTHER MATERIALS: MATERIAL 1	MATERIAL2	MATERIAL3
PE-000391-032	93-01939	N	C	01-05	00-00	00-00	00-00	00-00	Carbonates	Binders	
PE-000391-033		N	C								
SAMPLE NOT ANALYZED - APPLIED POSITIVE SAMPLE RESULT											
PE-000391-034		N	C								
SAMPLE NOT ANALYZED - APPLIED POSITIVE SAMPLE RESULT											

HSA ID: 11 HSA DESCRIPTION: Mastic under HSA 010 HSA PRIORITY: 6 HSA GRADE RATING: 11.8641
Floor Tile Mastic Black Tar Miscellaneous Materials [3C1a]

SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	ASBESTOS CONTENT: CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	OTHER MATERIALS: MATERIAL 1	MATERIAL2	MATERIAL3
PE-000391-035	93-01942	N	C	05-15	00-00	00-00	00-00	00-00	Mastic	Quartz	
PE-000391-036		N	C								
SAMPLE NOT ANALYZED - APPLIED POSITIVE SAMPLE RESULT											
PE-000391-037		N	C								
SAMPLE NOT ANALYZED - APPLIED POSITIVE SAMPLE RESULT											

FACILITY ID: 391 FACILITY NAME: Major Command Headquarters PRIORITY: 6 GRADE RATING: 11.8641

HSA ID: 12 HSA DESCRIPTION: Tan floor tile in the air handling room HSA PRIORITY: 6 HSA GRADE RATING: 11.8641
Vinyl Floor Tile 9" x 9" Miscellaneous Materials [3B1b]

				ASBESTOS CONTENT					OTHER MATERIALS		
SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	MATERIAL 1	MATERIAL2	MATERIAL3
PE-000391-038	93-01945	N	C	01-05	00-00	00-00	00-00	00-00	Carbonates	Binders	Quartz
PE-000391-039		N	C								

SAMPLE NOT ANALYZED - APPLIED POSITIVE SAMPLE RESULT

PE-000391-040		N	C

SAMPLE NOT ANALYZED - APPLIED POSITIVE SAMPLE RESULT

HSA ID: 13 HSA DESCRIPTION: Mastic under HSA 012 HSA PRIORITY: 0 HSA GRADE RATING: 0.0000
Floor Tile Mastic Black Tar Miscellaneous Materials [3C1a]

				ASBESTOS CONTENT					OTHER MATERIALS		
SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	MATERIAL 1	MATERIAL2	MATERIAL3
PE-000391-041	93-01948	N	C	00-00	00-00	00-00	00-00	00-00	Mastic	Cellulose	Quartz
PE-000391-042	93-01949	N	C	00-00	00-00	00-00	00-00	00-00	Mastic	Cellulose	Quartz
PE-000391-043		N	C								

SAMPLE NOT ANALYZED

Facility Summary Report
Building 880
MWR Administration Facility

Date Prepared: 18 FEB 93
Date Revised: 3 DEC 96

PES conducted an asbestos identification survey of Building 880 on 22 JAN 93. Building 880 was a 17,206 square foot, one story building. The building was of wood frame construction on a concrete slab foundation. Building 880 was constructed in 1961. A review of available construction drawings indicated that numerous renovations of the building have occured since its original construction. Asbestos abatement was completed in conjunction with the renovations.

PES identified nine assessment areas within Building 880. In summary, these were:

Area Code	Assessment Area	AF GRADE	AF Priority
A	Wing # 1	8.4861	4
B	Wing # 2	8.4861	4
C	Wing # 3	8.4861	4
D	Wing # 4	8.4861	4
E	Wing # 5	8.4861	4
F	Wing # 6	8.4861	4
G	Attic	0.0000	0

H	Central Lobby	8.4861	4
I	Boiler Room	8.4861	4

Overall GRADE: 8.4861 Overall Priority: 4

Twenty five homogeneous sampling areas (HSAs) were identified in this building. PES collected 80 samples of suspect asbestos-containing materials (ACM) from Building 880. Sample locations and identified ACM are shown on AutoCad drawing P000880A.

On 3 December 1996, PES completed a walkthrough evaluation of asbestos-containing materials in Building 880. The decorative wall plaster (HSA 013) was in good condition throughout the building. The walls were recently painted. Building occupants in Wing 6 indicated that the Men's restroom was renovated. PES was unable to obtain abatement records for the work completed in this facilty. The glue on ceiling tiles HSA 007 were removed the lobby area and the entrance to Wing 3.

Asbestos Survey Summary Narrative
Building 880
MWR Administrative Facility
Assessment Area: A - Wing 1

Date Prepared: 18 FEB 93
Date Revised: 3 DEC 96

Assessment Area A included the entire interior of Wing 1 in Building 880. Asbestos-containing materials (ACM) present within this assessment area included decorative wall plaster, mudded joint packings (MJPs), and vinyl asbestos floor tile (VAT). This area has been designated on AutoCad drawing P000880A.

Approximately 27,600 square feet (SF) of decorative wall plaster (HSA 013) was present in Wing 1 of Building 880. The plaster was present on the perimeter and interior walls. The material was the same as that known to be present in all wings of the building. The wall plaster contained 01-05% chrysotile asbestos. Within this assessment area the material was in generally good condition. Pictures and other objects were nailed or screwed to the walls in various offices in this assessment area. The material has an AF GRADE rating of 8.4861 and an AF Priority of 4.

Approximately 40 linear feet of MJPs (HSA 014) were present on the elbows of the domestic water pipes in this assessment area. The MJPs were present behind the ceramic tiled plaster walls of the restrooms pipe chases. The MJPs contained 01-5% chrysotile asbestos and less than 1% amosite asbestos. The mud was hard and not easily damaged. The MJPs have an AF GRADE rating of 10.3434 and an AF Priority of 6.

Approximately 1,297 SF of 9" x 9" tan VAT (HSA 001) was present throughout this assessment area, with the exception of the restrooms. The VAT contained 05-15% chrysotile asbestos. The nonfriable VAT was in good condition at the time of the survey.

Nonasbestos materials in this assessment area included lagging on fiberglass pipe insulation, 2' x 4' acoustical ceiling tile, carpet mastic, vapor barrier, carpet glue and black floor tile mastic. These materials were sampled during the survey and asbestos was not identified in the samples. The straight runs of the piping systems in this assessment area were insulated with nonsuspect fiberglass insulation.

The Air Force GRADE for this area was: 8.4861
The Air Force Priority for this area was: 4

Recommendations: The decorative wall plaster and MJPs in this assessment area should be included in an Operations & Maintenance (O&M) Program, which includes periodic surveillance of the ACM condition. Building occupants should be notified that the wall plaster contains asbestos and instructed not to disturb or damage the wall plaster (i.e., hang additional objects on the walls, or conduct any self help renovations projects that would involve disturbing the decorative wall plaster). Prior to renovation or demolition, all friable and potentially friable ACM must be removed in accordance with current EPA NESHAP regulations.

On 2 December 1996, PES completed a walkthrough evaluation in this assessment area. The decorative wall plaster (HSA 013) was in good condition at the time of this evaluation. The walls were recently painted with a decorative paint.

Asbestos Survey Summary Narrative
Building 880
MWR Administrative Facility
Assessment Area B - Wing 2

Date Prepared: 19 JAN 93
Date Revised: 3 DEC 96

Assessment Area B included the entire interior of Wing 2 in Building 880. Asbestos-containing materials (ACM) present in this assessment area included decorative wall plaster and mudded joint packings (MJPs). This area has been designated on AutoCad drawing P000880A.

Approximately 27,600 square feet of decorative wall plaster (HSA 013) was present within Wing 2. The plaster was present on the perimeter and interior walls of the wing except in the restrooms. The wall plaster was the same as that known to be present in all the wings of Building 880. The plaster contained 01-05% chrysotile asbestos. Within this assessment area the friable plaster was in generally good condition. Pictures and other objects were nailed or screwed into the walls of numerous offices within this assessment area. Water damage or delamination of the decorative wall plaster were not identified in this assessment area. The material has an AF GRADE rating of 8.4861 and an AF Priority of 4.

Approximately 40 linear feet of MJPs (HSA 014) were present on the elbows of the domestic water pipes in the restrooms pipe chases. The pipe chases were present behind the plaster walls in the sink area. The MJPs contained 01-05% chrysotile asbestos and less than 1% amosite asbestos. The friable MJPs were hard and not easily damaged at the time of the survey. The MJPs have an AF GRADE rating of 10.3434 and an AF Priority of 6.

Nonasbestos materials in this assessment area included lagging on fiberglass pipe insulation, vapor barriers, 12" x 12" speckled floor tile, yellow floor tile mastic and carpet mastic. These materials were sampled during the survey and asbestos was not identified in the samples. The straight runs of the piping systems in this assessment area were insulated with nonsuspect fiberglass insulation.

The Air Force GRADE for this area was: 8.4861
The Air Force Priority for this area was: 4

Recommendations: The decorative wall plaster and MJPs in this assessment area should be included in an Operations & Maintenance (O&M) Program, which includes periodic surveillance of the ACM condition. Building occupants should be notified that the wall plaster contains asbestos and instructed not to disturb or damage the plaster (i.e., hang additional objects on the wall, or conduct any self help renovation projects that would involve disturbing the decorative wall plaster). Prior to renovation or demolition, all friable and potentially friable ACM must be removed in accordance with current EPA NESHAP regulations.

On 2 December 1996, PES completed a walkthrough evaluation in this assessment area. The decorative wall plaster (HSA 013) was in good condition at the time of this evaluation. The walls were recently painted with a decorative paint.

Building 880
MWR Administrative Facility
Assessment Area C - Wing 3

Date Prepared: 19 JAN 93
Date Revised: 3 DEC 96

Assessment area C included the entire interior of Wing 3 in Building 880. Asbestos-containing materials (ACM) present within this assessment area included decorative wall plaster, mudded joint packings (MJPs), and vinyl asbestos floor tile (VAT). This area has been designated on AutoCad drawing P000880A.

Approximately 27,600 square feet of decorative wall plaster (HSA 013) was present in Wing 3 of Building 880. The plaster was present on the perimeter and interior walls of the building. The decorative wall plaster was the same as that known to be present in all wings of the building. The friable plaster contained 01-05% chrysotile asbestos. Within this assessment area the plaster was in generally good condition at the time of the survey. Pictures and other objects were nailed or screwed into the walls in several areas of the assessment area. Water damage or delamination of the plaster was not identified in this assessment area. This material has an AF GRADE rating of 8.4861 and an AF Priority of 4.

Approximately 40 linear feet of MJPs (HSA 014) were present in the restrooms pipe chases. The MJPs were present on the domestic water pipes behind the ceramic tiled plaster walls of the restrooms. The MJPs contained 01-05% chrysotile asbestos and less than 1% amosite asbestos. The MJPs were hard and not easily damaged. The MJPs have an AF GRADE rating of 10.3434 and an AF Priority of 6.

Approximately 1,297 SF of 9" x 9" tan VAT (HSA 001) was present throughout this assessment area except in the restrooms. The VAT contained 05-15% chrysotile asbestos. The VAT was present under carpet in several areas. The nonfriable VAT was in good condition at the time of the survey.

Nonasbestos materials in this assessment area included lagging on fiberglass insulation, vapor barriers and black floor tile mastic. These materials were sampled during the survey and asbestos was not detected in any of the samples collected.

The Air Force GRADE for this area was: 8.4861
The Air Force Priority for this area was: 4

Recommendations: The decorative wall plaster and MJPs in this assessment area should be included in an Operations & Maintenance (O&M) Program, which includes periodic surveillance of the ACM condition. Building occupants should be instructed not to disturb or damage the wall plaster (i.e., hang additional objects on the walls, or conduct any self help renovations projects that would involve disturbing the decorative wall plaster). Prior to renovation or demolition, all friable and potentially friable ACM must be removed in accordance with current EPA NESHAP regulations.

On 2 December 1996, PES completed a walkthrough evaluation in this assessment area. The decorative wall plaster (HSA 013) was in good condition at the time of this evaluation. The walls were recently painted with a decorative paint. HSA 007 and HSA 008 were removed from the building in 1996.

Asbestos Survey Summary Narrative
Building 880
MWR Administrative Facility
Assessment Area D - Wing 4

Date Prepared: 19 JAN 93
Date Revised: 3 DEC 96

Assessment Area D included the entire interior of Wing 4 in Building 880. Asbestos-containing materials (ACM) present in this assessment area included decorative wall plaster and mudded joint packings (MJPs). This area has been designated on AutoCad drawing P000880A.

Approximately 27,600 square feet (SF) of decorative wall plaster (HSA 013) was present in Wing 4. The plaster was present on the perimeter and interior walls of the wing. The wall plaster was the same as that known to be present in all the wings of Building 880. The friable plaster contained 01-05% chrysotile asbestos. Within this assessment area the plaster was in generally good condition. Pictures and other objects were nailed or screwed into the walls in numerous offices of this assessment area. Water damage or delamination of the decorative wall plaster was not identified in this assessment area at the time of the survey. The material has an AF GRADE rating of 8.4861 and an AF Priority of 4.

Approximately 40 linear feet of MJPs (HSA 014) were present on the domestic water pipes in the restrooms pipe chases. The MJPs were present behind the plaster walls of the restrooms sink area. The MJPs contained 01-05% chrysotile asbestos and less than 1% amosite asbestos. The friable MJPs were hard and not easily damaged. The MJPs have an AF GRADE rating of 10.3434 and an AF Priority of 6.

Approximately 1,967 SF of 9" x 9" tan VAT (HSA 001) was present throughout this assessment area. The VAT contained 05-15% chrysotile asbestos. The nonfriable VAT was in good condition at the time of the survey.

Nonasbestos materials in this assessment area included lagging on fiberglass pipe insulation, vapor barriers, black floor tile mastic and carpet mastic. These materials were sampled during the survey and asbestos was not identified in the samples.

The Air Force GRADE for this area was: 8.4861
The Air Force Priority for this area was: 4

Recommendations: The decorative wall plaster and MJPs in this assessment area should be included in an Operations & Maintenance (O&M) Program, which includes periodic surveillance of the ACM condition. Building occupants should be instructed not to disturb or damage the wall plaster (i.e., hang additional objects on the walls, or conduct any self help renovations projects that would involve disturbing the decorative wall plaster). Prior to renovation or demolition, all friable and potentially friable ACM must be removed in accordance with current EPA NESHAP regulations.

On 2 December 1996, PES completed a walkthrough evaluation in this assessment area. The decorative wall plaster (HSA 013) was in good condition at the time of this evaluation. The walls were recently painted with a decorative paint.

Asbestos Survey Summary Narrative
Building 880
MWR Administrative Facility
Assessment Area E - Wing 5

Date Prepared: 19 JAN 93
Date Revised: 3 DEC 96

Assessment Area E included the entire interior of Wing 5 in Building 880. Asbestos-containing materials (ACM) present in this assessment area included decorative wall plaster, mudded joint packings (MJPs), and floor tile mastic. This area has been designated on AutoCad drawing P000880A.

Approximately 27,600 square feet of decorative wall plaster (HSA 013) was present within Wing 5. The plaster was present on the perimeter and interior walls of this assessment area. The plaster was the same as that known to be present in all the wings of Building 880. The friable plaster contained 01-05% chrysotile asbestos. Within this assessment area the plaster was in generally good condition. Pictures and other objects were nailed or screwed into the walls of several offices. Water damage or delamination of the decorative wall plaster was not identified in this assessment area. The plaster has an AF GRADE rating of 8.4861 and an AF Priority of 4.

Approximately 40 linear feet of MJPs (HSA 014) were present in the restrooms pipe chases. The MJPs were present on the domestic water pipes behind the plaster walls of the restrooms sink area. The MJPs contained 01-05% chrysotile and less than 1% amosite asbestos. The MJPs were hard and not easily damaged. The MJP have an AF GRADE rating of 10.3434 and an AF Priority of 6.

Approximately 1,800 SF of asbestos-containing black floor tile mastic (HSA 005) was present under nonasbestos 12" x 12" beige floor tile. The mastic contained 01-05% chrysotile asbestos. The nonfriable mastic appeared to be in good condition at the time of the survey.

Nonasbestos materials in this assessment area included lagging on fiberglass pipe insulation, vapor barriers, vinyl floor tile and carpet mastic. These materials were sampled during the survey and asbestos was not identified in the samples. The straight runs of the piping systems in this assessment area were insulated with nonsuspect fiberglass insulation.

The Air Force GRADE for this area was: 8.4861
The Air Force Priority for this area was: 4

Recommendations: The decorative wall plaster and MJPs in this assessment area should be included in an Operations & Maintenance (O&M) Program, which includes periodic surveillance of the ACM condition. Building occupants should be instructed not to disturb or damage the wall plaster (i.e., hang additional objects on the walls, or conduct any self help renovations projects that would involve disturbing the decorative wall plaster). Prior to renovation or demolition, all friable and potentially friable ACM must be removed in accordance with current EPA NESHAP regulations.

On 2 December 1996, PES completed a walkthrough evaluation in this assessment area. The decorative wall plaster (HSA 013) was in good condition at the time of this evaluation. The walls were recently painted with a decorative paint.

Asbestos Survey Summary Narrative
Building 880
MWR Administrative Facility
Assessment Area F - Wing 6

Date Prepared: 19 JAN 93
Date Revised: 3 DEC 96

Assessment Area F included the entire interior of Wing 6 in Building 880. Asbestos-containing materials (ACM) present in this assessment area included decorative wall plaster, mudded joint packings (MJPs), and floor tile mastic. This area has been designated on AutoCad drawing P000880A.

Approximately 27,600 square feet (SF) of decorative wall plaster (HSA 013) was present within Wing 6. The plaster was present on the perimeter and interior walls of this assessment area. The plaster was the same as that known to be present in all the wings of Building 880. The plaster contained 01-05% chrysotile asbestos. Within this assessment area the plaster was in generally good condition. Pictures and other objects were nailed or screwed into the walls of several offices. Water damage or delamination of the decorative wall plaster was not identified in this assessment area. The plaster has an AF GRADE rating of 8.4861 and an AF Priority of 4.

Approximately 40 linear feet of MJPs (HSA 014) were present in the restrooms pipe chases. The MJPs were present on the domestic water pipes behind the plaster walls of the restrooms sink area. The MJPs contained 01-05% chrysotile and less than 1% amosite asbestos. The MJPs were hard and not easily damaged. The MJPs have an AF GRADE rating of 10.3434 and an AF Priority of 6.

Approximately 1,310 SF of black floor tile mastic (HSA 020) was present under the nonasbestos 9" x 9" white floor tile. The mastic contained 05-15% chrysotile asbestos. The nonfriable mastic appeared to be in good condition at the time of the survey.

Nonasbestos materials in this assessment area included lagging on fiberglass pipe insulation, vapor barriers, scratchcoat and brown coat plaster, 9" x 9" white floor tile, linoleum, linoleum mastic and carpet mastic. These materials were sampled during the survey and asbestos was not identified in the samples. The straight runs of the piping systems in this assessment area were insulated with nonsuspect fiberglass insulation.

The Air Force GRADE for this area was: 8.4861
The Air Force Priority for this area was: 4

Recommendations: The decorative wall plaster and MJPs in this assessment area should be included in an Operations & Maintenance (O&M) Program, which includes periodic surveillance of the ACM condition. Building occupants should be instructed not to disturb or damage the wall plaster (i.e., hang additional objects on the walls, or conduct any self help renovations projects that would involve disturbing the decorative wall plaster). Prior to renovation or demolition, all friable and potentially friable ACM must be removed in accordance with current EPA NESHAP regulations.

On 2 December 1996, PES completed a walkthrough evaluation in this assessment area. The decorative wall plaster (HSA 013) was in good condition at the time of this evaluation. The walls were recently painted with a decorative paint.

Asbestos Survey Summary Narrative
Building 880
MWR Administrative Facility
Assessment Area G - Attic

Date Prepared: 19 JAN 93
Date Revised: 24 SEP 93

Assessment Area G included the entire area above the wings of Building 880. Materials suspected of containing asbestos were not identified in this assessment area. This area has been designated on AutoCad drawing P000880A.

The Air Force GRADE for this area was: 0.0000
The Air Force Priority for this area was: 0

Recommendations: None.

Building 880
MWR Administrative Facility
Assessment Area H - Central Lobby of the Building

Date Prepared: 19 JAN 93
Date Revised: 3 DEC 96

Assessment Area H included the entire central lobby of Building 880. Asbestos-containing materials (ACM) present in this assessment area included decorative wall plaster, glue on ceiling tiles and vinyl asbestos floor tile (VAT). This area has been designated on AutoCad drawing P000880A.

Approximately 17,000 square feet (SF) of decorative wall plaster (HSA 013) was present on the walls of this assessment area. The wall plaster was the same as that known to be present in all the wings of Building 880. The plaster contained 01-05% chrysotile asbestos. Within this assessment area the plaster was in generally good condition. Pictures and other objects were nailed or screwed into the walls of the central lobby. Water damage or delamination of the decorative wall plaster was not identified in this assessment area. The plaster has an AF GRADE rating of 8.4861 and an AF Priority of 4.

Approximately 40 linear feet of MJPs were present on the domestic water pipes in this assessment area. The MJPs contained 01-05% chrysotile and less than 1% amosite asbestos. The friable MJPs were in good condition at the time of the survey. The MJPs have an AF GRADE rating of 10.1117 and an AF Priority of 6.

Approximately 50 SF of asbestos-containing 1' x 1' glue-on ceiling tile (HSA 007) was present in the hallway adjacent to the Wing 3 entrance. The ceiling tile contained 05-15% amosite asbestos. This material has an AF GRADE rating of 10.1721 and an AF Priority of 6.

Approximately 2,350 SF of 9" x 9" tan VAT (HSA 001) was present in this assessment area. The VAT contained 05-15% chrysotile asbestos. The nonfriable VAT was in good condition at the time of the survey.

Nonasbestos materials in this assessment area included black floor tile mastic, 2' x 4' ceiling tile, and carpet mastic. These materials were sampled during the survey and asbestos was not identified in the samples.

The Air Force GRADE for this area was: 8.4861
The Air Force Priority for this area was: 4

Recommendations: The decorative wall plaster and glue-on ceiling tile in this assessment area should be included in an Operations & Maintenance (O&M) Program, which includes periodic surveillance of the ACM condition. Prior to renovation or demolition, all identified friable and potentially friable ACM must be removed in accordance with current EPA NESHAP regulations.

On 2 December 1996, PES completed a walkthrough evaluation in this assessment area. The decorative wall plaster (HSA 013) was in good condition at the time of this evaluation. The walls were recently painted with a decorative paint. HSA 007 and HSA 008 were removed from this assessment area in 1996.

Recommendations: PES recommends periodic surveillance of the decorative wall plaster, ceiling tiles and the identified MJP on the domestic water lines. MaintenancePersonnell should be made aware of the locations of the MJP prior to performing any activity that could disturbed the identified ACM. PES recommends that the building occupants be notified that the wall plaster contains asbestos and instructed not to disturb or damage the plaster(i.e., hang additional objects on the wall, or conduct any self help renovation projects that would involve disturbing the decorative wall plaster).

PETERSON AIR FORCE BASE ASBESTOS MANAGEMENT PROGRAM

ACBM SUMMARY REPORT

17 JUN 98

FACILITY NUMBER: 880

FACILITY DESCRIPTION: MWR Administrative Facility

ASSESSMENT AREA ID: A

ASSESSMENT AREA DESCRIPTION: Wing 1

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
1	Miscellaneous Materials Floor Tile/Floor Finishes Vinyl Floor Tile 9" x 9"	05-15% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
2	Miscellaneous Materials Mastics/Sealants/Coatings Floor Tile Mastic Black Tar	None Detected
3	Miscellaneous Materials Mastics/Sealants/Coatings Carpet Glue	None Detected
6	Miscellaneous Materials Ceiling Tile Lay-in/Suspended Grid 2' x 4'	None Detected
11	Miscellaneous Materials Floor Tile/Floor Finishes Vinyl Floor Tile 9" x 9"	05-15% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
12	Miscellaneous Materials Mastics/Sealants/Coatings Floor Tile Mastic Black Tar	None Detected
13	Surfacing Materials Troweled-on Acoustical/Decorative Ceiling/Wall Plaster Fibrous	01-05% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
14	Thermal Systems Insulation (TSI) Pipe Insulation Elbows/Valves/Fittings Mudded Joint Packing (MJP) Hard Cementitious Packing	00-01% Chrysotile 01-05% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite

PETERSON AIR FORCE BASE ASBESTOS MANAGEMENT PROGRAM

ACBM SUMMARY REPORT

17 JUN 98

FACILITY NUMBER: 880

FACILITY DESCRIPTION: MWR Administrative Facility

ASSESSMENT AREA ID: A

ASSESSMENT AREA DESCRIPTION: Wing 1

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
15	Thermal Systems Insulation (TSI) Pipe Insulation Lagging Cloth - Fine Weave	None Detected
16	Miscellaneous Materials Tar Paper	None Detected

ASSESSMENT AREA ID: B

ASSESSMENT AREA DESCRIPTION: Wing 2

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
13	Surfacing Materials Troweled-on Acoustical/Decorative Ceiling/Wall Plaster Fibrous	01-05% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
14	Thermal Systems Insulation (TSI) Pipe Insulation Elbows/Valves/Fittings Mudded Joint Packing (MJP) Hard Cementitious Packing	00-01% Chrysotile 01-05% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
15	Thermal Systems Insulation (TSI) Pipe Insulation Lagging Cloth - Fine Weave	None Detected
16	Miscellaneous Materials Tar Paper	None Detected
24	Miscellaneous Materials Floor Tile/Floor Finishes Vinyl Floor Tile 12" x 12"	None Detected
25	Miscellaneous Materials Mastics/Sealants/Coatings Floor Tile Mastic Yellow Glue	None Detected

PETERSON AIR FORCE BASE ASBESTOS MANAGEMENT PROGRAM

ACBM SUMMARY REPORT

17 JUN 98

ASSESSMENT AREA ID: C

ASSESSMENT AREA DESCRIPTION: Wing 3

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
1	Miscellaneous Materials Floor Tile/Floor Finishes Vinyl Floor Tile 9" x 9"	05-15% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
2	Miscellaneous Materials Mastics/Sealants/Coatings Floor Tile Mastic Black Tar	None Detected
3	Miscellaneous Materials Mastics/Sealants/Coatings Carpet Glue	None Detected
7	Miscellaneous Materials Glue on Acoustical Tile Acoustical Tiles 1'x 1'	00-00% Chrysotile 05-15% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
8	Miscellaneous Materials Acoustical Tile Mastic Ceiling/Wall Brown	None Detected
13	Surfacing Materials Troweled-on Acoustical/Decorative Ceiling/Wall Plaster Fibrous	01 05% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
14	Thermal Systems Insulation (TSI) Pipe Insulation Elbows/Valves/Fittings Mudded Joint Packing (MJP) Hard Cementitious Packing	00-01% Chrysotile 01-05% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
15	Thermal Systems Insulation (TSI) Pipe Insulation Lagging Cloth - Fine Weave	None Detected
16	Miscellaneous Materials Tar Paper	None Detected

PETERSON AIR FORCE BASE ASBESTOS MANAGEMENT PROGRAM

ACBM SUMMARY REPORT

17 JUN 98

ASSESSMENT AREA ID: D

ASSESSMENT AREA DESCRIPTION: Wing 4

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
1	Miscellaneous Materials Floor Tile/Floor Finishes Vinyl Floor Tile 9" x 9"	05-15% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
2	Miscellaneous Materials Mastics/Sealants/Coatings Floor Tile Mastic Black Tar	None Detected
3	Miscellaneous Materials Mastics/Sealants/Coatings Carpet Glue	None Detected
13	Surfacing Materials Troweled-on Acoustical/Decorative Ceiling/Wall Plaster Fibrous	01-05% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
14	Thermal Systems Insulation (TSI) Pipe Insulation Elbows/Valves/Fittings Mudded Joint Packing (MJP) Hard Cementitious Packing	00-01% Chrysotile 01-05% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
15	Thermal Systems Insulation (TSI) Pipe Insulation Lagging Cloth - Fine Weave	None Detected
16	Miscellaneous Materials Tar Paper	None Detected

ASSESSMENT AREA ID: E

ASSESSMENT AREA DESCRIPTION: Wing 5

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
3	Miscellaneous Materials Mastics/Sealants/Coatings Carpet Glue	None Detected

PETERSON AIR FORCE BASE ASBESTOS MANAGEMENT PROGRAM

ACBM SUMMARY REPORT

17 JUN 98

FACILITY NUMBER: 880

FACILITY DESCRIPTION: MWR Administrative Facility

ASSESSMENT AREA ID: E

ASSESSMENT AREA DESCRIPTION: Wing 5

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
4	Miscellaneous Materials Floor Tile/Floor Finishes Vinyl Floor Tile 12" x 12"	None Detected
5	Miscellaneous Materials Mastics/Sealants/Coatings Floor Tile Mastic Black Tar	01-05% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
13	Surfacing Materials Troweled-on Acoustical/Decorative Ceiling/Wall Plaster Fibrous	01-05% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
14	Thermal Systems Insulation (TSI) Pipe Insulation Elbows/Valves/Fittings Mudded Joint Packing (MJP) Hard Cementitious Packing	00-01% Chrysotile 01-05% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
15	Thermal Systems Insulation (TSI) Pipe Insulation Lagging Cloth - Fine Weave	None Detected
16	Miscellaneous Materials Tar Paper	None Detected

ASSESSMENT AREA ID: F

ASSESSMENT AREA DESCRIPTION: Wing 6

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
13	Surfacing Materials Troweled-on Acoustical/Decorative Ceiling/Wall Plaster Fibrous	01-05% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite

PETERSON AIR FORCE BASE ASBESTOS MANAGEMENT PROGRAM

ACBM SUMMARY REPORT

17 JUN 98

FACILITY NUMBER: 880

FACILITY DESCRIPTION: MWR Administrative Facility

ASSESSMENT AREA ID: F

ASSESSMENT AREA DESCRIPTION: Wing 6

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
14	Thermal Systems Insulation (TSI) Pipe Insulation Elbows/Valves/Fittings Mudded Joint Packing (MJP) Hard Cementitious Packing	00-01% Chrysotile 01-05% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
15	Thermal Systems Insulation (TSI) Pipe Insulation Lagging Cloth - Fine Weave	None Detected
16	Miscellaneous Materials Tar Paper	None Detected
17	Miscellaneous Materials Floor Tile/Floor Finishes Linoleum	None Detected
18	Miscellaneous Materials Mastics/Sealants/Coatings Other Floor Covering Mastic (Linoleum, Wood Parquet, etc.)	None Detected
19	Miscellaneous Materials Floor Tile/Floor Finishes Vinyl Floor Tile 9" x 9"	None Detected
20	Miscellaneous Materials Mastics/Sealants/Coatings Floor Tile Mastic Black Tar	05-15% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
21	Surfacing Materials Browncoat/Scratchcoat Plaster	None Detected
22	Surfacing Materials Browncoat/Scratchcoat Plaster	None Detected

PETERSON AIR FORCE BASE ASBESTOS MANAGEMENT PROGRAM

ACBM SUMMARY REPORT

17 JUN 98

FACILITY NUMBER: 880

FACILITY DESCRIPTION: MWR Administrative Facility

ASSESSMENT AREA ID: F

ASSESSMENT AREA DESCRIPTION: Wing 6

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
23	Miscellaneous Materials Tectum Board Interior Panels	None Detected

ASSESSMENT AREA ID: G

ASSESSMENT AREA DESCRIPTION: Attic

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
0		None Detected

ASSESSMENT AREA ID: H

ASSESSMENT AREA DESCRIPTION: Central Lobby of the Building

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
1	Miscellaneous Materials Floor Tile/Floor Finishes Vinyl Floor Tile 9" x 9"	05-15% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
2	Miscellaneous Materials Mastics/Sealants/Coatings Floor Tile Mastic Black Tar	None Detected
3	Miscellaneous Materials Mastics/Sealants/Coatings Carpet Glue	None Detected
6	Miscellaneous Materials Ceiling Tile Lay-in/Suspended Grid 2' x 4'	None Detected
7	Miscellaneous Materials Glue on Acoustical Tile Acoustical Tiles 1'x 1'	00-00% Chrysotile 05-15% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite

PETERSON AIR FORCE BASE ASBESTOS MANAGEMENT PROGRAM

ACBM SUMMARY REPORT

17 JUN 98

FACILITY NUMBER: 880

FACILITY DESCRIPTION: MWR Administrative Facility

ASSESSMENT AREA ID: H

ASSESSMENT AREA DESCRIPTION: Central Lobby of the Building

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
8	Miscellaneous Materials Acoustical Tile Mastic Ceiling/Wall Brown	None Detected
9	Miscellaneous Materials Glue on Acoustical Tile Acoustical Tiles 1'x 1'	None Detected
10	Miscellaneous Materials Acoustical Tile Mastic Ceiling/Wall Brown	None Detected
13	Surfacing Materials Troweled-on Acoustical/Decorative Ceiling/Wall Plaster Fibrous	01-05% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite

Asbestos Survey Summary Narrative
Building 365
Headquarters Specified Fourth WW
Assessment Area A - Offices

Date Prepared: 30 APR 93
Date Revised: 13 SEP 93

Assessment Area A included the offices in Building 365. Asbestos-containing material (ACM) identified in this assessment area was vinyl asbestos floor tile (VAT). This area has been designated on AutoCad drawing P000365A.

Approximately 2,750 square feet (SF) of white 12" x 12" VAT (HSA 003) was present under the carpet in the offices. This VAT contained 01-05% chrysotile asbestos. Approximately 3,275 SF of brown 9" x 9" VAT (HSA 008) was present in this assessment area. The brown VAT contained 15-30% chrysotile asbestos. These nonfriable materials were in good condition at the time of the survey.

Nonasbestos materials identified in this assessment area included decorative wall plaster, ceiling tile, floor tile mastic, linoleum, carpet mastic, acoustical tiles and brown acoustical tile mastic. These materials were sampled at the time of the survey. Asbestos was not identified in the samples analyzed.

The Air Force Grade for this area was: 11.8641
The Air Force Priority for this area was: 6

Recommendations: Prior to renovation or demolition, All identified potentially friable ACM must be removed inaccordance with current EPA NESHAP regulations.

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Asbestos Survey Summary Narrative
Building 365
Headquarters Specified Fourth WW
Assessment Area B - Restrooms

Date Prepared: 30 APR 93
Date Revised: 13 SEP 93

Assessment Area B included both restrooms in Building 365. PES did not identify any suspect asbestos-containing materials within this assessment area. This area has been designated on AutoCad drawing P000365A.

The Air Force Grade for this area was: 0.0000
The Air Force Priority for this area was: 0

Recommendations: None.

Asbestos Survey Summary Narrative
Building 365
Headquarters Specified Fourth WW
Assessment Area C - Mechanical Room

Date Prepared: 30 APR 93
Date Revised: 13 SEP 93

Assessment Area C included the mechanical room in Building 365. PES identified two suspect asbestos-containing materials within this assessment area. These materials were vibration dampener on the air handling unit and the lagging over fiberglass thermal system insulation on the heating water supply/return piping. These materials did not contain asbestos in any form. This area has been designated on AutoCad drawing P000365A.

The Air Force Grade for this area was: 0.0000
The Air Force Priority for this area was: 0

Recommendations: None.

Asbestos Survey Summary Narrative
Building 365
Headquarters Specified Fourth WW
Assessment Area D - Building Exterior

Date Prepared: 30 APR 93
Date Revised: 13 SEP 93

Assessment Area D was the exterior of Building 365. PES identified two suspect asbestos-containing materials. These materials were exterior stucco plaster and vapor barrier under the stucco. Laboratory analysis indicated that these materials did not contain asbestos in any form. This area has been designated on AutoCad drawing P000365A.

The Air Force Grade for this area was: 0.0000
The Air Force Priority for this area was: 0

Recommendations: None.

PETERSON AIR FORCE BASE ASBESTOS MANAGEMENT PROGRAM

HOMOGENEOUS SAMPL EA REPORT

17 JUN

FACILITY ID: 365 FACILITY NAME: Headquarters Specified Fourth WW PRIORITY: 6 GRADE RATING: 11.8641

PRIMARY POC: SSG Christopher Flattes TELEPHONE: 556-4073

SECONDARY POC: Ms. Linda Craven TELEPHONE: 556-6187

FACILITY ABATEMENT COST: $22,725.00

HSA ID: 1 HSA DESCRIPTION: Fissured ceiling tile in offices HSA PRIORITY: 0 HSA GRADE RATING: 0.0000

Lay-in/Suspended Grid 2' x 2' Miscellaneous Materials [3A1b]

SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	ASBESTOS CONTENT: CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	OTHER MATERIALS: MATERIAL 1	MATERIAL2	MATERIAL3
PE-000365-001	93-02014	L		00-00	00-00	00-00	00-00	00-00	Cellulose	Perlite	Fibrous Glass
PE-000365-002	93-02015	L		00-00	00-00	00-00	00-00	00-00	Cellulose	Perlite	Fibrous Glass
PE-000365-003	93-02016	L		00-00	00-00	00-00	00-00	00-00	Cellulose	Perlite	Fibrous Glass

HSA ID: 2 HSA DESCRIPTION: Decorative wall plaster HSA PRIORITY: 0 HSA GRADE RATING: 0.0000

Cementitious/Textured Surfacing Materials [1B2]

SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	ASBESTOS CONTENT: CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	OTHER MATERIALS: MATERIAL 1	MATERIAL2	MATERIAL3
PE-000365-004	93-02017	L		00-00	00-00	00-00	00-00	00-00	Carbonates	Unid. Other	Perlite
PE-000365-005	93-02018	L		00-00	00-00	00-00	00-00	00-00	Carbonates	Perlite	Quartz
PE-000365-006		L									
				SAMPLE NOT ANALYZED							
PE-000365-007	93-02020	L		00-00	00-00	00-00	00-00	00-00	Carbonates	Gypsum	Perlite
PE-000365-008	93-02021	L		00-00	00-00	00-00	00-00	00-00	Carbonates	Perlite	Unid. Other

HSA ID: 3 HSA DESCRIPTION: White floor tile in offices HSA PRIORITY: 6 HSA GRADE RATING: 11.8641

Vinyl Floor Tile 12" x 12" Miscellaneous Materials [3B1a]

SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	ASBESTOS CONTENT: CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	OTHER MATERIALS: MATERIAL 1	MATERIAL2	MATERIAL3
PE-000365-009	93-02022	N	C	01-05	00-00	00-00	00-00	00-00	Carbonates	Binders	
PE-000365-010		N	C								

SAMPLE NOT ANALYZED - APPLIED POSITIVE SAMPLE RESULT

FACILITY ID: 365 FACILITY NAME: Headquarters Specified Fourth WW PRIORITY: 6 GRADE RATING: 11.8641

HSA ID: 3 HSA DESCRIPTION: White floor tile in offices HSA PRIORITY: 6 HSA GRADE RATING: 11.8641

Vinyl Floor Tile 12" x 12" Miscellaneous Materials [3B1a]

SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	ASBESTOS CONTENT: CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	OTHER MATERIALS: MATERIAL 1	MATERIAL2	MATERIAL3
PE-000365-011		N	C								

SAMPLE NOT ANALYZED - APPLIED POSITIVE SAMPLE RESULT

HSA ID: 4 HSA DESCRIPTION: Mastic under HSA 003 HSA PRIORITY: 0 HSA GRADE RATING: 0.0000

Floor Tile Mastic Black Tar Miscellaneous Materials [3C1a]

SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	ASBESTOS CONTENT: CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	OTHER MATERIALS: MATERIAL 1	MATERIAL2	MATERIAL3
PE-000365-012	93-02025	N	C	00-00	00-00	00-00	00-00	00-00	Mastic	Quartz	Cellulose
PE-000365-013	93-02026	N	C	00-00	00-00	00-00	00-00	00-00	Mastic	Quartz	Carbonates
PE-000365-014	93-02027	N	C	00-00	00-00	00-00	00-00	00-00	Mastic	Carbonates	Quartz

HSA ID: 5 HSA DESCRIPTION: Linoleum in closets HSA PRIORITY: 0 HSA GRADE RATING: 0.0000

Linoleum Miscellaneous Materials [3B2]

SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	ASBESTOS CONTENT: CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	OTHER MATERIALS: MATERIAL 1	MATERIAL2	MATERIAL3
PE-000365-015	93-02028	N	C	00-00	00-00	00-00	00-00	00-00	Binders	Quartz	
PE-000365-016	93-02029	N	C	00-00	00-00	00-00	00-00	00-00	Binders	Quartz	
PE-000365-017	93-02030	N	C	00-00	00-00	00-00	00-00	00-00	Binders	Quartz	

HSA ID: 6 HSA DESCRIPTION: Mastic under linoleum HSA PRIORITY: 0 HSA GRADE RATING: 0.0000

Other Floor Covering Mastic (Linoleum, Wood Parquet, etc.) Miscellaneous Materials [3C2]

SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	ASBESTOS CONTENT: CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	OTHER MATERIALS: MATERIAL 1	MATERIAL2	MATERIAL3

FACILITY ID: 365 FACILITY NAME: Headquarters Specified Fourth WW PRIORITY: 6 GRADE RATING: 11.8641

HSA ID: 6 HSA DESCRIPTION: Mastic under linoleum HSA PRIORITY: 0 HSA GRADE RATING: 0.0000

Other Floor Covering Mastic (Linoleum, Wood Parquet, etc.) Miscellaneous Materials [3C2]

				ASBESTOS CONTENT					OTHER MATERIALS		
SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	MATERIAL 1	MATERIAL2	MATERIAL3
PE-000365-018	93-02031	N	C	00-00	00-00	00-00	00-00	00-00	Mastic	Carbonates	Cellulose
PE-000365-019	93-02032	N	C	00-00	00-00	00-00	00-00	00-00	Mastic	Unid. Other	Carbonates
PE-000365-020	93-02033	N	C	00-01	00-00	00-00	00-00	00-00	Mastic	Carbonates	Cellulose

HSA ID: 7 HSA DESCRIPTION: Ridged ceiling tile throughout building HSA PRIORITY: 0 HSA GRADE RATING: 0.0000

Lay-in/Suspended Grid 2' x 2' Miscellaneous Materials [3A1b]

				ASBESTOS CONTENT					OTHER MATERIALS		
SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	MATERIAL 1	MATERIAL2	MATERIAL3
PE-000365-021	93-02034	L		00-00	00-00	00-00	00-00	00-00	Fibrous Glass	Perlite	Unid. Other
PE-000365-022	93-02035	L		00-00	00-00	00-00	00-00	00-00	Fibrous Glass	Perlite	Unid. Other
PE-000365-023	93-02036	L		00-00	00-00	00-00	00-00	00-00	Fibrous Glass	Perlite	Quartz

HSA ID: 8 HSA DESCRIPTION: VAT in Rms 122, 105, 115 & S W wing HSA PRIORITY: 6 HSA GRADE RATING: 11.8641

Vinyl Floor Tile 9" x 9" Miscellaneous Materials [3B1b]

				ASBESTOS CONTENT					OTHER MATERIALS		
SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	MATERIAL 1	MATERIAL2	MATERIAL3
PE-000365-024	93-02037	N	C	15-30	00-00	00-00	00-00	00-00	Carbonates	Binders	
PE-000365-025		N	C								

SAMPLE NOT ANALYZED - APPLIED POSITIVE SAMPLE RESULT

PE-000365-026	N	C

SAMPLE NOT ANALYZED - APPLIED POSITIVE SAMPLE RESULT

PETERSON AIR FORCE BASE ASBESTOS MANAGEMENT PROGRAM

HOMOGENEOUS SAMPL .EA REPORT

17 JUN

FACILITY ID: 365 FACILITY NAME: Headquarters Specified Fourth WW PRIORITY: 6 GRADE RATING: 11.8641

HSA ID: 9 HSA DESCRIPTION: Mastic under 9" X 9" brown floor tile HSA PRIORITY: 0 HSA GRADE RATING: 0.0000

Floor Tile Mastic Black Tar Miscellaneous Materials [3C1a]

SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	ASBESTOS CONTENT: CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	OTHER MATERIALS: MATERIAL 1	MATERIAL2	MATERIAL3
PE-000365-027		N	C								
				SAMPLE NOT ANALYZED							
PE-000365-028		N	C								
				SAMPLE NOT ANALYZED							
PE-000365-029	93-02042	N	C	00-00	00-00	00-00	00-00	00-00	Mastic	Carbonates	Cellulose

HSA ID: 10 HSA DESCRIPTION: Carpet glue throughout offices HSA PRIORITY: 0 HSA GRADE RATING: 0.0000

Carpet Glue Miscellaneous Materials [3C3]

SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	ASBESTOS CONTENT: CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	OTHER MATERIALS: MATERIAL 1	MATERIAL2	MATERIAL3
PE-000365-030	93-02043	N	C	00-00	00-00	00-00	00-00	00-00	Mastic	Carbonates	Cellulose
PE-000365-031	93-02044	N	C	00-00	00-00	00-00	00-00	00-00	Mastic	Carbonates	Cellulose
PE-000365-032	93-02045	N	C	00-00	00-00	00-00	00-00	00-00	Mastic	Carbonates	Cellulose

HSA ID: 11 HSA DESCRIPTION: Acoustical ceiling tile above CT HSA PRIORITY: 0 HSA GRADE RATING: 0.0000

Acoustical Tiles 1'x 1' Miscellaneous Materials [3A3a]

SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	ASBESTOS CONTENT: CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	OTHER MATERIALS: MATERIAL 1	MATERIAL2	MATERIAL3
PE-000365-033	93-02046	L		00-00	00-00	00-00	00-00	00-00	Fibrous Glass	Cellulose	Perlite
PE-000365-034	93-02047	L		00-00	00-00	00-00	00-00	00-00	Fibrous Glass	Cellulose	Perlite
PE-000365-035	93-02048	L		00-00	00-00	00-00	00-00	00-00	Fibrous Glass	Cellulose	Perlite

FACILITY ID: 365 FACILITY NAME: Headquarters Specified Fourth WW PRIORITY: 6 GRADE RATING: 11.8641

HSA ID: 12 HSA DESCRIPTION: Mastic under 1' X 1' acoustical tile HSA PRIORITY: 0 HSA GRADE RATING: 0.0000
Ceiling/Wall Brown Miscellaneous Materials [3C7b]

				ASBESTOS CONTENT					OTHER MATERIALS		
SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	MATERIAL 1	MATERIAL2	MATERIAL3
PE-000365-036	93-02049	N	C	00-00	00-00	00-00	00-00	00-00	Mastic	Fibrous Glass	Quartz
PE-000365-037	93-02050	N	C	00-00	00-00	00-00	00-00	00-00	Mastic	Quartz	Fibrous Glass
PE-000365-038	93-02051	N	C	00-00	00-00	00-00	00-00	00-00	Mastic	Cellulose	Quartz

HSA ID: 13 HSA DESCRIPTION: Lagging on fiberglass HW S/R HSA PRIORITY: 0 HSA GRADE RATING: 0.0000
Lagging Cloth - Fine Weave Thermal Systems Insulation (TSI) [2A3b]

				ASBESTOS CONTENT					OTHER MATERIALS		
SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	MATERIAL 1	MATERIAL2	MATERIAL3
PE-000365-039	93-02052	N	C	00-00	00-00	00-00	00-00	00-00	Cellulose	Unid. Other	Carbonates
PE-000365-040	93-02053	N	C	00-00	00-00	00-00	00-00	00-00	Cellulose	Unid. Other	Carbonates
PE-000365-041	93-02054	N	C	00-00	00-00	00-00	00-00	00-00	Cellulose	Unid. Other	Carbonates

HSA ID: 14 HSA DESCRIPTION: Exterior plaster HSA PRIORITY: 0 HSA GRADE RATING: 0.0000
Cementitious/Textured Surfacing Materials [1B2]

				ASBESTOS CONTENT					OTHER MATERIALS		
SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	MATERIAL 1	MATERIAL2	MATERIAL3
PE-000365-042	93-02055	N	C	00-00	00-00	00-00	00-00	00-00	Quartz	Unid. Other	Gypsum
PE-000365-043	93-02056	N	C	00-00	00-00	00-00	00-00	00-00	Quartz	Unid. Other	Gypsum
PE-000365-044	93-02057	N	C	00-00	00-00	00-00	00-00	00-00	Quartz	Unid. Other	Gypsum
PE-000365-045	93-02058	N	C	00-00	00-00	00-00	00-00	00-00	Quartz	Unid. Other	Gypsum
PE-000365-046	93-02059	N	C	00-00	00-00	00-00	00-00	00-00	Quartz	Unid. Other	Gypsum

FACILITY ID: 365 FACILITY NAME: Headquarters Specified Fourth WW PRIORITY: 6 GRADE RATING: 11.8641

HSA ID: 15 HSA DESCRIPTION: Vapor barrier under exterior plaster HSA PRIORITY: 0 HSA GRADE RATING: 0.0000
Miscellaneous Materials [3K]

				ASBESTOS CONTENT					OTHER MATERIALS		
SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	MATERIAL 1	MATERIAL2	MATERIAL3
PE-000365-047	93-02060	N	C	00-00	00-00	00-00	00-00	00-00	Cellulose	Tar	Carbonates

HSA ID: 16 HSA DESCRIPTION: Vibration dampener HSA PRIORITY: 0 HSA GRADE RATING: 0.0000
Thick Weave Miscellaneous Materials [3H]

				ASBESTOS CONTENT					OTHER MATERIALS		
SAMPLE ID	LAB ID	FRIABLE CODE	NESHAP CODE	CHRYSOTILE	AMOSITE	CROCIDOLITE	ACTINOLITE /TREMOLITE	ANTHOPHYLLITE	MATERIAL 1	MATERIAL2	MATERIAL3
PE-000365-048	93-02061	N	C	00-00	00-00	00-00	00-00	00-00	Fibrous Glass	Unid. Other	Carbonates

PETERSON AIR FORCE BASE ASBESTOS MANAGEMENT PROGRAM

ACBM SUMMARY REPORT

17 JUN 98

FACILITY NUMBER: 365

FACILITY DESCRIPTION: Headquarters Specified Fourth WW

ASSESSMENT AREA ID: A

ASSESSMENT AREA DESCRIPTION: Offices

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
1	Miscellaneous Materials Ceiling Tile Lay-in/Suspended Grid 2' x 2'	None Detected
2	Surfacing Materials Spray-applied Acoustical/Decorative Ceiling/Wall Plaster Cementitious/Textured	None Detected
3	Miscellaneous Materials Floor Tile/Floor Finishes Vinyl Floor Tile 12" x 12"	01-05% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
4	Miscellaneous Materials Mastics/Sealants/Coatings Floor Tile Mastic Black Tar	None Detected
5	Miscellaneous Materials Floor Tile/Floor Finishes Linoleum	None Detected
6	Miscellaneous Materials Mastics/Sealants/Coatings Other Floor Covering Mastic (Linoleum, Wood Parquet, etc.)	None Detected
7	Miscellaneous Materials Ceiling Tile Lay-in/Suspended Grid 2' x 2'	None Detected
8	Miscellaneous Materials Floor Tile/Floor Finishes Vinyl Floor Tile 9" x 9"	15-30% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
9	Miscellaneous Materials Mastics/Sealants/Coatings Floor Tile Mastic Black Tar	None Detected

PETERSON AIR FORCE BASE ASBESTOS MANAGEMENT PROGRAM

ACBM SUMMARY REPORT

17 JUN 98

FACILITY NUMBER: 365

FACILITY DESCRIPTION: Headquarters Specified Fourth WW

ASSESSMENT AREA ID: A

ASSESSMENT AREA DESCRIPTION: Offices

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
10	Miscellaneous Materials Mastics/Sealants/Coatings Carpet Glue	None Detected
11	Miscellaneous Materials Glue on Acoustical Tile Acoustical Tiles 1'x 1'	None Detected
12	Miscellaneous Materials Acoustical Tile Mastic Ceiling/Wall Brown	None Detected

ASSESSMENT AREA ID: B

ASSESSMENT AREA DESCRIPTION: Restrooms

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
0		None Detected

ASSESSMENT AREA ID: C

ASSESSMENT AREA DESCRIPTION: Mechanical Room

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
13	Thermal Systems Insulation (TSI) Pipe Insulation Lagging Cloth - Fine Weave	None Detected
16	Miscellaneous Materials Vibration Dampener/Flexible Duct Connectors Thick Weave	None Detected

PETERSON AIR FORCE BASE ASBESTOS MANAGEMENT PROGRAM

ACBM SUMMARY REPORT

17 JUN 98

ASSESSMENT AREA ID: D

ASSESSMENT AREA DESCRIPTION: Building Exterior

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
14	Surfacing Materials Spray-applied Acoustical/Decorative Ceiling/Wall Plaster Cementitious/Textured	None Detected
15	Miscellaneous Materials Tar Paper	None Detected

Facility Summary Report
Building 365
Headquarters Specified Fourth WW

Date Prepared: 30 APR 93
Date Revised: 12 DEC 96

PES conducted an asbestos identification survey of Building 365 on 27 JAN 93. Building 365 was a 9,325 square foot, one story building. The building was constructed of wood framing with stucco exterior on a poured concrete foundation. The building was constructed in 1951.

PES identified four assessment areas within Building 365. In summary, these were:

Area Code	Assessment Area	AF GRADE	AF Priority
A	Offices	11.8641	6
B	Restrooms	0.0000	0
C	Mechanical Room	0.0000	0
D	Building Exterior	0.0000	0

Overall GRADE: 11.8641 Overall Priority: 6

Sixteen homogeneous sampling areas (HSA's) were identified in this building. PES collected 48 samples of suspect asbestos-containing materials (ACM) from Building 365. Sample locations and identified ACM area shown on AutoCad drawing P000365A.

On 12 Dec 1996, Mr. Ian Cummings and Mr. Vincent Colo of PES completed a walkthrough evaluation of Building 365. The facility was renovated sometime after the initial survey. The building custodian could not provide PES with additional information on the renovation project. Building occupants and this evaluation indicated that the asbestos-containing materials were not removed at the time of this renovation.

PETERSON AIR FORCE BASE ASBESTOS MANAGEMENT PROGRAM
ACBM SUMMARY REPORT
29 JUL 93

FACILITY NUMBER: 365
FACILITY DESCRIPTION: Headquarters Specified Fourth WW

ASSESSMENT AREA ID: A
ASSESSMENT AREA DESCRIPTION: Offices

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
1	Miscellaneous Materials Ceiling Tile Lay-in/Suspended Grid 2' x 2'	None Detected
2	Surfacing Materials Spray-applied Acoustical/Decorative Ceiling/Wall Cementitious/Textured	None Detected
3	Miscellaneous Materials Floor Tile/Floor Finishes Vinyl Floor Tile 12" x 12"	01-05% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
4	Miscellaneous Materials Mastics/Sealants/Coatings Floor Tile Mastic Black Tar	None Detected
5	Miscellaneous Materials Floor Tile/Floor Finishes Linoleum	None Detected
6	Miscellaneous Materials Mastics/Sealants/Coatings Other Floor Covering Mastic (Linoleum, Wood	None Detected
7	Miscellaneous Materials Ceiling Tile Lay-in/Suspended Grid 2' x 2'	None Detected
8	Miscellaneous Materials Floor Tile/Floor Finishes Vinyl Floor Tile 9" x 9"	15-30% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
9	Miscellaneous Materials Mastics/Sealants/Coatings Floor Tile Mastic Black Tar	None Detected
10	Miscellaneous Materials Mastics/Sealants/Coatings Carpet Glue	None Detected
11	Miscellaneous Materials Glue on Acoustical Tile Acoustical Tiles 1'x 1'	None Detected

PETERSON AIR FORCE BASE ASBESTOS MANAGEMENT PROGRAM
FACILITY SAMPLE SUMMARY REPORT
29 JUL 93

FACILITY NUMBER: 365
FACILITY DESCRIPTION: Headquarters Specified Fourth WW

SAMPLE NUMBER	SAMPLE LOCATION	BOUNDING DESCRIPTION	ASBESTOS RESULTS
		from west wall	00-00 % Amosite 00-00 % Crocidolite 00-00 % Actinolite/Tremolite 00-00 % Anthophyllite
PE-000365-016	Janitor's closet	2' from south wall, 1' from west wall	00-00 % Chrysotile 00-00 % Amosite 00-00 % Crocidolite 00-00 % Actinolite/Tremolite 00-00 % Anthophyllite
PE-000365-017	Janitor's closet	2' from south wall, 1' from west wall	00-00 % Chrysotile 00-00 % Amosite 00-00 % Crocidolite 00-00 % Actinolite/Tremolite 00-00 % Anthophyllite
PE-000365-018	Janitor's closet	2' from south wall, 1' from west wall	00-00 % Chrysotile 00-00 % Amosite 00-00 % Crocidolite 00-00 % Actinolite/Tremolite 00-00 % Anthophyllite
PE-000365-019	Janitor's closet	2' from south wall, 1' from west wall	00-00 % Chrysotile 00-00 % Amosite 00-00 % Crocidolite 00-00 % Actinolite/Tremolite 00-00 % Anthophyllite
00365-020	Janitor's closet	2' from south wall, 1' from west wall	00-01 % Chrysotile 00-00 % Amosite 00-00 % Crocidolite 00-00 % Actinolite/Tremolite 00-00 % Anthophyllite
PE-000365-021	Hallway outside room 121	0' from north wall, 0' from west wall	00-00 % Chrysotile 00-00 % Amosite 00-00 % Crocidolite 00-00 % Actinolite/Tremolite 00-00 % Anthophyllite
PE-000365-022	Hallway outside restroom	18' from south wall, 2' from west wall	00-00 % Chrysotile 00-00 % Amosite 00-00 % Crocidolite 00-00 % Actinolite/Tremolite 00-00 % Anthophyllite
PE-000365-023	Hallway outside restroom	16' from south wall, 2' from west wall	00-00 % Chrysotile 00-00 % Amosite 00-00 % Crocidolite 00-00 % Actinolite/Tremolite 00-00 % Anthophyllite
PE-000365-024	Conference room 122	0' from north wall, 0' from west wall	15-30 % Chrysotile 00-00 % Amosite 00-00 % Crocidolite 00-00 % Actinolite/Tremolite 00-00 % Anthophyllite
PE-000365-025	Conference room 122	0' from north wall, 0' from west wall	Applied Positive Result
PE-000365-026	Conference room 122	0' from north wall, 0' from west wall	Applied Positive Result
000365-027	Conference room 122	0' from north wall, 0' from west wall	None Detected
PE-000365-028	Conference room 122	0' from north wall, 0' from west wall	None Detected
PE-000365-029	Conference room 122	0' from north wall, 0' from west wall	00-00 % Chrysotile 00-00 % Amosite 00-00 % Crocidolite 00-00 % Actinolite/Tremolite 00-00 % Anthophyllite

PETERSON AIR FORCE BASE ASBESTOS MANAGEMENT PROGRAM
FACILITY SAMPLE SUMMARY REPORT
29 JUL 93

FACILITY NUMBER: 365
FACILITY DESCRIPTION: Headquarters Specified Fourth WW

SAMPLE NUMBER	SAMPLE LOCATION	BOUNDING DESCRIPTION	ASBESTOS RESULTS
PE-000365-030	Conference room 122	1' from north wall, 1' from west wall	00-00% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
PE-000365-031	Conference room 122	1' from north wall, 1' from west wall	00-00% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
PE-000365-032	Conference room 122	1' from north wall, 1' from west wall	00-00% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
PE-000365-033	Room 115	10' from east wall, 20' from south wall	00-00% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
PE-000365-034	Room 115	9' from east wall, 20' from south wall	00-00% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
PE-000365-035	Room 115	11' from east wall, 18' from south wall	00-00% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
PE-000365-036	Room 115	9' from east wall, 19' from south wall	00-00% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
PE-000365-037	Room 115	10' from east wall, 20' from south wall	00-00% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
PE-000365-038	Room 115	11' from east wall, 19' from south wall	00-00% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
PE-000365-039	Mechanical room	1' from north wall, 18' from west wall	00-00% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
PE-000365-040	Mechanical room	1' from north wall, 19' from west wall	00-00% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
PE-000365-041	Mechanical room	1' from north wall, 20' from west wall	00-00% Chrysotile 00-00% Amosite 00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite
PE-000365-042	South exterior wall	0' from south wall, 1' from east wall	00-00% Chrysotile 00-00% Amosite

PETERSON AIR FORCE BASE ASBESTOS MANAGEMENT PROGRAM
FACILITY SAMPLE SUMMARY REPORT
29 JUL 93

.ILITY NUMBER: 365
FACILITY DESCRIPTION: Headquarters Specified Fourth WW

SAMPLE NUMBER	SAMPLE LOCATION	BOUNDING DESCRIPTION	ASBESTOS RESULTS
PE-000365-043	South exterior wall	0' from south wall, 1' from east wall	00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite 00-00% Chrysotile 00-00% Amosite
PE-000365-044	South exterior wall	0' from south wall, 1' from east wall	00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite 00-00% Chrysotile 00-00% Amosite
PE-000365-045	South exterior wall	0' from south wall, 1' from east wall	00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite 00-00% Chrysotile 00-00% Amosite
PE-000365-046	South exterior wall	0' from south wall, 1' from east wall	00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite 00-00% Chrysotile 00-00% Amosite
PE-000365-047	South exterior wall under surface	0' from south wall, 1' from east wall	00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite 00-00% Chrysotile 00-00% Amosite
PE-000365-048	Mechanical room	3' from north wall, 12' from west wall	00-00% Crocidolite 00-00% Actinolite/Tremolite 00-00% Anthophyllite 00-00% Chrysotile 00-00% Amosite

PETERSON AIR FORCE BASE ASBESTOS MANAGEMENT PROGRAM
ACBM SUMMARY REPORT
29 JUL 93

FACILITY NUMBER: 365
FACILITY DESCRIPTION: Headquarters Specified Fourth WW

ASSESSMENT AREA ID: A
ASSESSMENT AREA DESCRIPTION: Offices

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
12	Miscellaneous Materials Acoustical Tile Mastic Brown	None Detected

ASSESSMENT AREA ID: B
ASSESSMENT AREA DESCRIPTION: Restrooms

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
0		None Detected

ASSESSMENT AREA ID: C
ASSESSMENT AREA DESCRIPTION: Mechanical Room

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
13	Thermal Systems Insulation (TSI) Pipe Insulation Lagging Cloth - Fine Weave	None Detected
16	Miscellaneous Materials Vibration Dampener/Flexible Duct Connectors Thick Weave	None Detected

ASSESSMENT AREA ID: D
ASSESSMENT AREA DESCRIPTION: Building Exterior

HSA ID	MATERIAL DESCRIPTION	TYPE AND PERCENT ASBESTOS
14	Surfacing Materials Spray-applied Acoustical/Decorative Ceiling/Wall Cementitious/Textured	None Detected
15	Miscellaneous Materials Tar Paper	None Detected

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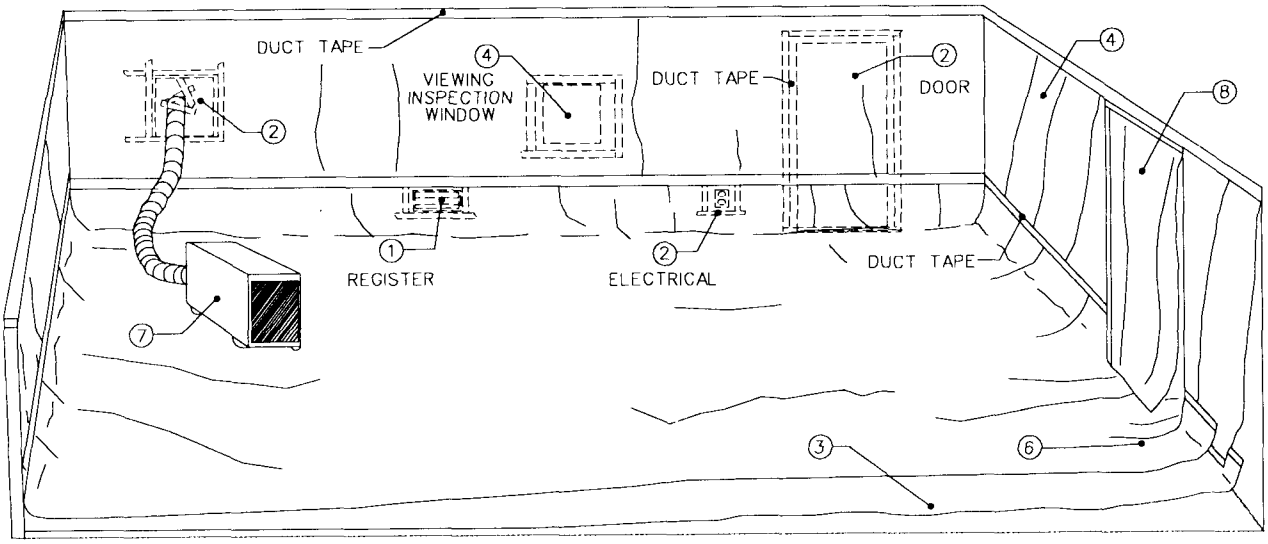


Installation of critical barrier and full containment area (for hard floor surfaces)

1. Establish work area so that unauthorized entry is prevented; see sheet 11. Eliminate airflow into containment area by isolation of all supply and return air ducts from mechanical system. Lock doors and windows not required for access.

2. Install 6-mil polyethylene critical barriers over all windows, doors, wall openings, electrical outlets, etc. Secure with duct tape on all sides. HEPA vacuum furniture, fixtures, and equipment and remove from or protect in containment area, as specified by the contract.

3. Install first layer of 6-mil polyethylene on floor, extending the polyethylene 18 inches up wall. Secure with duct tape.

4. Protect wall surface with 6-mil polyethylene from floor to ceiling. Install view inspection windows, where feasible.

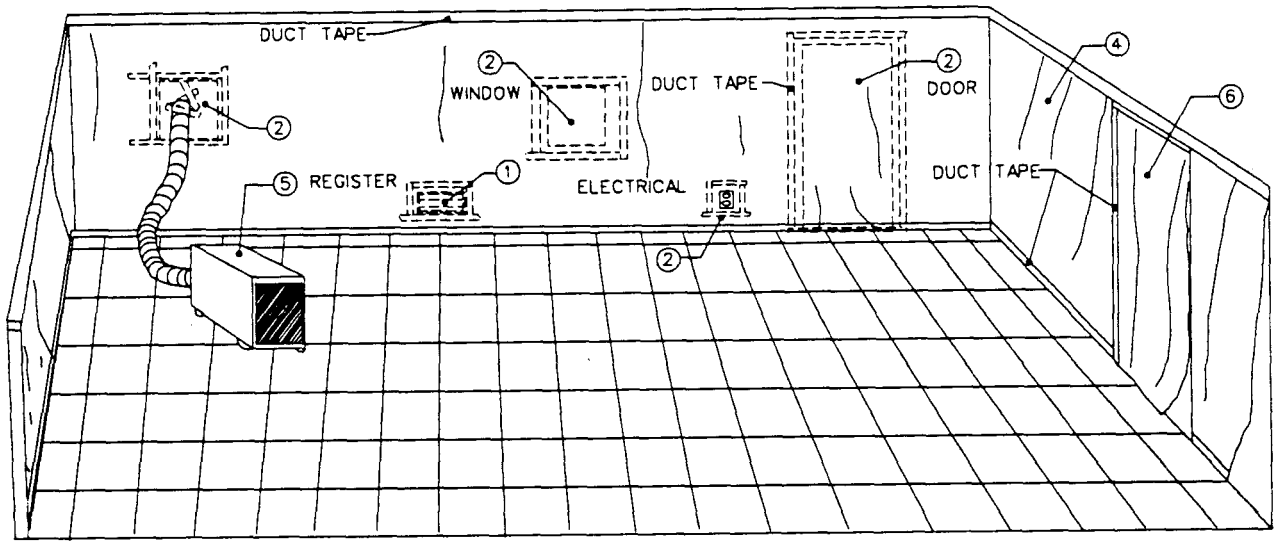
5. Prepare area as follows: turn off electrical power and remove light fixtures. Protect ceiling as required. HEPA vacuum floor and walls.

6. Install top layer of 6-mil polyethylene.

7. Install HEPA filter unit and duct work; see sheet 8.

8. Prepare door into decontamination unit or load-out unit; see sheet 22 for decontamination unit and sheet 20 for load-out unit. Doors that swing into the work area must be removed from hinges.

Final clearance requirements. After abatement has been completed, see sheet 17 for final clearance requirements.



Installation of critical barrier and full containment area (for vinyl tile floors)

1. Establish work area so that unauthorized entry is prevented; see sheet 11. Eliminate airflow into containment area by isolating all supply and return air ducts from mechanical system. Lock doors and windows not required for access.

2. Install 6-mil polyethylene critical barriers over all windows, doors, wall openings, electrical outlets, etc. Secure with duct tape on all sides. HEPA vacuum furniture, fixtures, and equipment and remove from or protect in containment area, as specified by the contract.

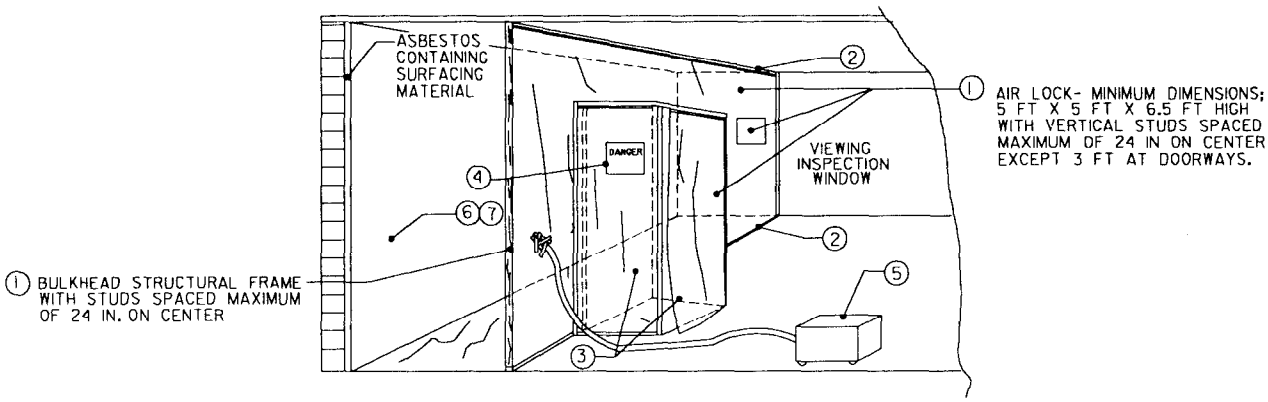
3. Prepare area as follows: turn off electrical power and remove light fixtures. Protect ceiling as required. HEPA vacuum floors and walls.

4. Protect wall surface with 6-mil polyethylene from floor to ceiling. Install viewing inspection windows, where feasible.

5. Install HEPA filter unit and duct work; see sheet 8.

6. Prepare door into decontamination unit or load-out unit; see sheet 22 for decontamination unit and sheet 20 for load-out unit. Doors that swing into the work area must be removed from hinges.

Final clearance requirements. After abatement has been completed, see sheet 18 for final clearance requirements.



Single bulkhead containment area

1. Establish work area so that unauthorized entry is prevented; see sheet 11. Construct a structural frame for a bulkhead wall and an air lock. See sheet 1 for air lock requirements other than those identified in note 1 of this drawing. Bulkhead is to be parallel to the item requiring abatement. Attach structural frame to walls, floor, or ceiling as necessary for stability. Cover the frame with one layer and the floor with two layers of 6-mil polyethylene sheeting, sealing edges of polyethylene to walls, ceilings, and floor surfaces with duct tape. Install viewing inspection windows, where feasible.

2. Seal with duct tape all penetrations (typical) such as pipes, electrical conduit, or ducts.

3. Install triple 6-mil polyethylene flaps at both doorways. Place portable sprayer with clean water, disposable towels, and prelabeled disposal bag in air lock.

4. Install danger signs on outside of containment area; see sheet 11.

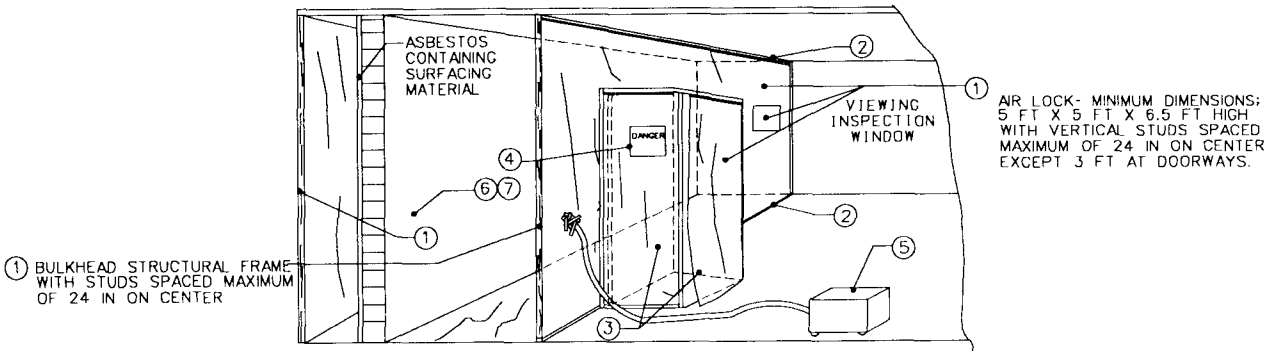
5. Install HEPA vacuum. Extend hose into mini-containment area for general vacuuming, negative air, and cleaning of disposable suit.

6. Accumulate all loose materials for disposal, and place in approved container; see Sheet 9. Apply labels; see sheet 14. Adequately wet clean all wall, floor, tool, and equipment surfaces.

7. Abatement worker must wear two disposable suits. Remove outer suit in work area and place in a plastic bag; see sheet 9. Enter air lock.

8. In air lock, wet wipe respirator and wash hands with clean water from portable sprayer. Remove respirator and place in clean plastic bag. Proceed to remote shower where inner suit may be removed.

Final clearance requirements. After abatement is completed, prepare area for final clearance. Contractor and Contracting Officer will certify visual inspection of work area on sheet 19, *Certification of Final Cleaning and Visual Inspection.* Contractor will apply lockdown encapsulant. Contract designee(s) will conduct final air-clearance monitoring as required by the contract. Remove containment area upon instructions from the Contracting Officer, and treat it as asbestos- contaminated material. Place in approved container; see sheet 9. Apply labels, see sheet 14. Dispose of as specified in the contract.



Double bulkhead containment area

1. Establish work area so that unauthorized entry is prevented; see sheet 11. Construct a structural frame for two bulkhead walls and an air lock. See sheet 1 for air lock requirements other than those identified in note 1 of this drawing. Bulkheads are to be parallel to the wall being removed. Attach structural frame to walls, floor, or ceiling as necessary for stability. Locate change room on the side opposite the asbestos-containing surface material. Cover the frame with one layer and the floor with two layers of 6-mil polyethylene sheeting and seal edges to walls, ceiling, and floor surfaces with duct tape. If a bulkhead is located outside the building, end walls and a roof will also be required. Install viewing inspection windows, where feasible.

2. Seal with duct tape all penetrations (typical) such as pipes, electrical conduit, or ducts.

3. Install triple 6-mil polyethylene flaps at doorways. Place portable sprayer with clean water, disposable towels, and prelabeled disposal bag in air lock.

4. Install danger signs on outside of containment area; see sheet 11.

5. Install HEPA vacuum; extend hose into mini-containment area for general vacuuming, negative air, and cleaning of disposable suit.

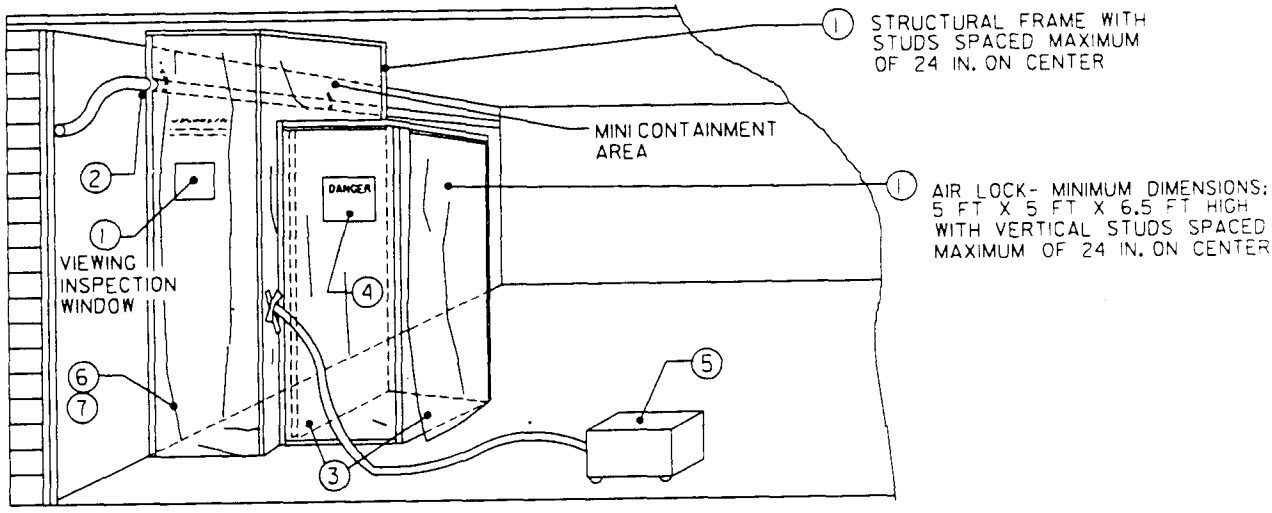
6. Accumulate all loose materials for disposal. Place in approved container; see sheet 9. Apply labels; see sheet 14. Adequately wet clean all wall, floor, tool, and equipment surfaces.

7. Abatement worker must wear two disposable suits. Remove outer suit in work area and place in a plastic bag; see sheet 9. Enter air lock.

8. In air lock, wet wipe respirator and wash hands with clean water from portable sprayer. Remove respirator and place in a clean plastic bag. Proceed to shower where inner suit may be removed.

9. After abatement is completed, prepare area for final clearance.

Final clearance requirements. After abatement is completed, prepare area for final clearance. Contractor and Contracting Officer will certify visual inspection of work area on sheet 19, *Certification of Final Cleaning and Visual Inspection*. Contractor will apply lockdown encapsulant. Contract designee(s) will conduct final air-clearance monitoring as required by the contract. Remove containment area upon instructions from the Contracting Officer, and treat it as asbestos- contaminated material. Place in approved container; see sheet 9. Apply labels; see sheet 14. Dispose of as specified in the contract.



Mini-containment area

1. Establish work area so that unauthorized entry is prevented; see sheet 11. Construct a two-compartment wood frame around work area; install one layer 6-mil polyethylene sheeting to structural members and two layers 6-mil polyethylene sheeting to the floor. Seal all edges to wall, ceiling, and floor surfaces with duct tape. Install viewing inspection windows, where feasible.

2. Seal with duct tape all penetrations (typical) such as pipes, electrical conduit, or ducts.

3. Install triple 6-mil polyethylene flaps at both doorways. Place portable sprayer with clean water, disposable towels, and prelabeled disposal bag in air lock.

4. Install danger signs on outside of containment area. See sheet 11.

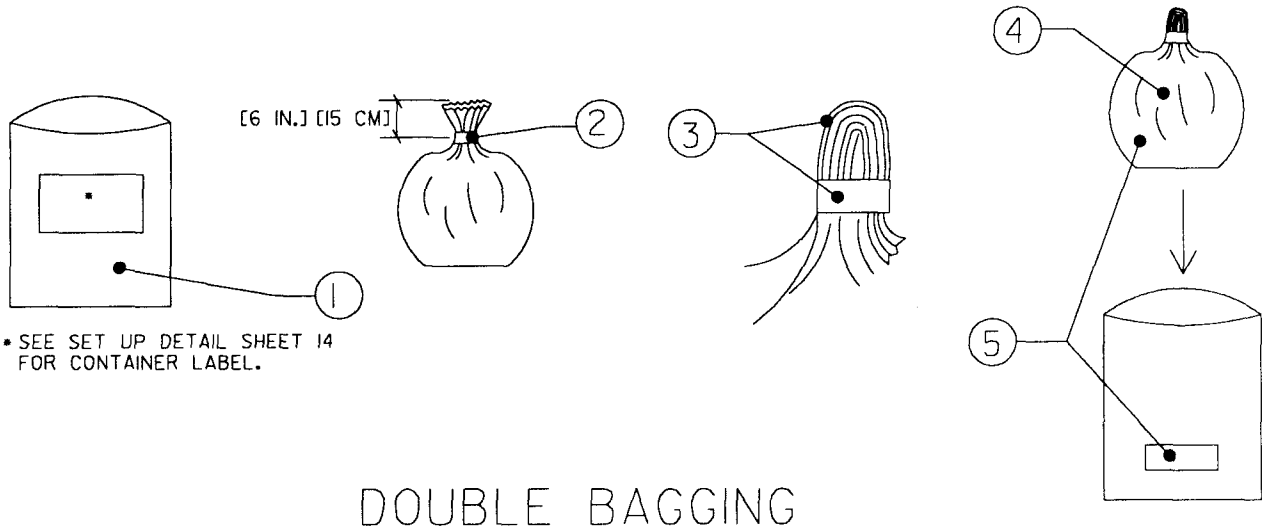
5. Install HEPA vacuum; extend hose into mini-containment area for general vacuuming, negative air, and cleaning of disposable suit.

6. Accumulate all loose materials for disposal. Place in approved container; see sheet 9. Apply labels; see sheet 14. Adequately wet clean all wall, floor, tool, and equipment surfaces.

7. Abatement worker must wear two disposable suits. Remove outer suit in work area and place in a plastic bag; see sheet 9. Enter air lock.

8. In air lock, wet wipe respirator and wash hands with clean water. Remove respirator and place in a clean plastic bag. Proceed to remote shower unit where inner suit may be removed.

Final clearance requirements. After abatement is completed, prepare area for final clearance. Contractor and Contracting Officer will certify visual inspection of work area on sheet 19, *Certification of Final Cleaning and Visual Inspection*. Contractor will apply lockdown encapsulant. Contract designee(s) will conduct final air-clearance monitoring as required by the contract. Remove containment area upon instructions from the Contracting Officer, and treat it as asbestos- contaminated material. Place in approved container; see sheet 9. Apply labels, see sheet 14. Dispose of as specified in the contract.



DOUBLE BAGGING

Containers—double bagging

1. Place the still-wet asbestos-containing and asbestos-contaminated material into a prelabled 6-mil polyethylene bag. Do not overfill. Do not use bag for asbestos-containing or asbestos-contaminated material that could puncture the bag. (See sheet 9C for packaging items that could puncture bags.)

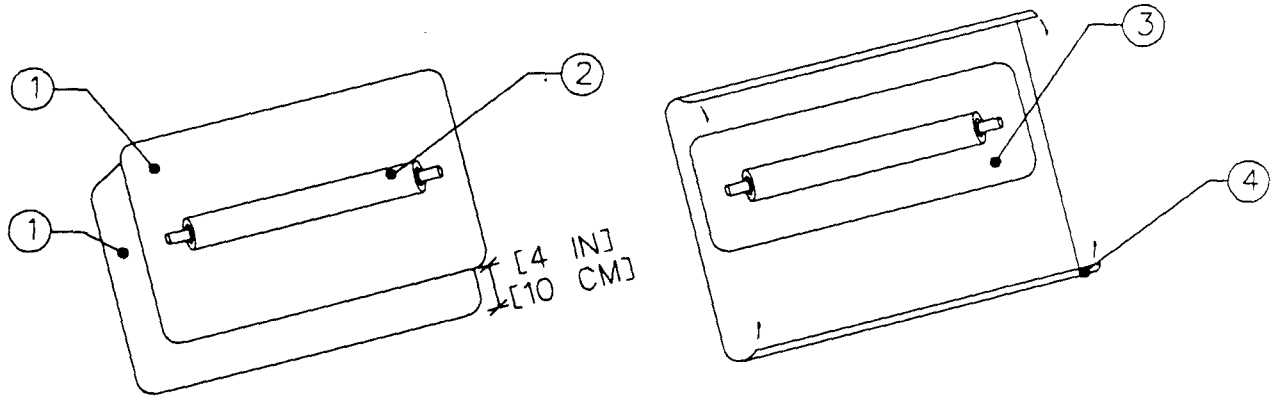
2. Evacuate with HEPA vacuum, and seal collapsed bag by twisting top [6 in] [15 cm] closed and wrapping with a minimum of two layers of duct tape.

3. Twist top and fold over. Apply second wrap of duct tape.

4. Adequately wet clean outside of disposal bag by wet wiping, and take bag to the equipment and staging area.

5. Place bag inside a second prelabled 6-mil polyethylene bag.

6. Seal outer bag by repeating steps 2 and 3 above. Take bag to load-out unit; see sheet 20.



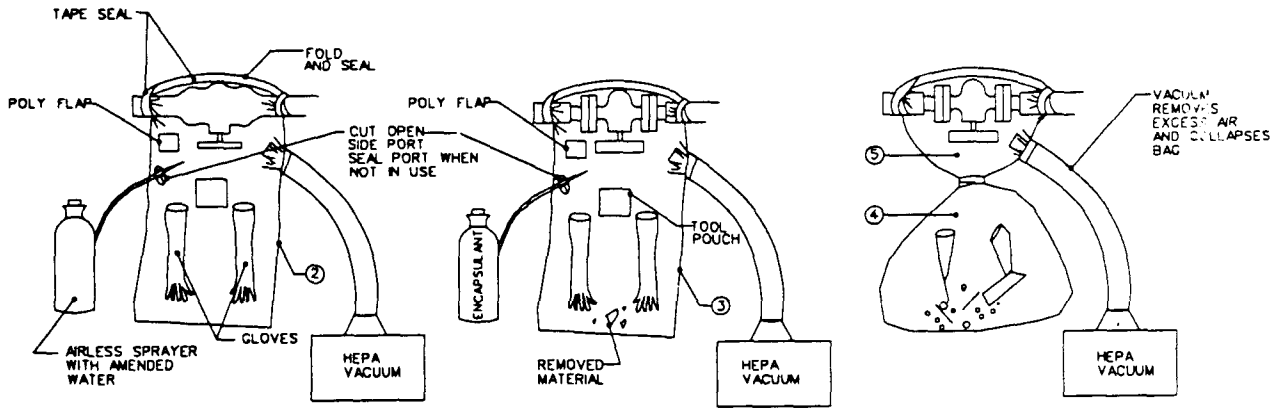
Containers—leak-tight wrapping

1. Place two layers of 6-mil polyethylene sheet on surface so that the bottom layer is offset [4 in] [10 cm] from the top layer.

2. Place the still-wet asbestos-containing or asbestos-contaminated material that is too large (boiler, vessel, pipe segment, etc.) to be placed in disposal bags on the top layer of polyethylene.

3. Wrap the top layer tightly around the contaminated material. Seal all edges of the top layer of sheeting with duct tape. Apply labels; see sheet 14.

4. Repeat procedure with bottom layer, including labeling. Take to load-out unit; see sheet 20.



Glove bag

1. Construct modified containment area in accordance with sheet 21. NOTE: Inspect for structural integrity the insulation material adjacent to section being removed, since glove bag removal procedure is not appropriate if it will cause asbestos fiber release from adjacent asbestos-containing material.

2. Put tools and rags inside glove bag. Insulation adjacent to the asbestos-containing material being removed must be adequately wet cleaned and sprayed with an encapsulant before placing glove bag over the area to be removed. Install glove bag according to manufacturer's instructions. (NOTE: Negative-air glove bags may be used if first approved by Contracting Officer. Manufacturer procedures for negative-air glove bags will vary from procedures identified on this sheet.) Install HEPA filter vacuum cleaner with hose ducted into bag. Seal with duct tape. Smoke test for leaks. Soak insulation with amended water.

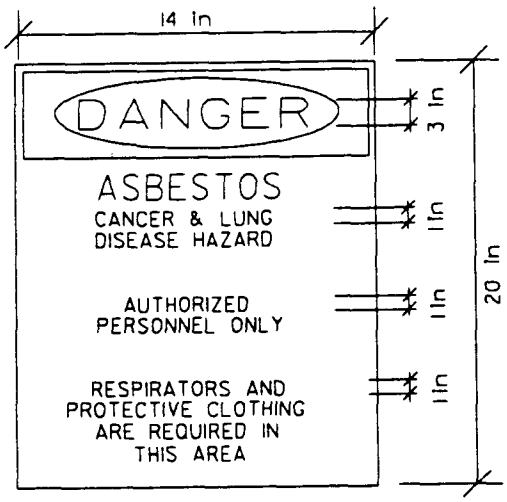
3. Remove insulation and clean exposed metal surfaces. Encapsulate exposed ends of insulation and metal surfaces. Adequately wet clean glove bag surfaces to below tool pouch.

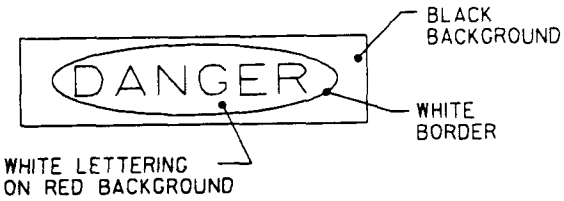
4. Grasp tools in pouch and withdraw by pulling glove inside out. Twist glove above encased tools to create a constriction, and tape constricted area with duct tape. Cut through middle of taped area so that tools and glove bag will both remain sealed. Place encased tools into tool pouch of next glove bag or decontaminate by water immersion.

5. Evacuate glove bag, using HEPA vacuum. Twist bag to create a constriction below tool pouch. Wrap constricted area with duct tape. Cut bag [4 in] [10 cm] above constriction. Double bag cut off portion of bag; see sheet 9. Apply labels; see sheet 14. Cap and seal end of HEPA vacuum hose in order to prevent incidental fiber release.

6. Remove remaining portion of glove bag. Place in approved container; see sheet 9. Apply labels; see sheet 14. Dispose as asbestos-contaminated waste.

Final clearance requirements. For final clearance, Contractor and Contracting Officer will certify visual inspection of work area on sheet 19, *Certification of Final Cleaning and Visual Inspection*. Contract designee(s) will conduct final air-clearance monitoring as required by the contract.





AREA WARNING SIGNS AND WARNING TAPE

DETAIL 011

Area warning signs and warning tape

1. Provide and install [4 mil] [0.10 mm] polyethylene warning tape at locations shown on the abatement area plan.

2. Warning tape is to be attached to wood or metal posts at [10 ft] [300 cm] on center. Tape must be [3 ft] [100 cm] from ground.

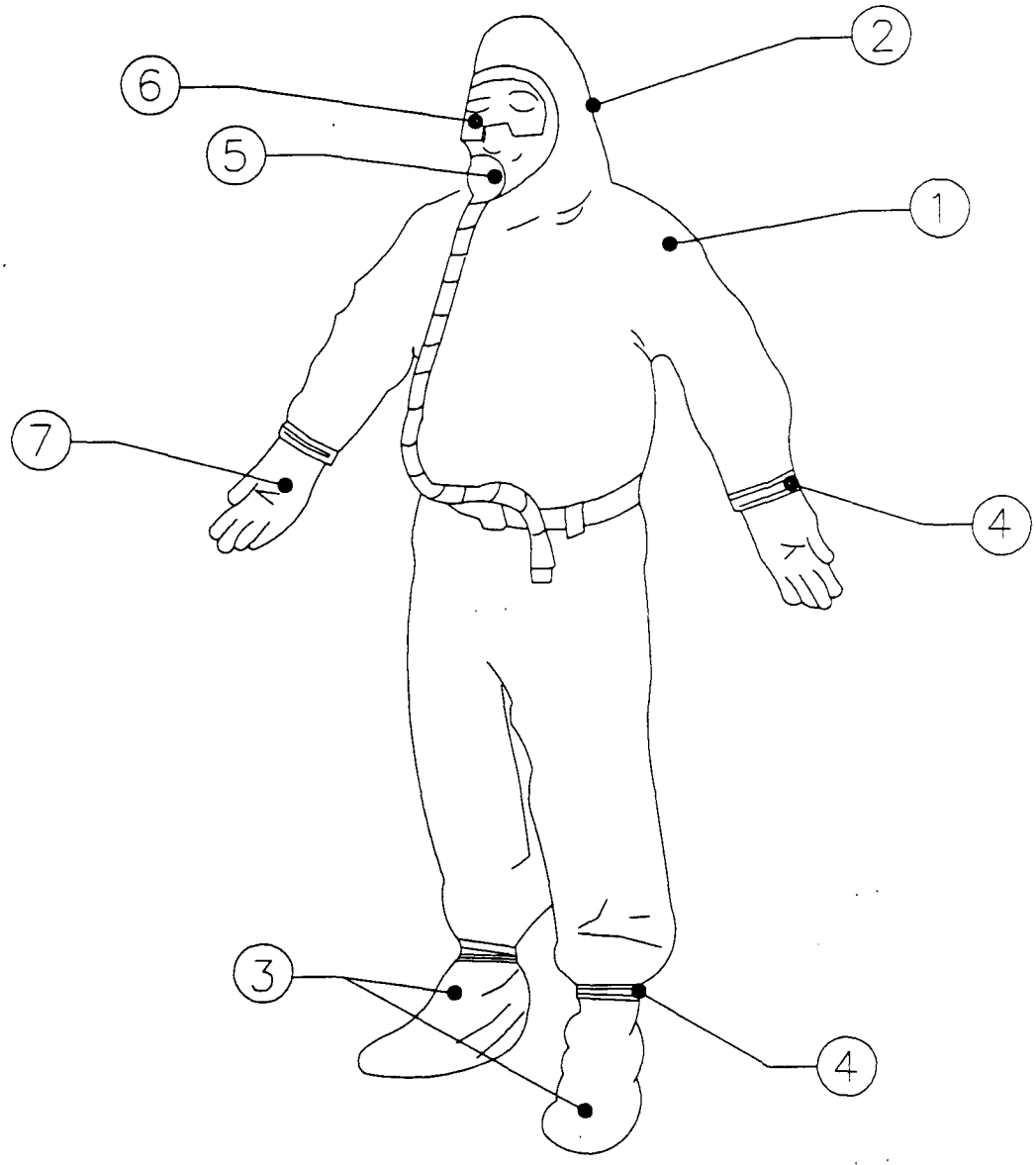
3. Attach both warning signs at each entrance of the work area and at [33 yd] [30 m] on center where security fencing is installed.

4. Warning signs must be in English and other languages required by the contract.

5. Install at eye level.

FIBER CONCENTRATION	MINIMUM REQUIRED RESPIRATOR	
NOT IN EXCESS OF 1 FIBER/CC	HALF-MASK AIR PURIFYING RESPIRATOR WITH HEPA FILTERS	
NOT IN EXCESS OF 5 FIBERS/CC	FULL FACEPIECE AIR-PURIFYING RESPIRATOR WITH HEPA FILTERS	
NOT IN EXCESS OF 10 FIBERS/CC	LOOSE FITTING HELMET OR HOOD, POWERED AIR-PURIFYING RESPIRATOR WITH HEPA FILTERS	
NOT IN EXCESS OF 10 FIBERS/CC	POWERED AIR-PURIFYING RESPIRATOR WITH FULL FACEPIECE AND HEPA FILTER	
NOT IN EXCESS OF 10 FIBERS/CC	LOOSE FITTING HELMET OR HOOD, SUPPLIED AIR RESPIRATOR OPERATED IN CONTINUOUS FLOW MODE WITH BACK-UP HEPA FILTER	
NOT IN EXCESS OF 10 FIBERS/CC	SUPPLIED AIR RESPIRATOR WITH FULL FACEPIECE OPERATED IN CONTINUOUS FLOW MODE WITH BACK-UP HEPA FILTER	
NOT IN EXCESS OF 100 FIBERS/CC	FULL FACEPIECE SUPPLIED AIR RESPIRATOR OPERATED IN PRESSURE-DEMAND MODE WITH BACK-UP HEPA FILTER	
GREATER THAN 100 FIBERS/CC OR UNKNOWN CONCENTRATION	FULL FACEPIECE SUPPLIED-AIR RESPIRATOR OPERATED IN PRESSURE-DEMAND MODE WITH AUXILIARY POSITIVE-PRESSURE SELF-CONTAINED BREATHING APPARATUS	

Respiratory protection table



Protective clothing

1. Disposable or reusable full body suit with elastic around hood and shoe cover openings is required or as otherwise specified in the contract.

2. Hood shall be worn over respirator's head and neck straps.

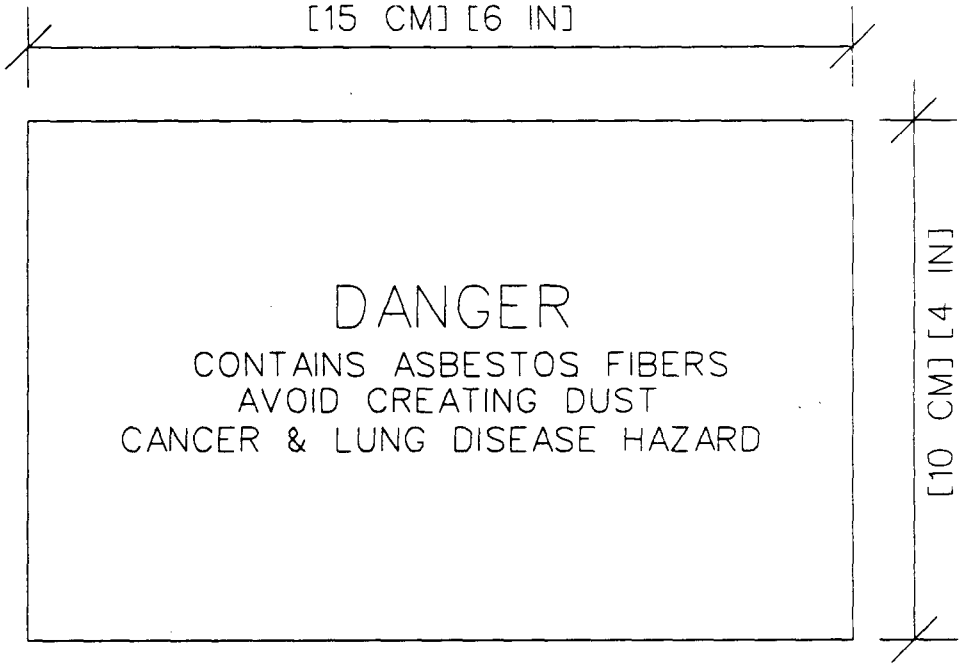
3. Shoe covers shall be worn over work shoes.

4. Cuffs shall be taped with duct tape at wrists and ankles in order to prevent infiltration.

5. Cartridge-type air-purifying HEPA filter respirator is minimal requirement. Type shall be selected in accordance with sheet 12.

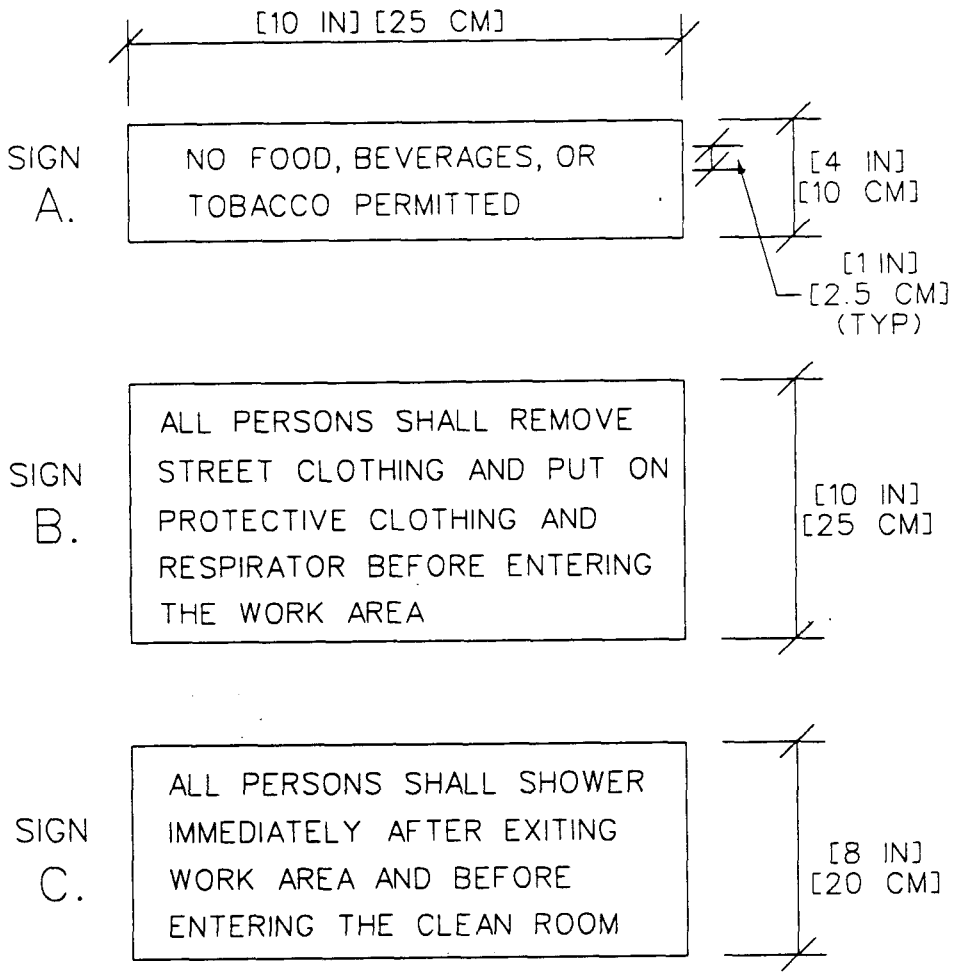
6. If eye protection is not integral with respirator, protection goggles are required.

7. Rubber work gloves are recommended to be worn alone or under outer work gloves provided for hand and operation safety.



Disposal container label

Attach warning labels to each disposal container removed from abatement area.



Decontamination unit signage

1. Provide signs in English and other languages required by the contract.

2. Install at eye level.

Certification of Final Cleaning And Visual Inspection

Individual abatement task as identified in paragraph, Description of Work _____

In accordance with the cleaning and decontamination procedures specified in the Contractor's asbestos hazard abatement plan and this contract, the Contractor hereby certifies that he/she has thoroughly visually inspected the decontaminated regulated work area (all surfaces, including pipes, beams, ledges, walls, ceiling, floor, decontamination unit, etc.) in accordance with ASTM E1368, *Standard Practice for Visual Inspection of Asbestos Abatement Projects*, and has found no dust, debris, or asbestos-containing material residue.

BY: (Contractor's signature) _____ Date _____

Print name and title _____

(Contractor's Onsite Supervisor signature) _____ Date _____

Print name and title _____

(Contractor's Industrial Hygienist signature) _____ Date _____

Print name and title _____

Contracting Officer Acceptance or Rejection

The Contracting Officer hereby determines that the Contractor has performed final cleaning and visual inspection of the decontaminated regulated work area (all surfaces including pipes, beams, ledges, walls, ceiling, floor, decontamination unit, etc.) and by quality assurance inspection, finds the Contractor's final cleaning to be:

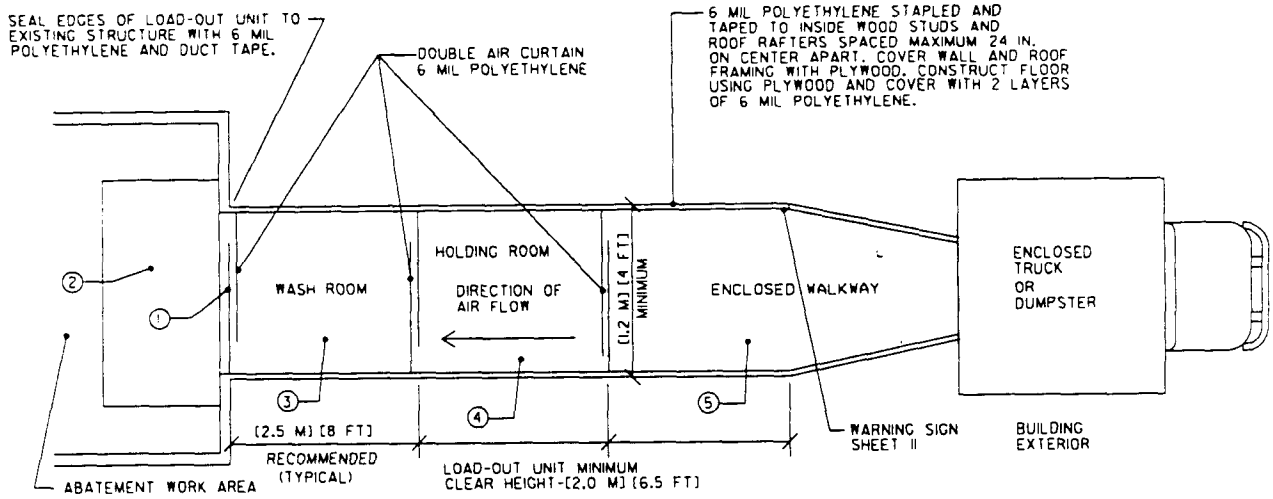
☐ Acceptable

☐ Unacceptable, Contractor instructed to reclean the regulated work area.

BY: Contracting Officer's Representative

Signature _____ Date _____

Print name and title _____



Load-out unit floor plan

1. Abatement worker is to enter and exit abatement work area only through decontamination unit.

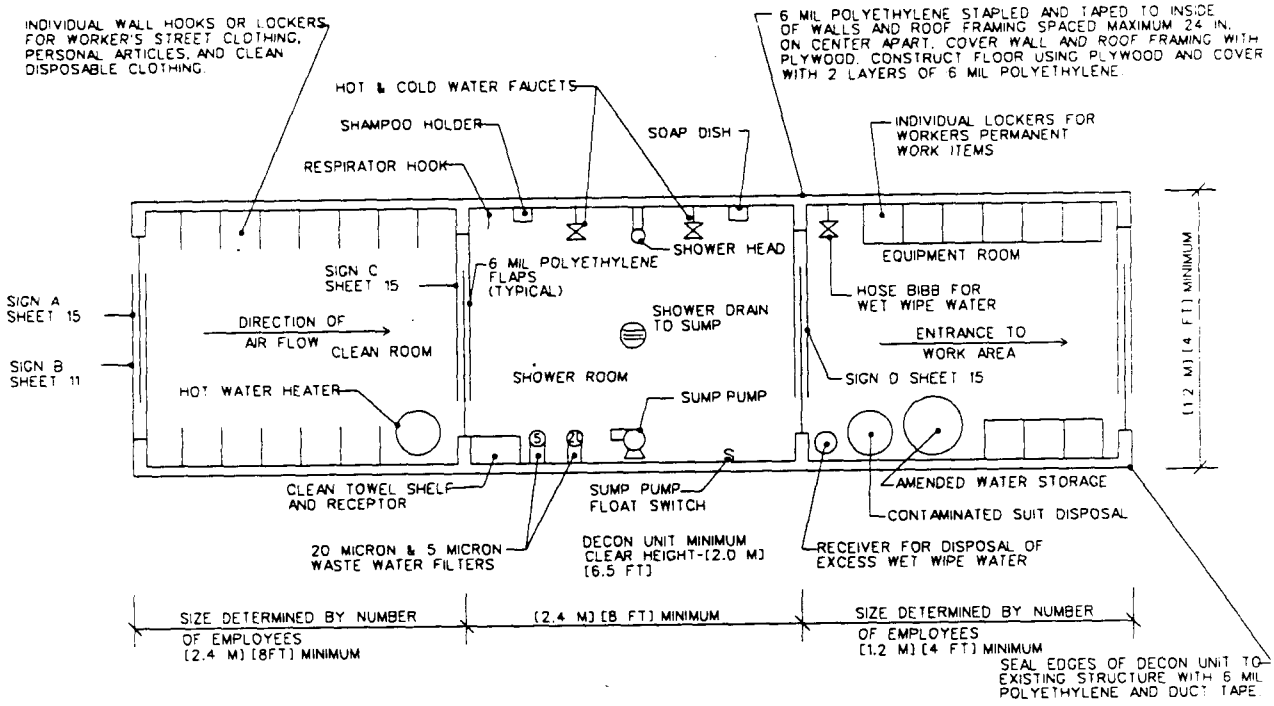
2. Place additional 6-mil polyethylene sheeting on top of abatement area floor. Double bag asbestos-contaminated material in this area before removing.

3. Wet wipe bags, equipment, and containers, and take to holding room.

4. Stage clean bags, equipment, and containers in holding room until disposal worker removes them.

5. Disposal workers, wearing full protective clothing and appropriate respirator protection, carry decontaminated bags and containers through enclosed walkway and into enclosed truck or Dumpster.

Final clearance requirements. Before breaking down load-out unit, adequately wet clean and HEPA vacuum all surfaces and prepare area for final clearance. Contractor and Contracting Officer will certify visual inspection of work area on sheet 19, *Certification of Final Cleaning and Visual Inspection*. Contractor will apply lockdown encapsulant. Contract designee(s) will conduct final air-clearance monitoring as required by the contract. Breakdown load-out area upon instructions from Contracting Officer. Treat as asbestos- contaminated material. Place in approved container; see sheet 9. Apply labels; see sheet 14. Dispose of as required by the contract.



Decontamination unit floor plan

1. Establish work area so that unauthorized entry is prevented; see sheets 11 and 15. Before entering the work area, all personnel shall remove their street clothing in the clean room and put on protective clothing and respirator.

2. Whenever exiting the work area, all personnel shall:

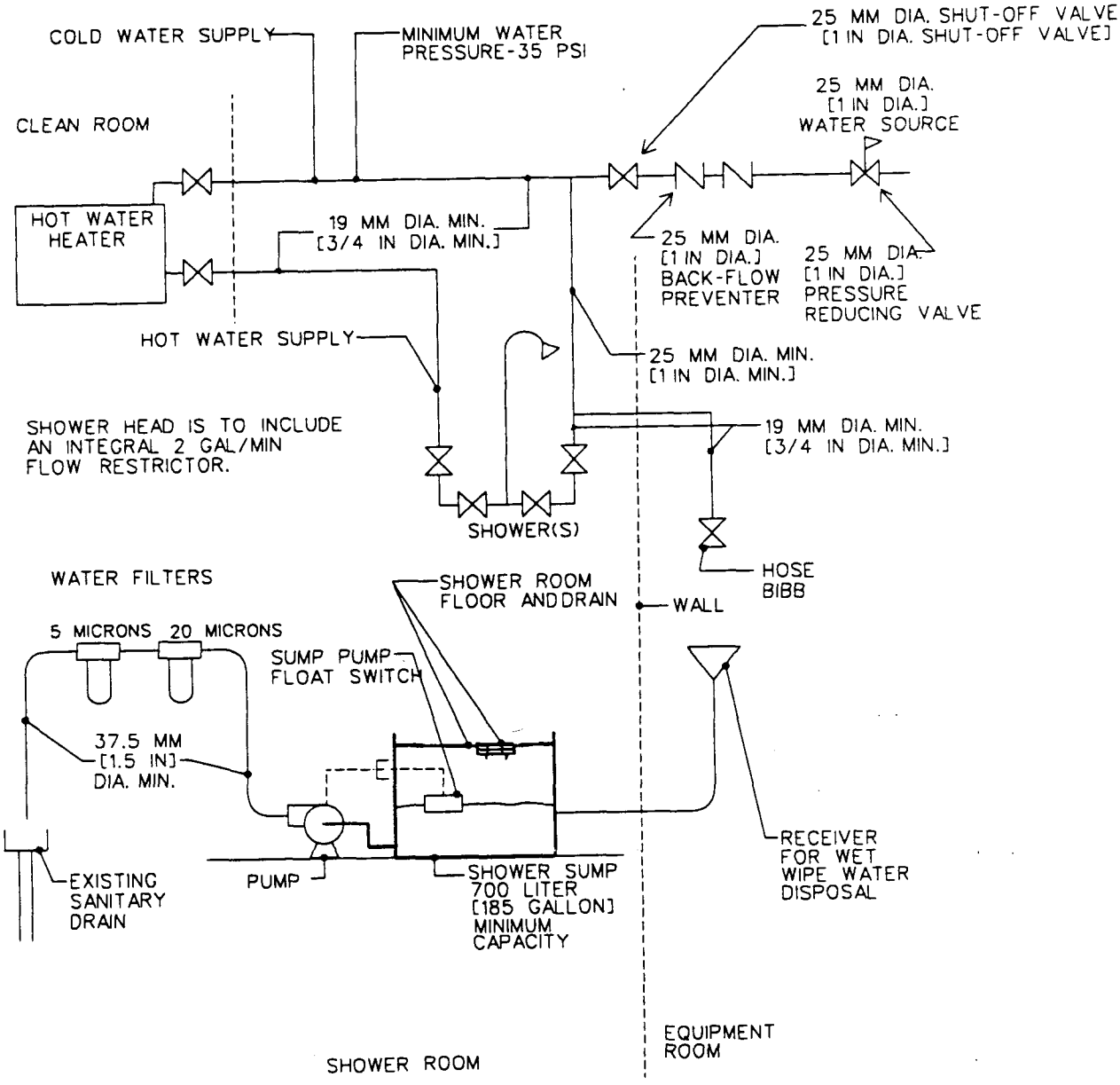
- Vacuum clothing and shoes outside equipment room.
- Remove all clothing and equipment (except respirator) in equipment room.
- Store work shoes and equipment in locker.
- With respirator still on, shower thoroughly, including hair. Then remove respirator and finish shower.
- Proceed to clean room and put on street clothes.

3. See sheet 23 for minimum plumbing requirements, including wastewater filtration. Ensure that plumbing and specified filter size meet local requirements.

4. Twice daily, or more often if necessary, and before breaking down decontamination unit after abatement, adequately wet clean and HEPA vacuum all wall, floor, equipment, and other surfaces. Waste collected in shower room and equipment room shall be treated as asbestos-contaminated material. Place in approved container; see sheet 9. Apply labels; see sheet 14.

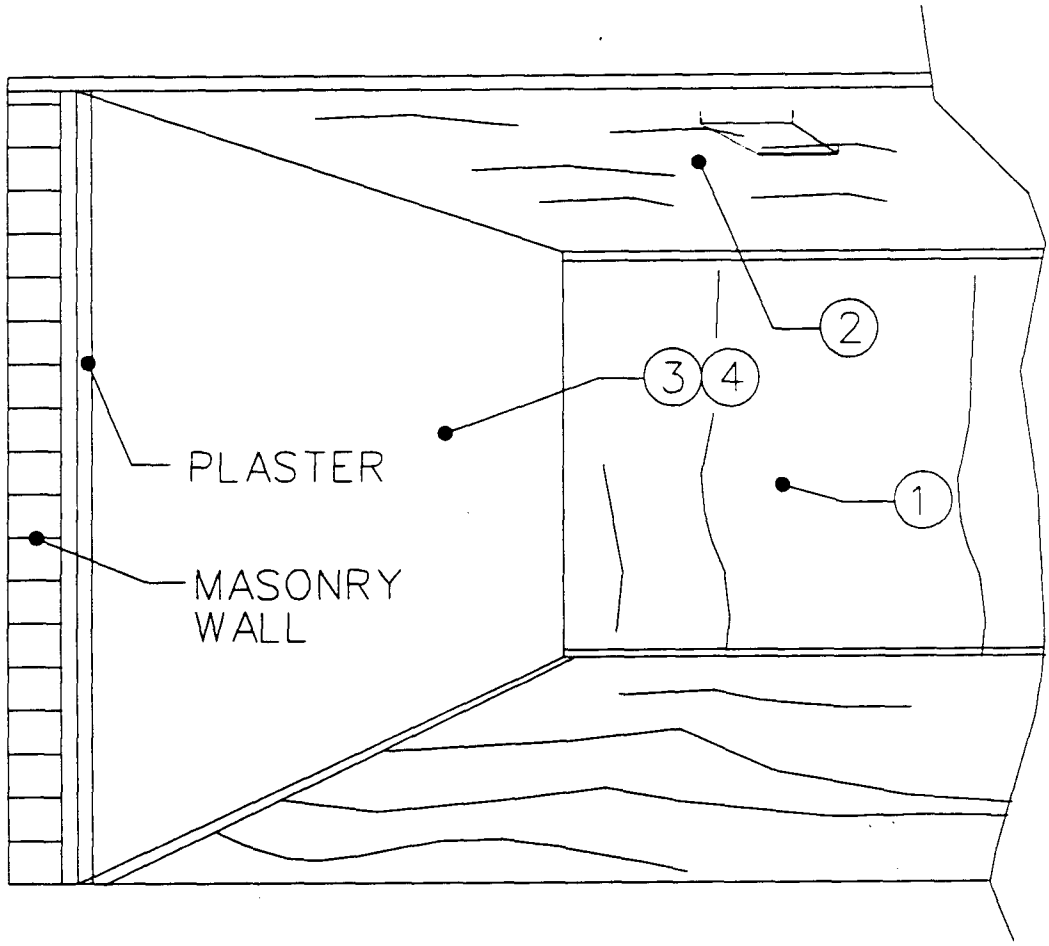
5. Prepare for final clearance.

Final clearance requirements. Contractor and Contracting Officer will certify visual inspection of work area on sheet 19, *Certification of Final Cleaning and Visual Inspection.* Contract designee(s) will conduct final air-clearance monitoring as required by the contract. If the unit is not a prefabricated decontamination unit, apply lockdown encapsulant before final air-clearance monitoring. After approval of final air clearance, break down and treat polyethylene as asbestos-contaminated material. Place in approved container; see sheet 9. Apply labels; see sheet 14. Dispose of as required by the contract.



SIZE CAPACITY OF SUMP PUMP FOR TWICE THE EXPECTED WASTE WATER FLOW.

Decontamination unit piping details



Removal of troweled wall plaster on masonry

1. Prepare containment area as specified on applicable sheet 2, 3, 4, or 5.

2. Prepare ceiling as follows:

- Cover light fixture with 6-mil polyethylene.
- Protect entire suspended ceiling system with 6-mil polyethylene.

3. Adequately wet mist surface of plaster with amended water, initially and during removal procedure.

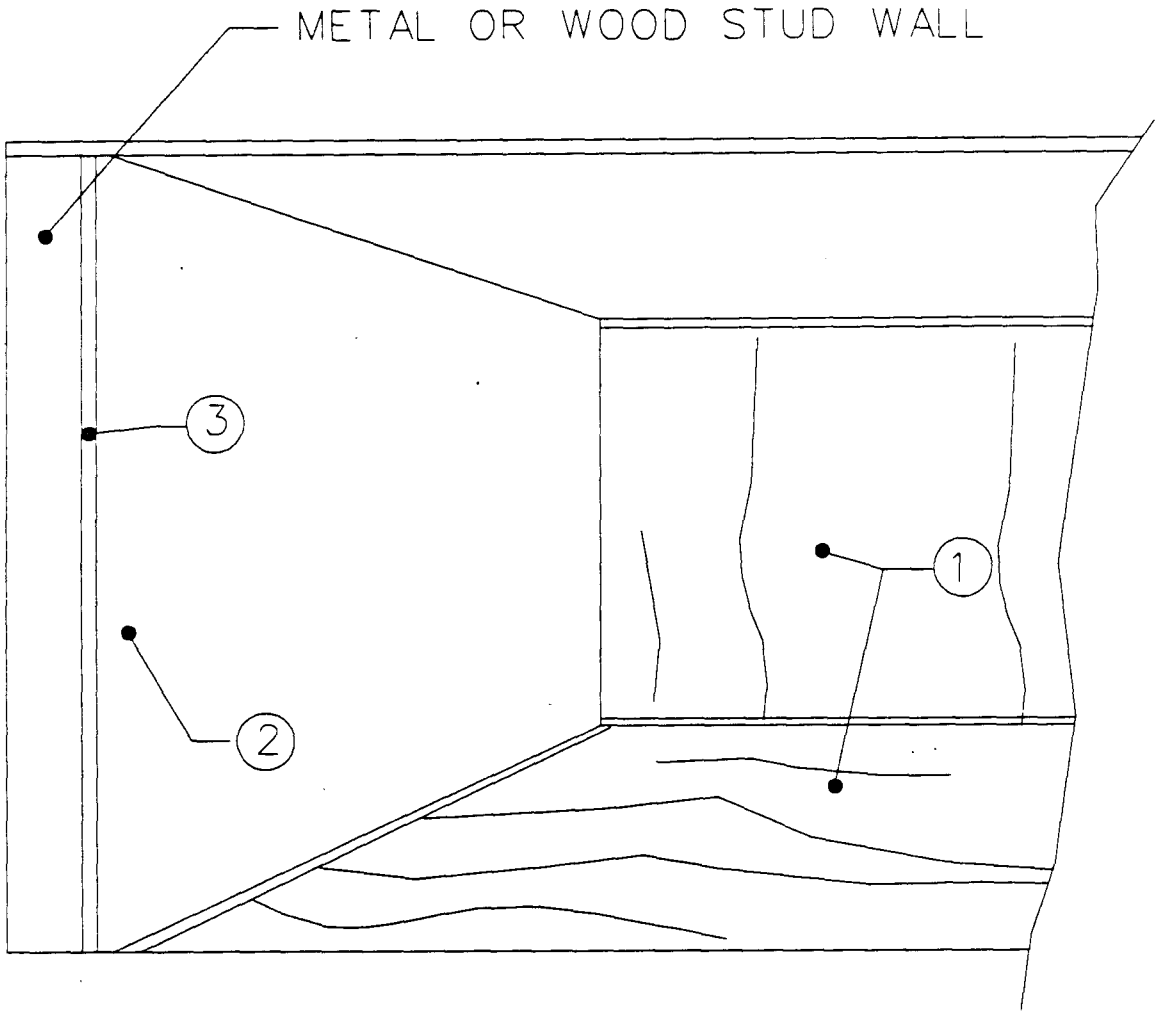
4. Remove plaster on masonry. Brush, HEPA vacuum, and wet wipe surface in order to remove remaining laitance and residue. Place removed asbestos-containing material in approved container; see sheet 9. Apply labels; see sheet 14.

5. Apply tinted penetrating encapsulant by airless spray in accordance with manufacturer's recommendations.

6. Inspect and reapply encapsulant as necessary.

7. Prepare area for final air clearance.

8. Carry out final clearance requirements specified on applicable sheet 5, 16, 17, or 18.



Removal of troweled wall plaster on stud wall

1. Prepare containment area as specified on applicable sheet 2, 3, 4, 5, or 6.

2. Adequately wet mist damaged plaster with amended water, initially and during removal procedure.

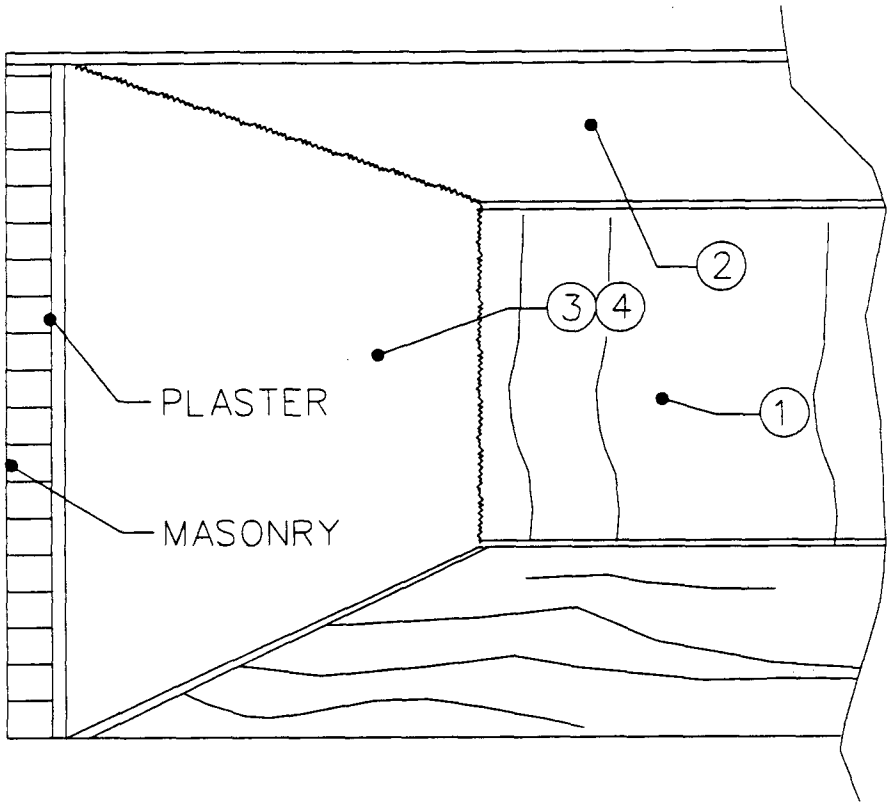
3. Remove plaster and lath from studs in manageable pieces. Stack the pieces onto two layers of 6-mil polyethylene. Wrap each polyethylene layer around the stack, sealing all joints and edges with duct tape; see sheet 9B for leak-tight wrapping. Apply labels; see sheet 14. Place smaller material in approved container; see sheet 9. Apply labels; see sheet 14.

4. Clean, HEPA vacuum, and adequately wet clean.

5. Apply tinted penetrating encapsulant. Inspect and reapply encapsulant as necessary.

6. Prepare area for final air clearance.

7. Carry out final clearance requirements as specified in the applicable sheet 5, 6, 16, 17, or 18.



Removal of acoustical wall plaster on masonry

1. Prepare containment area as specified on applicable sheet 2, 3, 4, or 5.

2. Prepare ceiling as directed below:

- Cover light fixture with 6-mil polyethylene.
- Protect entire suspended ceiling system with 6-mil polyethylene.

3. Adequately wet mist surface of plaster with amended water, initially and during removal procedures.

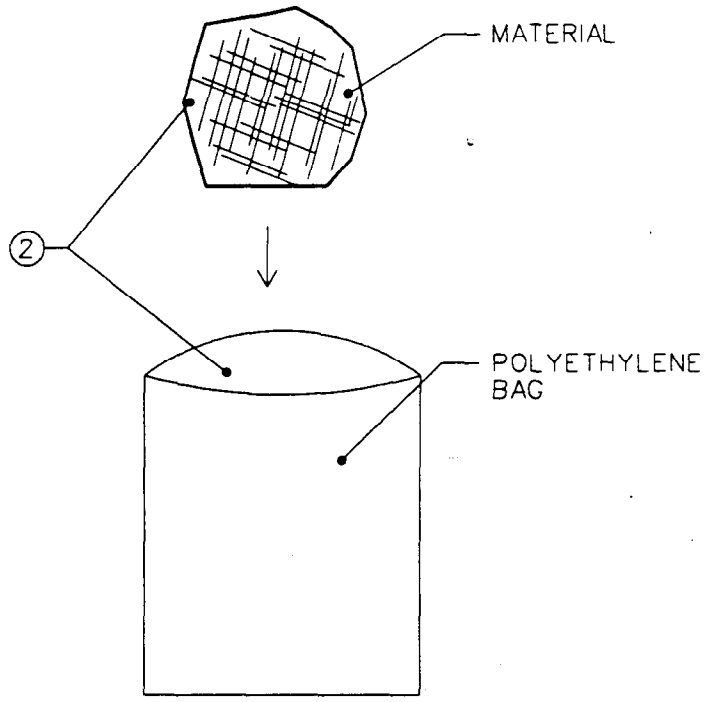
4. Remove acoustical plaster from masonry wall by scraping or other technique. Brush, HEPA vacuum, and wet wipe surface in order to remove remaining dust and residue. Place in approved container; see sheet 9. Apply labels; see sheet 14.

5. Inspect and reclean as necessary. Apply tinted penetrating encapsulant.

6. Inspect and reapply encapsulant as necessary.

7. Prepare area for final air clearance.

8. Carry out final clearance requirements as specified on applicable sheet 5, 16, 17, or 18.



Removal of miscellaneous asbestos-containing materials

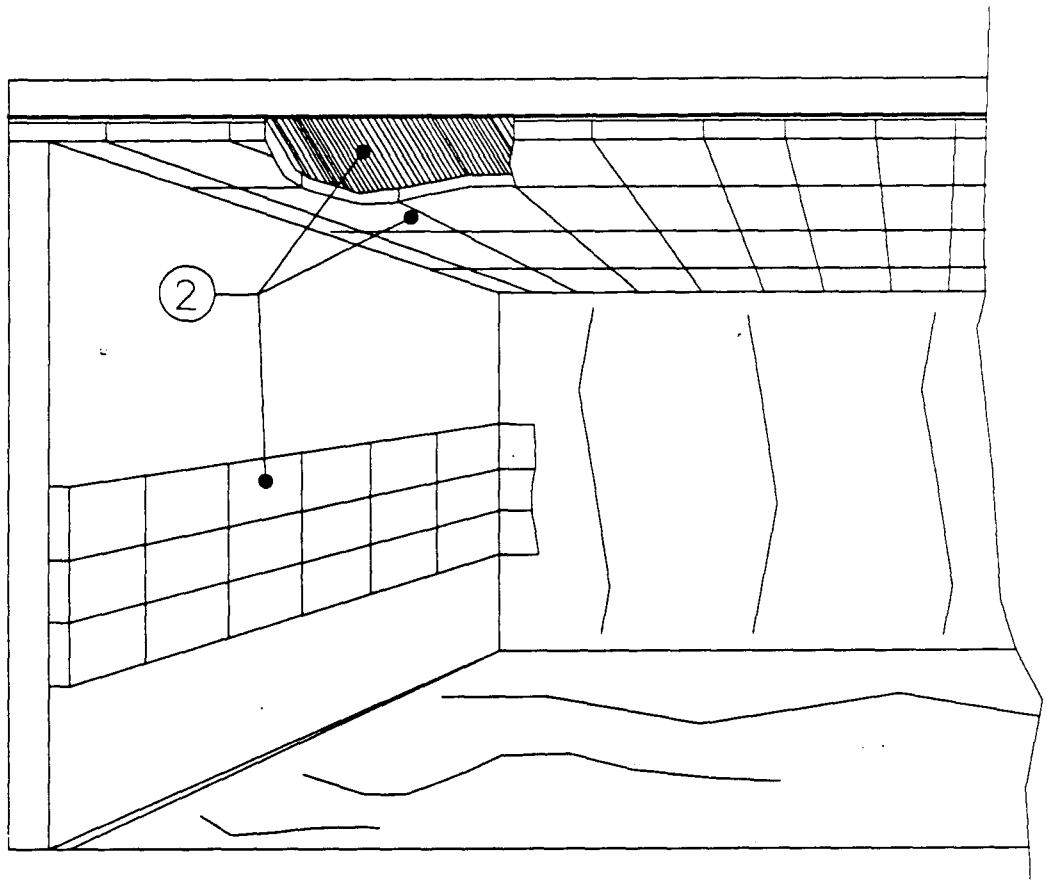
1. Establish work area so that unauthorized entry is prevented; see sheet 11. Prepare containment area as specified on sheet 21.

2. Adequately wet mist materials with amended water. Remove and place in approved container; see sheet 9. Apply labels; see sheet 14.

3. HEPA vacuum and wet wipe area in the immediate vicinity of removed materials.

4. Prepare area for final clearance.

5. Carry out final clearance requirements as specified on sheet 21.



Removal of glued-on acoustical ceiling and wall tile

1. Prepare containment area as specified on applicable sheet 2, 3, or 4.

2. Adequately wet mist tile surfaces with amended water, initially and during removal procedures.

3. Remove glued-on tiles, and scrape off remaining glue.

4. Clean, HEPA vacuum, and adequately wet clean.

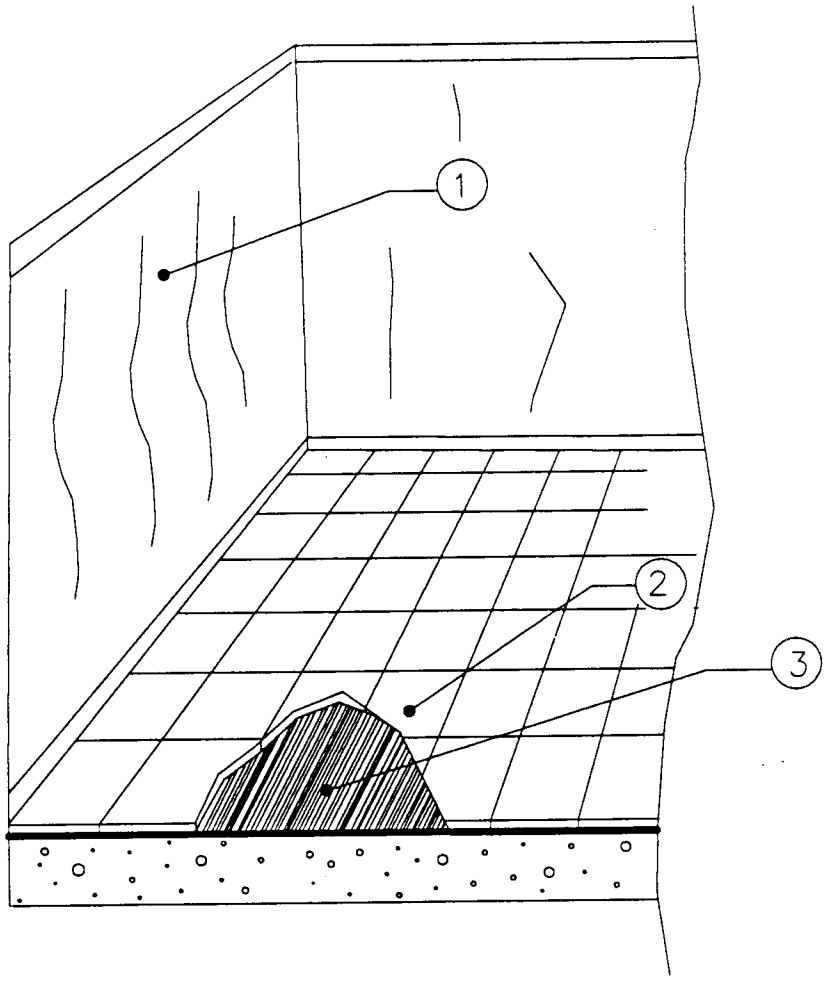
5. Separate and stack all materials, and wrap with two layers of 6-mil polyethylene. Wrap top layer of polyethylene around ACM. Seal the joints and ends of each layer with duct tape; see sheet 9B. Apply labels; see sheet 14. Wrap again with second layer of polyethylene in the same manner; see sheet 9B. Apply labels; see sheet 14. Place smaller material in approved container; see sheet 9B. Apply labels; see sheet 14.

6. Inspect and reclean area as necessary.

7. Apply tinted penetrating encapsulant. Inspect and reapply as necessary.

8. Prepare area for final clearance.

9. Carry out final clearance requirements specified on applicable sheet 16, 17, or 18.



Removal of vinyl asbestos tile adhered to concrete floor system by asbestos-containing adhesive

1. Prepare containment area as specified on sheet 21. NOTE: Where full containment area is required, follow instructions on sheet 4, except omit polyethylene on floor.

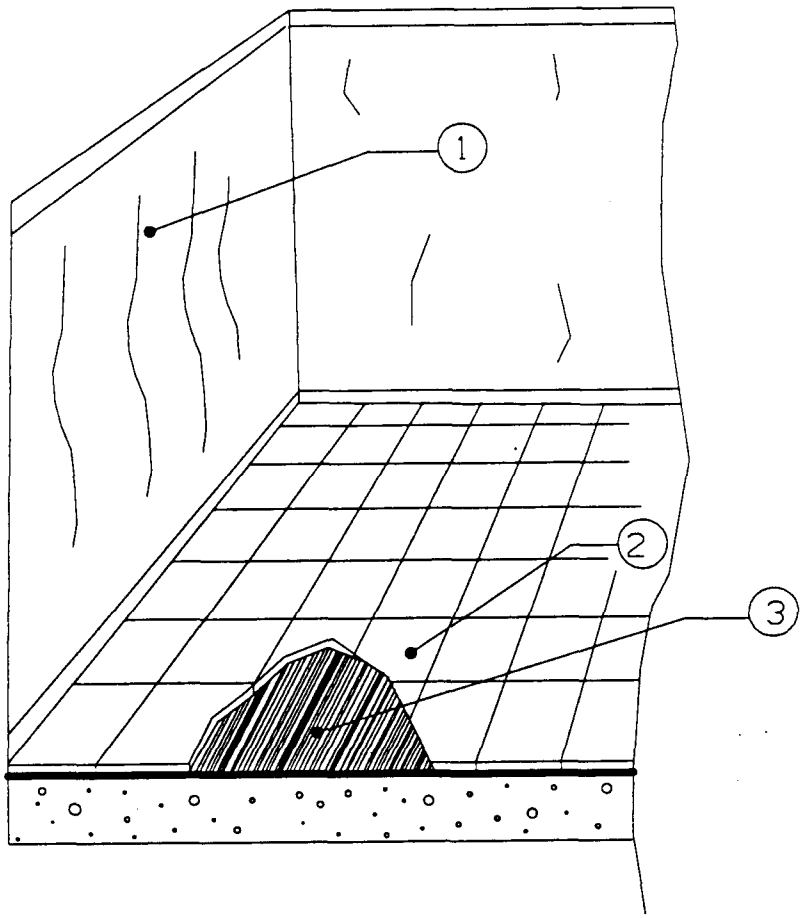
2. Lightly flood asbestos tile with amended water, and let soak for 48 hours. Remove asbestos tile and adhesive while they are wet in order to prevent asbestos fiber release. Place tile and adhesive into an approved container; see sheet 9. Apply labels; see sheet 14.

3. Clean, HEPA vacuum, and wet wipe all surfaces.

4. Inspect and reclean area as necessary.

5. Prepare area for final air clearance.

6. Carry out final clearance requirements as specified on applicable sheet 18 or 21.



Removal of vinyl asbestos tile adhered to concrete floor system by asbestos-free adhesive

1. Prepare containment area as specified on sheet 21. NOTE: Where full containment area is required, follow instructions on sheet 4, except omit polyethylene on floor.

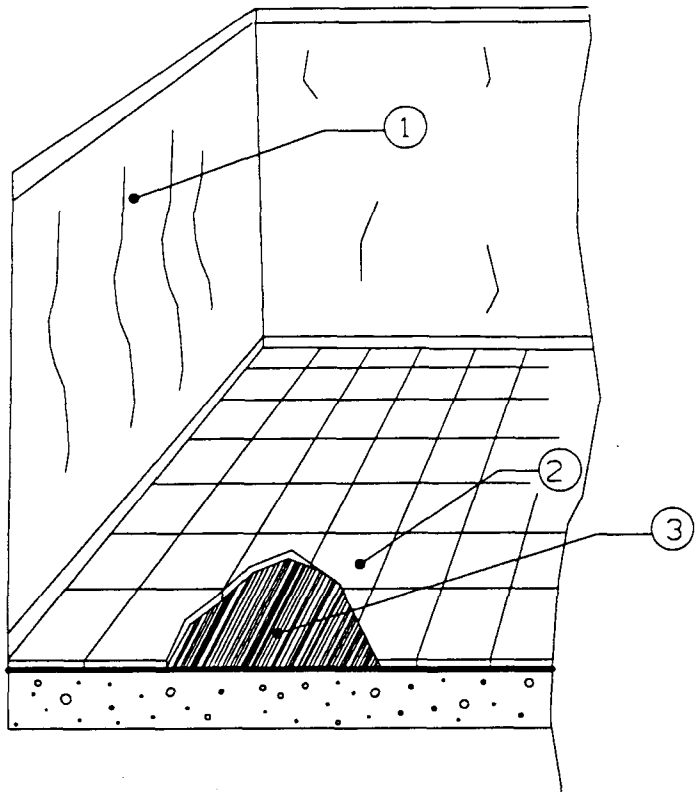
2. Lightly flood asbestos tile, and soak for 48 hours. Remove asbestos tile and adhesive while they are wet in order to prevent asbestos fiber release. Place tile and adhesive into an approved container; see sheet 9. Apply labels; see sheet 14.

3. Clean, HEPA vacuum, and adequately wet clean all surfaces.

4. Inspect and reclean area as necessary.

5. Prepare area for final air clearance.

6. Carry out final clearance requirements as specified on applicable sheet 18 or 21.



USE THIS DETAIL ONLY FOR
- SMALL SCALE PROJECTS
- GROUND FLOOR APPLICATIONS

Removal of vinyl asbestos tile and chemical dissolution of asbestos-containing adhesives on concrete floor system

1. Prepare containment area as specified on sheet 4.

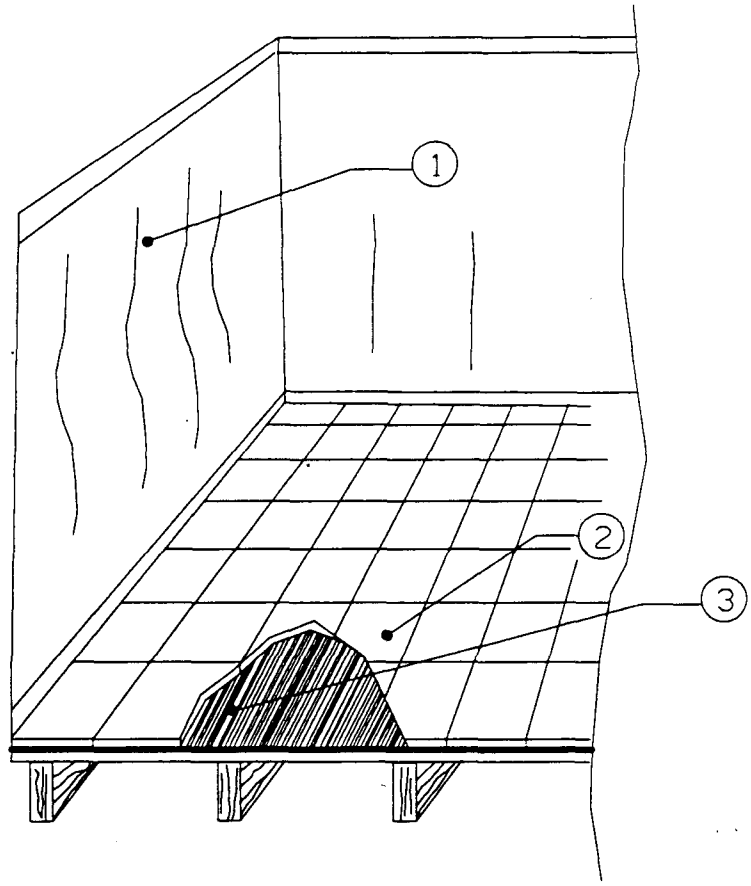
2. Lightly flood asbestos tile, and soak for 48 hours. Remove asbestos tile and adhesive while they are wet in order to prevent asbestos fiber release. Place tile and adhesive into an approved container; see sheet 9. Apply labels; see sheet 14.

3. Before removing adhesive, increase ventilation rate to 10 air changes per hour. Air must be exhausted outside building.

4. Apply liquid adhesive remover. As soon as the adhesive is soft enough to scrape, remove and put into approved container; see sheet 9. Apply labels; see sheet 14.

5. Prepare area for final air clearance.

6. Carry out final clearance requirements as specified on sheet 18.



Removal of vinyl asbestos tile adhered to wood floor system by asbestos-containing adhesive

1. Prepare containment area as specified on sheet 21, except omit polyethylene on floor. NOTE: Where full containment is required, follow instructions on sheet 4.

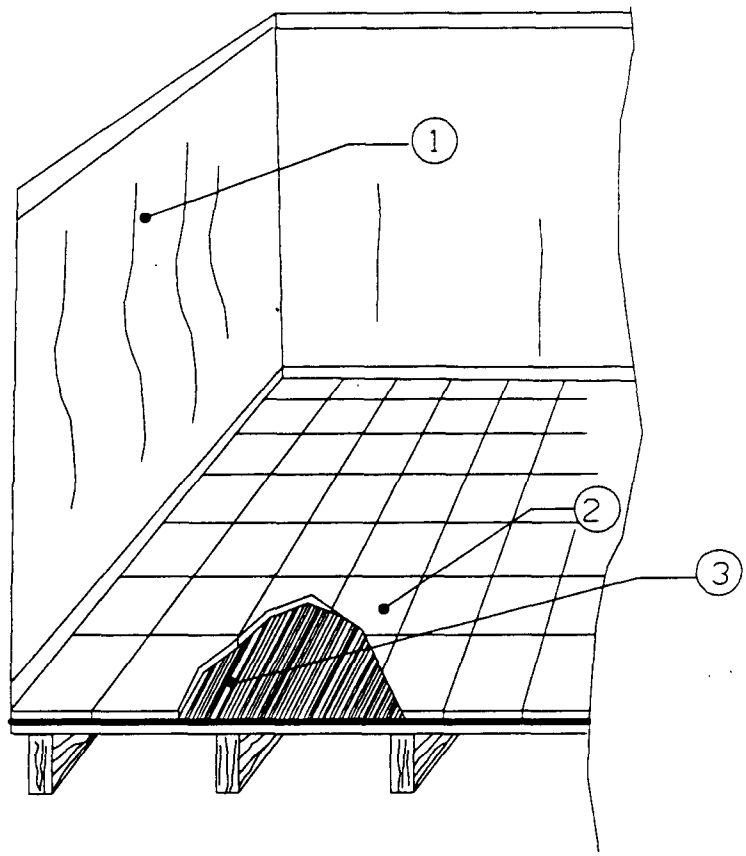
2. Where wood flooring is to remain, adequately wet and remove asbestos tile and adhesive in order to prevent asbestos fiber release. Place tile and adhesive into an approved container; see sheet 9. Apply labels; see sheet 14. Note: Where wood flooring is to be removed, adequately wet and remove existing wood flooring. Treat as asbestos-contaminated material. Spread a plastic sheet on the floor, and stack removed wood flooring onto two layers of 6-mil polyethylene. Wrap each polyethylene layer around the stack, sealing all joints and edges with duct tape; see sheet 9. Apply labels to stack; see sheet 14. Smaller material will be placed in approved container; see sheet 9. Apply labels; see sheet 14.

3. Clean, HEPA vacuum, and adequately wet clean all surfaces.

4. Inspect and reclean area as necessary.

5. Prepare area for final air clearance.

6. Carry out final clearance requirements specified in applicable sheet 18 or 21.



Removal of vinyl asbestos tile adhered to wood floor system by asbestos-free adhesive

1. Prepare containment area as specified on sheet 21. NOTE: Where full containment is required, follow instructions on sheet 4, except omit polyethylene on floor.

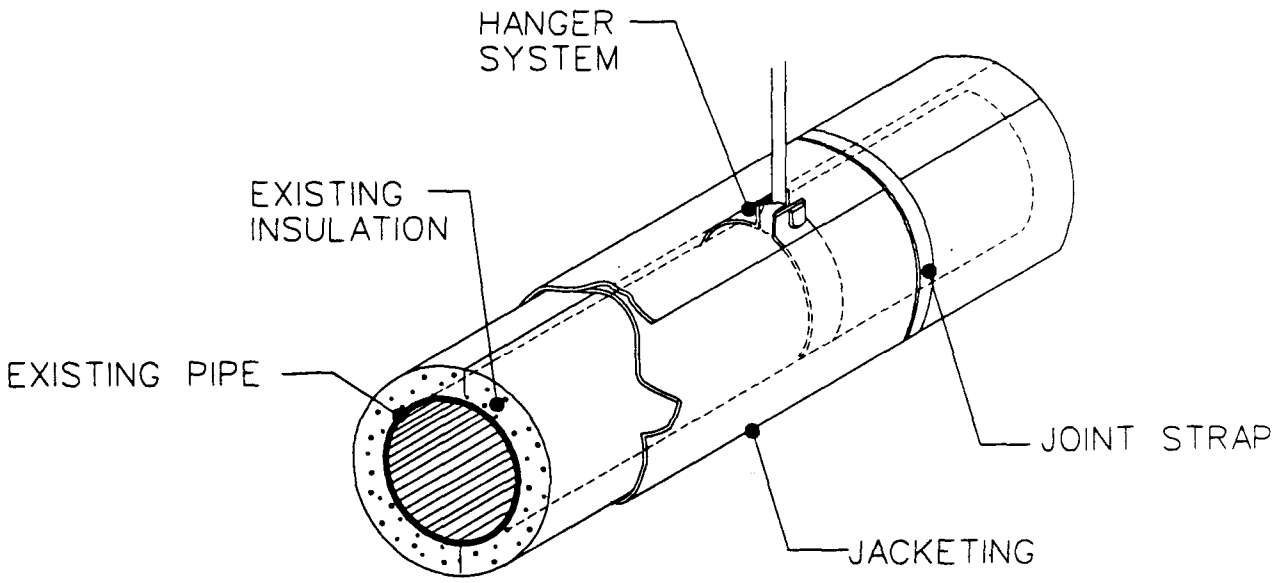
2. Adequately wet and remove asbestos tile and adhesive while they are wet in order to prevent asbestos fiber release. Place tile and adhesive into an approved container; see sheet 9. Apply labels; see sheet 14.

3. Clean, HEPA vacuum, and wet wipe all surfaces.

4. Inspect and reclean area as necessary.

5. Prepare area for final air clearance.

6. Carry out final clearance requirements specified on applicable sheet 18 or 21.



NOTE: THIS SHEET CAN BE USED FOR VERTICAL OR HORIZONTAL PIPING.

Removal of pipe insulation (using glove bag)

1. Install glove bag as specified on sheet 10. Prepare modified containment area as specified on sheet 21. Adequately wet mist insulation surface with amended water, initially and during removal.

2. Remove jacketing and asbestos pipe insulation from pipe and hanger to within 2 inches of inside edges of glove bag.

3. Clean exposed surfaces by spraying with amended water and brushing.

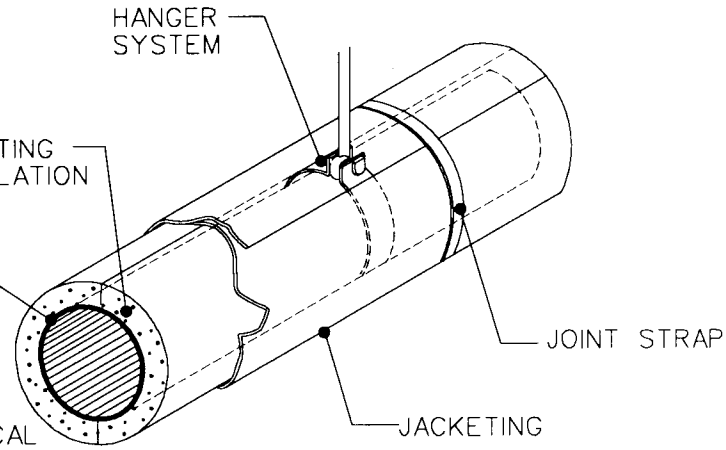
4. Inspect and reclean as necessary.

5. Spray a tinted penetrating encapsulant on pipe and exposed ends of insulation.

6. Inspect piping and reapply encapsulant as necessary.

7. Prepare area for final air clearance.

8. Carry out final clearance requirements specified on sheets 10 and 21.



NOTE: THIS SHEET CAN BE USED FOR PIPE FITTINGS AND FOR VERTICAL OR HORIZONTAL PIPING.

Removal of horizontal pipe insulation (using containment area)

1. Prepare containment area as specified on applicable sheet 2, 3, or 4.

2. Adequately wet mist insulation surface with amended water, initially and during removal. Remove jacketing and insulation from pipe and hanger system.

3. Clean exposed surfaces by spraying with amended water and brushing.

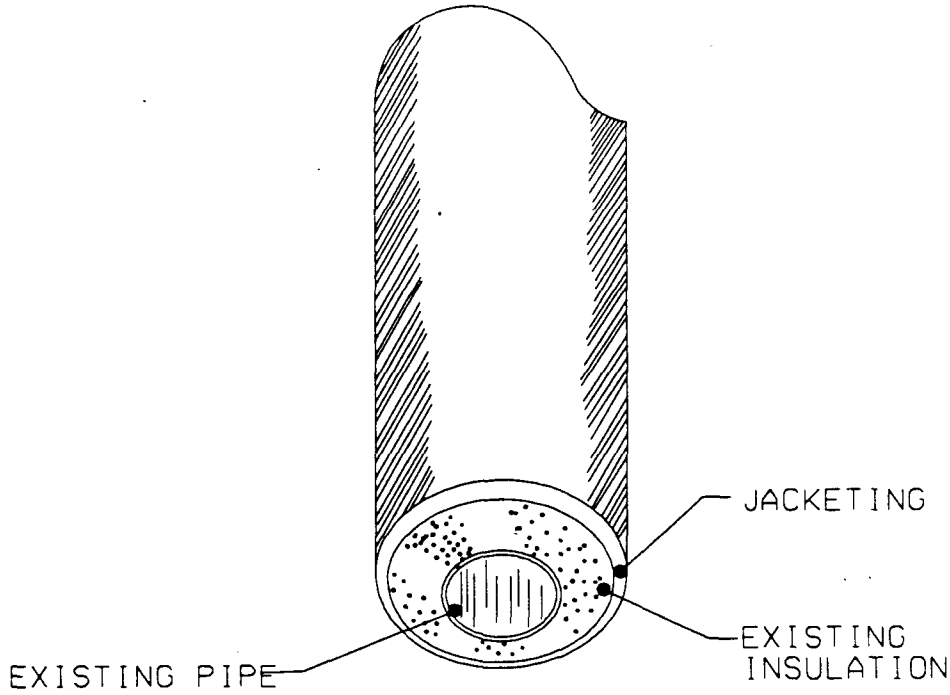
4. Inspect and reclean as necessary.

5. Spray a tinted penetrating encapsulant on pipe and exposed ends of insulation.

6. Inspect piping and reapply encapsulant as necessary.

7. Prepare area for final air clearance.

8. Carry out final clearance requirements specified on applicable sheet 16, 17, or 18.



Removal of pipe insulation (using mini-containment area)

1. Prepare mini-containment area as specified on sheet 7.

2. Adequately wet mist insulation surface with amended water, initially and during removal. Remove jacketing and insulation from pipe and hanger system.

3. Clean exposed surfaces by spraying with amended water and brushing.

4. Inspect and reclean area as necessary.

5. Spray a tinted penetrating encapsulant on pipe and exposed ends of insulation. Inspect and reapply as necessary.

6. Prepare area for final clearance.

7. Carry out final clearance requirements specified on sheet 7.

ATTACHMENT NO. 4

REFERENCES

UNDER THE FOLDER LABELED "REFERENCES" ON THE CD-ROM ARE ADOBE ACROBAT COPIES OF SELECT AIR FORCE MANUALS (AFJMAN), UNIFIED FACILITIES CRITERIA (UFC) DOCUMENTS, AIR FORCE INSTRUCTIONS (AFI), TECHNICAL INSTRUCTIONS (TI), AIR FORCE HANDBOOKS (AFH), TECHNICAL MANUALS (TM), ENGINEERING TECHNICAL LETTERS (ETL) AND ENGINEERING MANUALS (EM). THIS FOLDER IS A REFERENCE LIBRARY AND MAY CONTAIN INFORMATION NOT APPLICABLE TO THIS PROJECT. THIS FOLDER WAS CREATED TO SAVE TIME IN LOCATING MANY OF THE REFERENCES REFERRED TO IN THIS SOLICITATION.

Documents Listed below will either be included on the Solicitation CD-ROM (See Folder labeled "Guides" and subfolder labeled "References") and/or made available via a website reference. **References in Bold print only (i.e. TI 809-04) are only available on website listed.**

Air Force Manuals:

AFM 32-1093 Energy Monitoring and Control Systems (EMCS)
http://www.usace.army.mil/inet/usace-docs/armytm/tm5-815-2/

Unified Facilities Criteria (UFC) website:
http://65.204.17.188//report/doc_ufc.html

UFC 1-200-01	(Jul 2002) Design: General Building Requirements
UFC 3-120-01	(Feb 2003) Air Force Sign Standard
UFC 3-400-01	(Jul 2002) Energy Conservation
UFC 3-400-02	(Feb 2003) Engineering Weather Data
UFC 3-410-01FA	(May 2003) Design: Heating, Ventilating, Air Conditioning
UFC 3-420-01FA	(May 2003) Design: Plumbing
UFC 3-430-01A	(Jul 2003) Design: Heating and Cooling Distribution Systems
UFC 3-600-01	(17 Apr 2003; Change 16 Jan 2004) Design: Fire Protection Engineering for Facilities
UFC 4-010-01	(Oct 2003) DoD Minimum Antiterrorism Standards for Buildings

Engineering Technical Letters (ETL) website (1):
http://www.usace.army.mil/inet/usace-docs/eng-tech-ltrs/etl-all.html
ETL 1110-3-438: Indoor Radon Prevention and Mitigation, dated 15 September 1993.

Engineering Technical Letters (ETL) website (2):
http://www.afcesa.af.mil/library/etl.asp?Category=Engineering%20Technical%20Letters
ETL 00-5 (AF) (June 2000) Seismic Design for Buildings and Other Structures
ETL 01-18 (AF) (Oct 2001) Fire Protection Engineering Criteria - Electronic Equipment Installations
ETL 03-3 (AF) (April 2003) Air Force Carpet Standard

Air Force Manual website:
http://www.usace.army.mil/inet/usace-docs/armytm/tm5-811-1/
AFJMAN 32-1080 Electrical Power Supply and Distribution

Air Force Instruction(AFI)
AFI 40-201 (01 Sep 2000) Managing Radioactive Materials In The US Air Force

http://www.usace.army.mil/inet/usace-docs/armytm/tm5-809-3/
AFM 88-3 Chap. 3 (TM 5-809-3) Masonry Structural Design for Buildings (Oct 92)

http://www.usace.army.mil/inet/usace-docs/armytm/tm5-809-12/
AFM 88-3 Chap. 15 (TM 5-809-12) Concrete Floor Slabs on Grade Subjected to Heavy Loads (Aug 87)

Technical Instructions (TI)

TI website: http://www.hnd.usace.army.mil/techinfo/ti.htm
TI 809-02 Structural Design Criteria for Buildings (Sep 99)
TI 809-04 Seismic Design for Buildings (Dec 98) [ON WEB SITE]
TI 809-07 Design of Cold-Formed Load Bearing Steel Systems and Masonry Veneer/Steel Stud Walls (Nov 98) [ON WEB SITE]
TI 809-29 Structural Considerations for Metal Roofs (Aug 98)
TI 809-30 Metal Building Systems (Aug 98)
TI 809-52 Commentary on Snow Loads (Aug 98)
TI 814-1 (1998) Water Supply
TI 814-3 (1998) Water Distribution
TI 814-10 (1998) Sanitary and Industrial Wastewater Collection - Pumping Stations and Force Mains.

Depart of the Army Technical Manuals (TM)
http://www.usace.army.mil/inet/usace-docs/armytm/

TM 5-813-5 (3 Nov 1986) Water Supply, Water Distribution
TM 5-820-1 (20 Aug 1987) Surface Drainage Facilities for Airfields and Heliports
TM 5-820-4 (Oct 1983) Drainage for Areas Other Than Airfields

TM 5-822-5 (June 1992) Pavement Design for Roads, Streets Walks, and Open Storage Areas (Web Only)
TM 5-822-12 (Sept 1990) Design of Aggregate Surfaced Roads and Airfields (Web Only)

Engineering Manuals (EM)
http://www.usace.army.mil/inet/usace-docs/eng-manuals/em.htm

EM 1110-1-1002 (1990) Survey Markers and Documentation

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ATTACHMENT NO. 5

SYSTEMS FURNITURE

1 OFF-MODULAR SYSTEMS FURNITURE
- **1.1** General:
- **1.2** Warranty:
- **1.3** Panels:
- **1.4** Voice/Data and Cable Management:
- **1.5** Electrical:
- **1.6** Tiles or Skins:
- **1.7** Locking:
- **1.8** Pedestals and Below Worksurface Laterals:
- **1.9** Overhead Storage:
- **1.10** Worksurfaces:
- **1.11** Accessories:

2 FILING CABINETS & STORAGE TOWERS
- **2.1** General:
- **2.2** Wood:
- **2.3** High Capacity:
- **2.4** Locking:

3. PRE-EVALUATION OF SYSTEMS FURNITURE (EXISTING)

1 OFF-MODULAR SYSTEMS FURNITURE

1.1 General:

- Systems furniture is defined as the assembly of:

    - Panels (frames, tiles, trims and connectors)
    - Storage elements
    - Worksurfaces
    - Data and electrical components

- The workstation should provide solutions that address:

    - Flexibility
    - Ergonomics
    - Ease of reconfiguration
    - Power and data management
    - Ease of reconfiguration without requiring interruption of data networks and power distribution.

- Systems furniture shall be used in open plan spaces and may be used in a small room with several workstations. A single furniture system shall be used for the entire open plan space.

- Panel heights may be varied throughout an area to add interest and to match specific function.

- A segmented, completely stackable system is preferred. This type of system will offer greater flexibility both functionally and aesthetically while reducing the long-term cost of ownership.

    - Monolithic panels will only be accepted if they facilitate power and data access when used in an off-modular method. Monolithic panels must share common parts with the segmented frames – such as top trim, tiles, connecting hardware, etc.

- All components described herein must meet ANSI/BIFMA 5.6 2003 and the GSA Technical Requirements described in the GSA standing solicitation for schedule 71, Part 1 – Office Furniture.

- Deviations from those listed in this FEP must be noted and approved.

- For information about panel and tackable fabrics see Textiles.

1.2 Warranty:

- Shall have a limited lifetime warranty.

1.3 Panels:

- The panel frames shall be an epoxy powder-coat finish that is scratch resistant for maximum durability.

- Tolerances around tiles and trims must be minimal and consistent. No frames or vertical channeling should be visible.

- Panel shall be available in 6 heights, small variances are allowed:

    - 30” nominally for private office applications
    - 37” nominally for areas requiring little privacy
    - 51” nominally for areas requiring seated privacy
    - 64” nominally for standing privacy
    - 78” and 90” nominally for enclosed offices and ultimate privacy

- Panels shall be available in a minimum of 8 widths in 6” increments ranging from 18” to 60”.

- Panel thickness, with tiles or skins in place, must be between a minimum of 2” and a maximum width of 3-1/2.”

- Base and frames shall be constructed of a minimum 16-18 gauge steel.

- The panel connector system shall provide for:

    - In-line connections
    - 90-degree L, T and X connections
    - 120-degree connections
    - Off-module connections of panels of similar and dissimilar heights

- The same universal connector shall have the ability to be used in all 90-degree L, T and X connections.

- A minimum of two connection points or brackets is required between any two panels on or off module.

- The connector system and panel design shall allow for the removal of a single panel within a typically fully powered and data-cabled workstation configuration without requiring disassembly of the workstation, removal of adjacent panels, or the removal of the power or data cabling.

- Standard leveling glides shall adjust a minimum of 1-1/2 inches to handle inconsistency in the level of the floor.

    - Extended glides that offer a range of 3 inches shall be available as an option for extreme leveling conditions.

    - Optional slide glides may be specified to configure slide stations when spine planning to house all voice/data and electrical.

- Each panel shall be load bearing and structurally capable of supporting more than one fully loaded component (overhead bin or shelf) per side, and all worksurfaces. Specifically, panels shall meet the requirements as documented in ANSI/BIFMA 5.6 2003 Section 8.

- All panels shall accept stack-on panel modules without the removal of the panel from the workstation, and without disconnecting power or data cabling even where power poles exist.

    - Stack-on panel modules must be load bearing and capable of supporting overhead bins and shelves. Panels shall also accept partial width stack-on panel modules.

- All panels of heights greater than 37”, including panels which have had their height increased, shall have the capability to be lowered without the removal of the panel, cabling, electrical from the workstation.

- All panels shall have the ability to accept off-module panel intersections (panels that intersect at the middle of a panel and not at the end.)

    - These off-module panel connections shall also have the capability of being fully powered and cabled.

- Exposed panel trim and top caps that are painted shall be made of metal and have a factory-baked enamel or epoxy powder coat finish.

    - Filler trim shall match the panel trim.
    - All trim shall be of the same material to maintain finish quality and consistency.
    - Exposed panel trim and top caps shall also be available in a wood-grain aesthetic.
    - No fabric covered trim allowed.

- Acoustical tiles shall be mounted in the horizontal communication zone, which starts at the worksurface height and goes up a minimum of 13".

    - Acoustical tiles must have a minimum NRC rating of .80 when tested in accordance with ASTM Standard C423-90, Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method, on a panel tiled with acoustical tiles.

    - All panels shall maintain full voice/data cabling requirements while performing to this minimum NRC rating.

    - If the fabric on the tested panel meets NFPA No. 701 than any other fabric that meets NFPA No. 701 will also be deemed as acceptable. Otherwise the ASTM E-84 panel test must be conducted on each different fabric.

- Tackable-acoustical tiles:

    - Shall be constructed using perforated steel in the front with a dense insulation backing constructed from fiberglass and a phenolic resin, and wrapping the front in any standard fabric.

        - The perforated steel front provides additional rigidity and will not leave an impression when pushpins are relocated.

    - Fabric covered panels shall have a maximum smoke development rating of 450 and a maximum flame spread of 25 when tested in accordance with either ASTM Standard E-84, UL 723 or NFPA 255 on the entire panel assembly including fabric.

Doors:

- Door panels shall have a rigid metal frame with rails, a threshold, and a wood or laminate clad door to hand swing.

    - Shall be of a dimension that will allow for a 32-inch (813 mm) clear opening.
    -Shall include connectors, hinges, brushed chrome doorknob, and keyed lockset.

- Sliding or pocket doors are acceptable for stations with 60" panels or higher. Traffic considerations must be taken for sliding doors that are outside the panels.

    - Sliding doors shall be available in:
        - Widths: 42" and 48"
        - Heights: nominally 51" and 64"

- Sliding door construction:
    - 1” aluminum frame painted available in approximately 60 colors
    - Ribbed plexiglass
    - Two casters shall be attached to the bottom of each door for easy movement

1.4 Voice/Data and Cable Management:

- All systems must comply with TIA/EIA, 568-A, 569 Commercial Building Telecommunications Cabling Standards for meeting or exceeding all cable installation standards. This includes separation requirements for the avoidance of electromagnetic interference (EMI).

- All panels are to accept lay-in cable in all segments with the ability to organize and route a large volume of fiber optic and copper cable.

    - Cables should not be fished or pulled through any apertures or holes in the panel frame, inclusive of connection points and corners. This enables the removal of a panel without disconnecting and removing the cabling.

- Each panel shall be capable of accepting voice/data and power feeds from:

    - The floor at any point along its base
    - From a wall or support column at any point across its face
    - Or from the ceiling in multiple locations along the top of every panel

    - Each panel should have the ability to accept more than one feed.

- The system shall offer cable access at the base or floor level and at the worksurface level.

- Power poles shall be available with a minimum Cat 5 cable capacity of 28 with power in the same power pole, or 48 with no power.

    - To serve needs greater than standard power poles can accommodate, special large capacity “chimneys” shall be available with a minimum Cat 5 cable capacity of 130 with power or 212 without power.

- 64” high-panels shall accept a minimum of 430 cat 5 cables and have the ability to loop excess cable for storage within each panel.

- All panels shall have the option of having the data face-mounted in a tile or skin, or concealed within the panel.

    - The concealed data connection should be freely movable from frame to frame and vertically segment to segment, allowing for reconfigurations without voice/data disruption.

- Data access shall be through industry standard faceplates commonly specified for drywall applications to maintain consistency throughout the facility.

- All panels shall have the ability to locate voice/data and/or electrical within any segmented zone of the panel to adequately support all voice/data and electrical requirements.

- Panels shall have the ability to facilitate the routing of large volumes of cabling vertically or horizontally at any height within the panel.

- Panels shall have the ability to route cables in off-module applications. Routing of cables shall be accomplished without cutting or modifying panels or tiles.

- All panels shall accept Consolidation devises (patch panels or MUTOAs) mounted inside of each panel to facilitate zone cable distribution.

1.5 Electrical:

- Plan for no more than three workstations per circuit without the consultation of a licensed electrician.

- Powered panels shall be a minimum of a 4-circuit, 8-wire system with up to 3 outlets of isolated ground protection.

- The system shall offer electrical access at no fewer than 4 positions in a typical 64” high panel.

    - Panels 30” and wider shall have capacity for two duplex outlets per panel side or four outlets per panel.

- Non-powered panels shall be capable of easy field conversion to powered panels without requiring the panel to be disassembled or removed from the workstation.

- Power tracks, duplexes, and track-to-track electrical connectors and pass-thru's shall be installed without tools.

- The power system shall have a shield between data lines and power lines to avoid electrical interference.

- The power system shall interface with raised floor applications and shall have clear access anywhere along the length of the panel base.

- Task lights shall be available for mounting under overhead bins, shelves, or transaction counters.

1.6 Tiles or Skins:

- The panel tiles or skins shall allow for easy removal and replacement in the field and shall have markings to indicate the proper installation orientation.

- Tiles or skins shall be available at a minimum in the following finishes:

    - Painted steel
    - Perforated steel
    - Embossed steel
    - Fabric wrapped steel
    - Tackable
    - Acoustical
    - Tempered glazed inserts

- Each fabric tile or skin shall have a seamless width of fabric stretched over the entire face of the panel/tile, and the color of each fabric used shall be consistent throughout the installation.

- Painted steel panel/tile shall have a powder coat finish to ensure maximum durability.

- Tiles shall be a minimum of 24 gauge steel available in the following range of nominal heights: 7," 13," 20," 27," and available in the same 8 widths to match the panel widths (18," 24," 30," 36," 42," 48," 54," 60").

- Partial width tiles and locking tiles shall also be available to accommodate space planning challenges and to house secured data.

- Tiles shall have the capability to be mounted off module, i.e. a width inconsistent with the width of the panel frame.

- The system shall offer approximately 70 options in standard fabrics), trims in approximately 60 standard paint colors and tiles in approximately 60 standard paint colors.

    - Customers Own Material (COM) is acceptable as long as it passes the NFPA #701 test and the designated manufacturer's application test.

1.7 Locking:

- All pedestal drawers, overhead bin cabinets, and lateral files shall have keyed locks, unless otherwise noted.

- Each workstation shall be individually keyed and locks within a workstation shall be keyed alike.

- Field changeable lock cylinders shall be available with a minimum of 150 different key options.

- Drawers within a pedestal shall be lockable either by a central lock that controls all pedestals under one work surface or an individual keyed lock in each pedestal.

- Central file and storage units, which are grouped together but are not a part of a workstation, shall be keyed alike unless otherwise specified.

- Keys provided:

    - Two keys for each lock or two keys per workstation when keyed alike
    - Three master keys per area.

- Keys and lock cylinders shall be numbered for ease of replacement. All locks must be clearly labeled with a key number.

1.8 Pedestals and Below Worksurface Laterals:

- For other storage needs see Filing & Storage Towers.

- Pedestals and below worksurface laterals shall be constructed of 18 and 20 gauge high quality, tension leveled, cold rolled steel.

- The case shall be completely enclosed with a top, bottom, and back and show no visible vertical seams on the front of the case.

- All drawer fronts shall be double wall construction.

- Counterweights are required.

- All pedestals and below worksurface laterals shall be finished with two coats of high quality electrostatic enamel paint that is fade and chip resistant with a low gloss level for maximum durability.

- Approximately 60 standard color options shall be available with others available as an option.

- All case interiors shall be completely modular and interchangeable so that cabinets can be retrofitted with new drawer sizes as required.

- All pedestals and below worksurface laterals shall have a recessed handle.

- All pedestal and below worksurface laterals drawers shall utilize:

    - Fully progressive and full extension casehardened steel ball bearing suspensions
    - Shall be staged so that left and right sides work in unison providing smooth drawer operation with minimum force.
        - Staged suspensions allow the drawer to be completely pulled out, providing access to the entire drawer depth.

- Pedestals shall be available in a variety of styles including:

    - Suspended
    - Worksurface supporting
    - Mobile

- Worksurface supporting pedestals shall be available in depths to match the worksurface depth and in both legal (18”) and letter (15”) widths.

- Mobile pedestals shall be available in a variety of styles to include a welded handle for ease of movement and a 2” seat cushion attached to the top of the pedestal.

- Pedestals shall be available in 5 heights to support multiple height worksurfaces:

    - 24-1/4”
    - 25-3/4”
    - 27-1/4”
    - 28-3/4”
    - 30-1/4”

- Pedestals shall be available in 6 drawer heights to accommodate all types of media storage required:

    - 3”
    - 6”
    - 7-1/2”
    - 10-1/2”
    - 12”
    - 15”

- Below worksurface laterals shall be available in case heights starting at 18” nominally and increasing by 1-1/2” increments to the appropriate height for below the worksurface and shall match architectural or construction requirements and panel system detailing.

- Below worksurface laterals shall be available in 3 case widths:

- 30”
- 36”
- 42”

- Below worksurface laterals shall be available in 11 drawer heights to accommodate all typed of media required.

- 1-1/2” reference shelf
- 3”
- 4-1/2”
- 6”
- 7-1/2”
- 9”
- 10-1/2”
- 12”
- 13-1/2”
- 15”
- 16-1/2”

- Specialty types of filing may be required. Such as:

  - Cases with individually locking drawers and a welded security shelf between openings
  - Lateral files with a welded GSA security bar
  - Cases featuring vertically slotted compartments and horizontal trays for flat form type storage.

- File drawer bodies shall have full-height sides to accommodate hanging file folders, eliminating the need for optional file frames.

- Standard leveling glides shall adjust a minimum of 1-3/8 inches for pedestals and ¾” for below worksurface laterals to handle inconsistency in the level of the floor.

  - Extended glides that offer a greater range of adjustment shall be available as an option for extreme leveling conditions.

- All pedestal and below worksurface lateral drawers shall utilize an anti-rebound devise to prevent drawers from bouncing back or drawer creep when drawer is closed.

- All below worksurface laterals shall utilize an interlock mechanism preventing the accidental opening of two or more drawers simultaneously.

1.9 Overhead Storage:

- Overhead bins and shelves shall be deep enough to accommodate binders.

- Overhead storage shall have the capability to be panel mounted on and off-module, i.e. anywhere along the panel.

- Overhead bins and shelves shall be fabricated from a minimum of 20-gauge steel.

- Overhead bins shall have a fully enclosed back with a double-wall constructed door front.

- Overhead bins shall have a nylon rack and pinion gear for fingertip opening.

- Overhead bins shall offer a “soft-down” mechanism that slows the speed at which the overhead doors close thus eliminating any possibility of injury while reducing noise when closing.

- Overhead bins shall open over the top of the case yet not protrude above the panel height in their open position.

- For security purposes, the lock mechanism shall engage on both sides of the overhead bin case.

1.10 Worksurfaces:

- Worksurfaces shall be available in shapes:

  - Rectangular
  - 90-degree corner
  - Curved corner
  - Bullet top
  - P-top shapes
  - Transaction counters

- Worksurfaces shall be available with a strait edge and a gradually sloping tapered edge.

- Worksurfaces shall be available in standard nominal depths of 24" and 30" and rectangular shapes shall have nominal lengths from 24" increasing in 6" increments to 72". Other special sizes may be required.

- Transaction counters shall be deep enough to allow a task light to be mounted underneath.

- Standard worksurfaces shall either be constructed of either:

  - A minimum of 45 lb core density 1.25" thick particle board with a minimum of 0.050 inch high pressure laminate and 1/8" vinyl "T" molding on edges

  - A thermo-formable polymer based sheet continuously bonded to a 1.25" thick MDF substrate that has no edge seams

- All non-veneer worksurfaces shall not be affected by ordinary household solvents, acids, alcohols, or sale solutions, and shall be capable of being cleaned with ordinary household cleaning solutions.

- Wood veneer worksurfaces shall have a veneer thickness of .032" and an overall thickness of 1.25". They shall be edged with a ¼" same species solid hardwood.

- Worksurfaces shall have pre-drilled metal inserts to securely fasten storage components, pedestals, brackets and supports in proper alignment.

- The system shall enable worksurfaces to be mounted along the entire height of the panel frame in 1" to 1 ½" increments.

- Worksurfaces shall have the ability to be pedestal supported at the 5 following nominal heights: 25-1/2," 27," 28-1/2," 30," and 31-1/2."

- Worksurfaces abutting at equal heights shall provide a continuous and level worksurface.

1.11 Accessories:

- Organizer accessories shall have the capability to be panel mounted on any panel, or worksurface mounted anywhere along the edge of the worksurface.

- Accessory trays shall be interchangeable by the user.

- The following accessories shall be available to be mounted as referenced above:

    - In/out paper trays
    - Telephone holder tray
    - 15 CD holder tray
    - Binder pocket
    - Catchall tray that holds 5 CDs and a variety of small supplies

- Coat hooks and picture hangers shall be available. They shall hang on panel frames, install without tools, and user adjustable.

- Signage measuring approximately 5" l x 2-1/2" h and 9" l x 2-1/2" h shall be available. The user shall have the capability to change the nameplate and mount the sign without tools.

- Accessories and signage shall be available in approximately 60 colors.

- White boards shall be available two heights (13-1/2" and 27" nominally) and in 5 widths (24," 30," 36," 42," and 48"). Whiteboards of any width shall be available on panel system frames of any width.

2 FILING CABINETS & STORAGE TOWERS

General
Wood
High Capacity
Locking

2.1 General:

- This includes:

    - File cabinets: freestanding or under counter with furniture
    - Storage towers
    - Fire rated
    - High capacity

- Warranty: lifetime limited.

- A variety of hinged door cabinets and personal storage towers shall be available with specifications and product detailing consistent with the below specifications.

- Storage shall be constructed of 18 and 20 gauge high quality, tension leveled, cold rolled steel.

- The storage case shall be completely enclosed with a top, bottom and back and show no visible vertical seams on the front of the case.

- All drawer fronts shall be double wall construction.

- Counterweights are required.

- All storage shall be finished with two coats of high quality electrostatic enamel paint that is fade and chip resistant with a low gloss level for maximum durability.

    - Approximately 60 standard color options shall be available with others available as an option.

- All case interiors shall be completely modular and interchangeable so that cabinets can be retrofitted with new drawer sizes as required.

- All drawers and doors shall have a recessed style handle.

- All drawers shall utilize fully-progressive and full extension case hardened steel ball bearing suspensions, and shall be staged so that left and right sides work in unison providing smooth drawer operation with minimum force.

- Staged suspensions allow the drawer to be completely pulled out, providing access to the entire drawer depth.

- Laterals and storage towers shall be available in 42 case heights starting at 18” nominally and increasing by 1-1/2” increments to 80” nominally, to match architectural or construction requirements and panel system detailing.

- Laterals and storage towers shall be available in a variety of widtsh to accommodate all types of media as required:

- 30”
- 36”
- 42”

- Lateral and storage drawers shall be available in 11 drawer heights:

- 1-1/2” reference shelf	- 10 ½”
- 3”	- 12”
- 4-1/2”	- 13 ½”
- 6”	- 15”
- 7-1/2”	- 16 ½”
- 9”	

- Specialty types of filing may be required and shall be available from time to time. These shall include cases with individually locking drawers and a welded security shelf between openings, lateral files with a welded GSA security bar and cases featuring vertically slotted compartments and horizontal trays for flat form type storage.

- File drawer bodies have full-height sides to accommodate hanging file folders, eliminating the need for optional file frames.

- Standard leveling glides shall adjust a minimum of 3/4” to handle inconsistency in the level of the floor. Extended glides that offer a greater range of adjustment shall be available as an option for extreme leveling conditions.

- All drawers shall utilize an anti-rebound devise to prevent drawers from bouncing back or drawer creep when drawer is closed.

- All drawers shall utilize an interlock mechanism preventing the accidental opening of two or more drawers simultaneously.

2.2 Wood:

- Wood cabinets are to use a veneer with a hardwood edge.

- See Freestanding Office Furniture: Casegoods for more information.

- Wood finishes: walnut, cherry or mahogany.

- Oak stains are not allowed. Oak wood is prohibited.

- Since the intent is to move away from even using oak wood, this shall be approved by the BCE.

2.3 High Capacity:

- Confirm floor is able to withstand the load required for unit and materials.

- Tracks to be mounted directly to floor substraight and not through carpet.

    - Carpet shall be easily maintained and replaced without knocking down the system.

2.4 Locking:

- All drawers, overhead bin cabinets, storage towers, and lateral files shall have keyed locks, unless otherwise noted.

- Each workstation shall be individually keyed and locks within a workstation shall be keyed alike.

- Field changeable lock cylinders shall be available with a minimum of 150 different key options.

- Drawers &/or doors within a unit shall be lockable either by a central lock that controls drawer/door or an individual keyed lock in each drawer/door individually.

- Central file and storage units, which are grouped together but are not a part of a workstation, shall be keyed alike unless otherwise specified.

- Keys provided:

    - Two keys for each lock or two keys per workstation when keyed alike
    - Three master keys per area.

- Keys and lock cylinders shall be numbered for ease of replacement. All locks must be clearly labeled with a key number.

ADAL Misson Support Facility
Peterson AFB, CO

Pre-evaluation of Systems Furniture

REVISION #1

7 June 2004

Original Report: 13 May 2004

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GENERAL NOTES:

1. All systems panels are approximately 66" high unless noted. Low panels are approximately 36"-42" high and Tall panels are approximately 80" high.

2. All systems product, whether it was located in an open area or a private office during the walk-thru, is included under SYSTEMS FURNITURE. Only freestanding desks are included in the PRIVATE OFFICE category.

3. Systems furniture included in the NOT REUSABLE category are not part of the Facilities Excellence Program at Peterson AFB.

4. During the pre-evaluation survey it was discovered that the average station size is only 49.45 square feet versus the 64 square feet (8' x 8' station) that will be required in the new configuration. Existing workstations may need additional product to build out the additional square footage and net quantity shortages may be greater than shown.

5. Every effort was made to conduct a complete survey for the groups listed herein. Allowances should be made, however, for discrepancies of plus/minus 15% of all product quanitities listed.

ORGANIZATION:

LGCCA

Moving from Building 365

SYSTEMS FURNITURE:

Steelcase Avenir

Panels: Beige

Worksurface: Beige

Storage: Dark Grey

Trim: Dark Grey

STATION SIZE:	# REUSABLE	# NOT REUSABLE
8' x 7' (all standard ht. panels)	5	
8' x 7' (standard/low panels)	8	
8' x 7' (standard/tall panels)	1	
8' x 7' (standard/tall panels w/door)	1	
8' x 9' (standard/tall panels)	1	

SEATING:	# REUSABLE	# NOT REUSABLE
Task Seating	16	

STORAGE UNITS:	# REUSABLE	# NOT REUSABLE
36" wide lateral file, 5 high (dark grey)	9	

PRIVATE OFFICES:	# REUSABLE
no freestanding desks	

QUANTITY COMPARISONS

MANNING DOCUMENT	WALKTHRU
1 - Private Office	0 - Private Offices
13 - Workstations	16 - Workstations

ORGANIZATION:

LGCCB

Moving from Building 365

SYSTEMS FURNITURE:

Steelcase Avenir

Panels: Beige

Worksurface: Beige

Storage: Dark Grey

Trim: Dark Grey

STATION SIZE:	# REUSABLE	# NOT REUSABLE
5' x 7'	1	
6'-6" x 7'	4	
6'-6" x 7' (standard/low panels)	6	
6'-6" x 9'-6"	1	
6'-6" x 9'-6" (standard/low panels)	1	
7' x 8'-6"	1	
7' x 9'	1	
7' x 9'-6"	1	

SEATING:	# REUSABLE	# NOT REUSABLE
Task Seating	17	1

STORAGE UNITS:	# REUSABLE	# NOT REUSABLE
36" wide lateral file, 5 high (dark grey)	6	

PRIVATE OFFICES:	# REUSABLE
CC:	1
36" x 72" double pedestal desk, 72" credenza w/ hutch, 36"w 2 drw lateral file, 3 guest chairs, side table	
TOM WILLIAMS:	1
36" x 72" double pedestal desk, 72" credenza w/ hutch, 36"w 4 high lateral file, 36"w 5 high lateral file, sofa	

QUANTITY COMPARISONS

MANNING DOCUMENT	WALKTHRU
1 - Private Office	2 - Private Offices
13 - Workstations	16 - Workstations

ORGANIZATION:

LGCZB

Moving from Building 365

SYSTEMS FURNITURE:

Steelcase Avenir

Panels: Beige

Worksurface: Beige

Storage: Dark Grey

Trim: Dark Grey

STATION SIZE:	# REUSABLE	# NOT REUSABLE
7' x 8' (standard/tall panels)	2	
2 person stations:		
7' x 14'-6" (low/standard/tall panels)	1	
10' x 12'-6" (low/standard/tall panels)	1	
10'-6" x 12'-6" (low/standard/tall panels)	1	
4 person stations:		
12'-6" x 16'-6" (low/standard/tall panels)	1	
12'-6" x 18' (low/standard/tall panels)	1	

SEATING:	# REUSABLE	# NOT REUSABLE
Task Seating	15	1

STORAGE UNITS:	# REUSABLE	# NOT REUSABLE
36" wide lateral file, 5 high (dark grey)	15	
36" wide lateral file, 5 high (dark taupe)	1	
36" wide lateral file, 2 high (dark grey)	1	

PRIVATE OFFICES:	# REUSABLE
CHIEF:	1
36" x 72" double pedestal desk, 72" credenza w/ hutch, 36"w 4 drw lateral file, 42" dia. Table/chairs, bookcase	
RECEPTION:	1
36" x 72" L ped desk, 24"x48" return, 24"x72 R ped credenza w/hutch, 36"w 2drw. lateral file, (2) 33"w tall storage cabinets	

CONFERENCE ROOMS:	# REUSABLE
10' X 3'-6" table with sled base chairs/no swivel	1 table with recommendation for new chairs

ORGANIZATION

LGCZB (cont.)

Moving from Building 365

CONFERENCE ROOMS: (cont.)	# REUSABLE
4' x 8' whiteboard	1
8' x 6' pull down projection screen	1
"IN FOCUS" projector LP750	1

QUANTITY COMPARISONS

MANNING DOCUMENT	WALKTHRU
2 - Private Offices (includes 1 LGCZ P.O	2 - Private Offices
16 - Workstations	16 - Workstations

ORGANIZATION:

21 MXG

Moving from Building 365

SYSTEMS FURNITURE:

Steelcase Avenir

Panels: Beige

Worksurface: Beige

Storage: Dark Grey

Trim: Dark Grey

STATION SIZE:	# REUSABLE	# NOT REUSABLE
8' x 7'	5	

SEATING:	# REUSABLE	# NOT REUSABLE
Task Seating	9	2

STORAGE UNITS:	# REUSABLE	# NOT REUSABLE
36" wide lateral file, 5 high (dark grey)	4	
36" wide lateral file, 4 high (dark grey)	1	
36" wide lateral file, 3 high (dark grey)	1	
36" wide lateral file, 2 high		1
36" wide tall storage cabinet (dark grey)	1	

PRIVATE OFFICES:	# REUSABLE
ADMIN:	1
36" x 72" desk w/ 24"x48 R return, 24"x72" credenza, (2) 2 seater lounge chairs, (1) 1 seat lounge chair, 1 side table	
CC:	1
36" x 72" double pedestal desk, 24" x 72" credenza w/ hutch, 30" x 72" table, (1) 30" bookcase, (1) hinged door bookcase, sofa, (2) side tables	
CD:	1
36" x 72" desk with R return, (2) 36"w 2drw. lateral files, 30"w bookcase, 36" dia. table/chairs	
CCE:	1
36" x 72" double pedestal desk, 24" x 72" credenza w/ hutch, 24" x 24" work table	

ORGANIZATION:

21 MXG (cont.)

Moving from Building 365

PRIVATE OFFICES (cont.):	# REUSABLE
CEM:	1
36" x 72" double pedestal desk, 24" x 48" computer table, 36"w bookcase, 30"w tall bookcase, sofa	
CCF:	1
36" x 72" double pedestal desk, 24" x 72" credenza w/ hutch, 36"w 2 drw. lateral file, 36"w 2 drw. lateral file w/ hutch, 16"w x 30"d wall locker	

CONFERENCE ROOMS:	# REUSABLE
12' X 3'-6" table with 30"x36" audio/visual table, 9 chairs	1
"3M" MP8650A LCD Projector	1
50-60 HZ	
100-240V	
6' x 5' whiteboard with doors	1
8' x 6' pull down projection screen	1

QUANTITY COMPARISONS

MANNING DOCUMENT	WALKTHRU
6 - Private Offices	6 - Private Offices
5 - Workstations	5 - Workstations

ORGANIZATION:

SMF

Moving from Building 605

SYSTEMS FURNITURE #1:

Steelcase Answer

Panels: Pink/Grey
Worksurface: Pink/Grey Matrix
Storage: Black
Trim: Black

STATION SIZE:	# REUSABLE	# NOT REUSABLE
5' x 12' Reception station w/ counter	1	

SYSTEMS FURNITURE #2:

Steelcase Context

Panels: Pink/Grey
Worksurface: Pink/Grey Matrix
Storage: Black
Trim: Black

STATION SIZE:	# REUSABLE	# NOT REUSABLE
5' x 7'-6"	1	
6' x 6'	1	
6' x 6'-6"	1	
7'-6" x 10'-6"	2	

SEATING:	# REUSABLE	# NOT REUSABLE
Task Seating	10	5

STORAGE UNITS:	# REUSABLE	# NOT REUSABLE
42" wide lateral file, 5 high (dark grey)	8	
42" wide lateral file, 5 high (putty)	4	
42" wide lateral file, 4 high (dark grey)	3	
42" wide lateral file, 4 high (putty)	1	
36" wide lateral file, 5 high (dark grey)	2	
30" wide storage cabinet (putty)	2	
15"w x 24"d vertical files, 2 high (putty)	7	

ORGANIZATION:

SMF (cont.)

Moving from Building 605

PRIVATE OFFICES:	# REUSABLE
CHIEF:	1
30" x 66" desk w/ L return, 24" x 72" return, 36"w 2 high lateral, 42" dia. table/chairs	
DESKS BEING USED IN OPEN OFFICE AS WORKSTATIONS:	
5' x 8'	1
6' x 6'	2
6' x 7'-6" U shape w/ enclosed hutch	3
6' x 8' U shape w/ enclosed hutch	1
6' x 8'-6" U shape w/ enclosed hutch	1

CONFERENCE ROOMS:	# REUSABLE
15' X 3'-6" table, audio/visual stand, mobile ped, 12 swivel chairs, 14 sled base chairs	1
10' x 3'-6" table, 6 sled base chairs	1
8' x 3'-6" table, 8 sled base chairs	1
8' x 3'-6" table, 6 sled base chairs	1
Source Selection Work Centers	
24" x 36" (Steelcase to match systems)	4
4' x 8' whiteboard	1
5' x 5' whiteboard with doors	1
8' x 6' pull down projection screen	1
IN FOCUS" LP725 projector	1

QUANTITY COMPARISONS

MANNING DOCUMENT	WALKTHRU*
6 - Private Offices	1 - Private Office
33 - Workstations	6 - Workstations
	8 - Desks being used as Workstations

**15 people to be coming from Federal Bldg. off base and will NOT be bringing furniture with*

ORGANIZATION:

21SW-MOM

Moving from Building 845

SYSTEMS FURNITURE:

Steelcase Avenir

Panels:

Low Panels: Beige

Standard Ht. Panels: Taupe

Worksurface: Taupe Matrix

Storage: Dark Grey/Seafoam Green Overheads

Trim: Beige/Taupe

STATION SIZE:	# REUSABLE	# NOT REUSABLE
6' x 6'-6"	3	
6'-6" x 5'-6"	1	
6'-6" x 6'-6"	1	
7' x 8'	1	
7' x 10"	1	
7' x 13' (2) person station	1	
8'-6" x 12' (2) person station	1	
13' x 13' (4) person station	2	
***Note: Above stations have a mix of standard and low height panels**		
6' x 8'-6" (in CHIEF'S Private Office) (standard colors)	1	

SEATING:	# REUSABLE	# NOT REUSABLE
Task Seating	17	

STORAGE UNITS:	# REUSABLE	# NOT REUSABLE
36" wide lateral file, 5 high (dark grey)	12	
36" wide lateral file, 4 high (light grey)	1	

PRIVATE OFFICES:	# REUSABLE
No Freestanding Desks	

QUANTITY COMPARISONS

MANNING DOCUMENT	WALKTHRU
5 - Private Offices	0 - Private Offices
19 - Workstations	20 - Workstations (1 used as Chief's private office)

ORGANIZATION:

EEO

Moving from Building 880

SYSTEMS FURNITURE:

Steelcase Avenir

Panels: Beige

Worksurface: Beige

Storage: Dark Grey

Trim: Dark Grey

STATION SIZE:	# REUSABLE	# NOT REUSABLE
5'-6" x 5'-6"	1	
7' x 5'-6"	1	

SEATING:	# REUSABLE	# NOT REUSABLE
Task Seating	13	

STORAGE UNITS:	# REUSABLE	# NOT REUSABLE
36" wide lateral file, 5 high (dark grey)	2	
36" wide lateral file, 4 high (dark grey)	1	
36" wide lateral file, 2 high (dark grey)	1	
42" wide lateral file, 5 high (dark grey)	1	

PRIVATE OFFICES:	# REUSABLE
No Freestanding Desks	

QUANTITY COMPARISONS (COMBINED WITH MEO)

MANNING DOCUMENT	WALKTHRU
See MEO Totals	See MEO Totals

ORGANIZATION:

MEO

Moving from Building 880

SYSTEMS FURNITURE:

Steelcase Avenir

Panels: Beige

Worksurface: Beige

Storage: Dark Grey

Trim: Dark Grey

STATION SIZE:	# REUSABLE	# NOT REUSABLE
4'-6" x 5' with reception counter	1	
7' x 8'-6" std/low height panels	4	

SEATING:	# REUSABLE	# NOT REUSABLE
Task Seating	7	

STORAGE UNITS:	# REUSABLE	# NOT REUSABLE
36" wide lateral file, 5 high (dark grey)	2	
15"w x 26-1/2"d vertical file, 4 high (dark grey	4	
36" wide tall storage cabinet, 24"d (dark grey)	2	
36" wide lateral file, 2 high (black)	1	

PRIVATE OFFICES:	# REUSABLE
No Freestanding Desks	

CONFERENCE ROOMS:	# REUSABLE
(4) 24" x 60" tables w/ 17 chairs	1
4' x 8' whiteboard	1

QUANTITY COMPARISONS (COMBINED WITH EEO)

MANNING DOCUMENT	WALKTHRU
5 - Private Offices	0 - Private Offices
0 - Workstations	7 - Workstations (6 in private offices)

ORGANIZATION:

SFS/SFA

Moving from Building 880

SYSTEMS FURNITURE:

Haworth Unigroup

Panels: Lt. Mauve Weave

Worksurface: Oak Laminate

Storage: Burgundy

Trim: Beige

STATION SIZE:	# REUSABLE	# NOT REUSABLE
6' x 2'	1	
6' x 5'	1	
6' x 6'	1	
6' x 7'	2	
6' x 8'	6	

SEATING:	# REUSABLE	# NOT REUSABLE
Task Seating		11

STORAGE UNITS:	# REUSABLE	# NOT REUSABLE
36" wide lateral file, 5 high (putty)	1	
30" wide lateral file, 4 high (putty)	2	
30" wide lateral file, 2 high (dark grey)	1	
36" wide tall storage cabinet, 24"d (putty)	2	
18"w x 26-1/2"d vertical file, 5 high (putty)	1	
18"w x 26-1/2"d vertical file, 4 high (black)	2	
18"w x 26-1/2"d vertical file, 2 high (putty)	5	
18"w x 26-1/2"d vertical file, 2 high (dark grey	1	
17"w x 28"d vertical file safe, 5 high (grey)	1	
24" x 30" fingerprint station	1	

PRIVATE OFFICES:	# REUSABLE
No Freestanding Desks	

QUANTITY COMPARISONS

MANNING DOCUMENT	WALKTHRU
4 - Private Offices	0 - Private Offices
10 - Workstations	11 - Workstations

ORGANIZATION:

LGC

Moving from Building 982

SYSTEMS FURNITURE:

HON Simplicity

Panels: Mauve

Worksurface: Oak Laminate

Storage: Beige

Trim: Beige

STATION SIZE:	# REUSABLE	# NOT REUSABLE
9' x 11'		1

SEATING:	# REUSABLE	# NOT REUSABLE
Task Seating	3	1

PRIVATE OFFICES:	# REUSABLE
LGC: 78" x 42" double pedestal desk, 19" x 88" credenza, (2) 36"w bookcases, (5) guest chairs, (2) side tables	1
LGC ADMIN: 30" x 72" desk with 24" x 48" L return, 24" x 72" credenza, mobile file, 36"w bookcase, guest chairs	1
LGCE: 36" x 75" double pedestal desk, (2) 48" w bookcases, hinged door unit	1

CONFERENCE ROOMS:	# REUSABLE
10' x 3'-6" table, 10 chairs that should be replaced	1 (except chairs)
8' x 6' pulldown projection screen	1
IN FOCUS" projector 100-240V 2-1A 50-60 HZ	1

QUANTITY COMPARISONS

MANNING DOCUMENT	WALKTHRU
4 - Private Offices	3 - Private Offices
3 - Workstations	1 - Workstations

ORGANIZATION:

LGCBA

Moving from Building 982

SYSTEMS FURNITURE:

HON Simplicity

Panels: Mauve

Worksurface: Oak Laminate

Storage: Beige

Trim: Beige

STATION SIZE:	# REUSABLE	# NOT REUSABLE
6' x 10'-6"		6
6'-6" x 5'		1
6'-6" x 10'-6"		6

SEATING:	# REUSABLE	# NOT REUSABLE
Task Seating	10	2

STORAGE UNITS:	# REUSABLE	# NOT REUSABLE
42" wide lateral file, 5 high (putty)	2	
36" wide lateral file, 5 high (putty)	1	
36" wide lateral file, 4 high (putty)	4	

PRIVATE OFFICES:	# REUSABLE
MANAGER:	1

36" X 72" desk, 24" x 48" filler, 24" x 72" credenza w/ hutch
U shaped desk, 24" x 72" credenza w/ hutch, 36"w bookcase,
24" x 36" table, (3) guest chairs

QUANTITY COMPARISONS (COMBINED TOTALS FOR LGCBA, B & C)

MANNING DOCUMENT	WALKTHRU
(SEE LGCBC FOR COMBINED TOTALS FOR LGCGA,B &C)	(SEE LGCBC FOR COMBINED TOTALS FOR LGCGA,B &C)

ORGANIZATION:

LGCBB

Moving from Building 982

SYSTEMS FURNITURE #1:

HON Simplicity

Panels: Mauve
Worksurface: Oak Laminate
Storage: Beige
Trim: Beige

STATION SIZE:	# REUSABLE	# NOT REUSABLE
5'-6" x 10'-6"		1
8' x 8'		2
8' x 10'		2
8'-6" x 9'		3
8'-6" x 11'		1
9' x 10'		2

SYSTEMS FURNITURE #2:

Steelcase Avenir

Panels: Beige
Worksurface: Beige
Storage: Dark Grey
Trim: Beige

STATION SIZE:	# REUSABLE	# NOT REUSABLE
7'-6" x 10'	1	
8' x 10'	2	

SEATING:	# REUSABLE	# NOT REUSABLE
Task Seating	13	15

STORAGE UNITS:	# REUSABLE	# NOT REUSABLE
36" wide lateral file, 5 high (putty)	1	
36" wide lateral file, 4 high (putty)	20	

ORGANIZATION:

LGCBB (cont.)

Moving from Building 982

PRIVATE OFFICES:	# REUSABLE
FLIGHT CHIEF:	1
36" x 72" desk with R return, 24" x 72" credenza, 24" x 72" credenza with hutch, sofa	

QUANTITY COMPARISONS (COMBINED TOTALS FOR LGCBA, B & C)

MANNING DOCUMENT	WALKTHRU
(SEE LGCBC FOR COMBINED TOTALS FOR LGCBA,B &C)	(SEE LGCBC FOR COMBINED TOTALS FOR LGCBA,B &C)

ORGANIZATION:

LGCBC

Moving from Building 982

SYSTEMS FURNITURE:

HON Simplicity

Panels: Mauve

Worksurface: Oak Laminate

Storage: Beige

Trim: Beige

STATION SIZE:	# REUSABLE	# NOT REUSABLE
8' x 10'-6"		1
8'-6" x 10'-6"		1
8'-6" x 12'		1
8'-6" x 13'		1

SEATING:	# REUSABLE	# NOT REUSABLE
Task Seating	4	4

STORAGE UNITS:	# REUSABLE	# NOT REUSABLE
36" wide lateral file, 4 high (putty)	5	

PRIVATE OFFICES:	# REUSABLE
ORDERLY:	1
30" x 72" double pedestal desk, 36" wide lateral file, 5 high	

QUANTITY COMPARISONS (COMBINED TOTALS FOR LGCBA, B & C)

MANNING DOCUMENT	WALKTHRU
2 - Private Offices	3 - Private Offices
25 - Workstations	31 - Workstations

ORGANIZATION:

LGCP

Moving from Building 982

SYSTEMS FURNITURE:

Haworth Unigroup

Panels: Blue

Worksurface: Oak Laminate

Storage: Blue/Grey

Trim: Grey

STATION SIZE:	# REUSABLE	# NOT REUSABLE
8' x 6'	8	

SEATING:	# REUSABLE	# NOT REUSABLE
Task Seating	10	4

STORAGE UNITS:	# REUSABLE	# NOT REUSABLE
36" wide lateral file, 5 high (putty)	3	
36" wide lateral file, 4 high (putty)	1	
36" wide lateral file, 4 high (light grey)	1	
36" wide storage cabinets, 80" h (black)	3	

PRIVATE OFFICES:	# REUSABLE
No Freestanding Desks	

QUANTITY COMPARISONS (COMBINED WITH LGCPM)

MANNING DOCUMENT	WALKTHRU
2 - Private Offices	3 - Private Offices
16 - Workstations	14 - Workstation

ORGANIZATION:

LGCPM

Moving from Building 982

SYSTEMS FURNITURE:

HON Simplicity

Panels: Mauve

Worksurface: Oak Laminate

Storage: Beige

Trim: Beige

STATION SIZE:	# REUSABLE	# NOT REUSABLE
6' x 8'-6"		3
6'-6" x 8'-6"		1
7' x 7'-6"		1
7' x 8'-6"		1

SEATING:	# REUSABLE	# NOT REUSABLE
Task Seating	9	1

PRIVATE OFFICES:	# REUSABLE
FLIGHT CHIEF:	1
36" X 72" double pedestal desk, 24" x 72" credenza, 36" x 72" conference table/chairs	
MANAGER:	1
36" X 72" double pedestal desk, 24" x 72" credenza w/ hutch, (2) 30"w bookcases	
SUPERVISOR:	1
30" X 60" double pedestal desk, 30" x 72" return, 36"w storage cabinet	

QUANTITY COMPARISONS (COMBINED WITH LGCP)

MANNING DOCUMENT	WALKTHRU
(SEE LGCP TOTALS)	(SEE LGCP TOTALS)

ORGANIZATION:

SW/BZ

Moving from Building 982

SYSTEMS FURNITURE:

No Systems Furniture

SEATING:	# REUSABLE	# NOT REUSABLE
Task Seating	2	

PRIVATE OFFICES:	# REUSABLE
DIRECTOR:	1
36" X 72" double pedestal desk, 24" x 72" credenza, (2) mobile vertical files, (2) lounge chairs	
OFFICE MGR:	1
30" X 72" desk with R return, wall mounted overhead, 36"w	

QUANTITY COMPARISONS

MANNING DOCUMENT	WALKTHRU
2 - Private Offices	2 - Private Offices
0 - Workstations	0 - Workstations

ORGANIZATION:

SVC/SVF

Moving from Building 880

SYSTEMS FURNITURE #1:

Steelcase Avenir

Panels: Beige

Worksurface: Beige

Storage: Dark Grey

Trim: Dark Grey

STATION SIZE:	# REUSABLE	# NOT REUSABLE
7'-6" x 7'	1	

SYSTEMS FURNITURE #2:

Centercore Quarter Quad (not confirmed)

Panels: Tan Weave

Worksurface: Cherry Wood Laminate

Storage: Cherry Wood Laminate

Trim: Black/Cherry Wood Laminate

STATION SIZE:	# REUSABLE	# NOT REUSABLE
2' x 6'-6"		1
5' x 8'-6"		1
6' x 5'-6"		1
6' x 6'		5
6' x 6'-6"		1
6' x 7'		2
6' x 7'-6"		1
6' x 8'		3
6' x 8'-6"		1
6' x 9'		1
6' x 10'		3

SEATING:	# REUSABLE	# NOT REUSABLE
Task Seating	14	8

ORGANIZATION:

SVC/SVF (cont.)

Moving from Building 880

STORAGE UNITS:	# REUSABLE	# NOT REUSABLE
18" wide vertical file, 2 high (putty)	2	
18" wide vertical file, 5 high (putty)	4	
Secured Vault - 21"w x 32"d x 48"h (putty)	1	
30" wide lateral file - 5 high (putty)	1	
36"w tall storage cabinet		2
36" wide wood laminate lateral file, 4 high		5
36" wide lateral file - 5 high (putty)	1	
36" wide lateral file - 4 high (putty)	1	

PRIVATE OFFICES:	# REUSABLE
CHIEF:	1
36" X 72" desk, 24" x 48" R filler, 24" x 72" credenza, U shaped desk, 36" x 72" conference table/chairs, (2) 36"w bookcases, (2) 36"w hinged door units, 36"w 2 drawer lateral file	
PRIVATE OFFICE (UNKNOWN OCCUPANT)	1
30" X 72" desk, 36"w tall storage cabinet	
DESK UNIT USED AS WORKSTATION IN OPEN OFFICE	1
30" x 72" desk, 24" x 42 Right Return (KNOLL mfg.)	

QUANTITY COMPARISONS (includes SVF and SVF-IT)

MANNING DOCUMENT	WALKTHRU
7 - Private Offices	2 - Private Offices
10 - Workstations	1 - Freestanding desk used as workstation
	21 - Workstations

ORGANIZATION:

21SVS

Moving from Building 1042

SYSTEMS FURNITURE #1:

Haworth Unigroup

Panels: Blue
Worksurface: Light Grey
Storage: Blue/Light Grey
Trim: **Light** Grey

STATION SIZE:	# REUSABLE	# NOT REUSABLE
4' x 8' reception station w/ counter	2	
8' x 8' reception station w/ counter	1	

SYSTEMS FURNITURE #2:

HON Simplicity

Panels: Grey
Worksurface: Grey
Storage: Grey
Trim: Grey

STATION SIZE:	# REUSABLE	# NOT REUSABLE
6' x 9'		1
8' x 8'-6"		1

SYSTEMS FURNITURE #3:

Steelcase ?*

Panels: Blue
Worksurface: Light Grey
Storage: Light Grey
Trim: Light Grey

STATION SIZE:	# REUSABLE	# NOT REUSABLE
8'-6" x 8'-6"		1 *

* Missing all top caps and raceway covers to be able to identify.
Was located in a private office.

(NOT REUSABLE ON ACCOUNT OF CONDITION)

ORGANIZATION:

21SVS (cont.)

Moving from Building 1042

SYSTEMS FURNITURE #4:

Knoll Equity

Panels: Plum

Worksurface: Mahogany

Storage: Black

Trim: Black

STATION SIZE:	# REUSABLE	# NOT REUSABLE
9'-6" x 12' (all tall panels w/door)	1	
10' x 10' (all tall panels w/door)	3	
10' x 10' (all tall panels w/o door)	1	

SEATING:	# REUSABLE	# NOT REUSABLE
Task Seating	16	2

STORAGE UNITS:	# REUSABLE	# NOT REUSABLE
36" wide lateral file, 5 high (light grey)	4	
18"w x 26-1/2"d vertical file, 5 high (putty)	5	
18"w x 26-1/2"d vertical file, 4 high (light grey	1	
Secured Vault - 18" x 28"d, 4 high (grey)	1	

PRIVATE OFFICES:	# REUSABLE
CC:	1
36" x 72" double pedestal desk, 24" x 72" credenza, 36" bookcase, 36" storage unit, loveseat, sofa	
CD:	1
36" x 72" double pedestal desk w/ 24" x 48" right return, 36"w lateral file w/ bookcase above	
FLIGHT CHIEF:	1
36" x 72" desk, 24" x 48" R filler, 24" x 72"credenza, 36" dia. Table/chairs, 36"w bookcase, 36"w 2 high lateral file tall storage cabinet	
1ST SARGEANT:	1
36" x 72" desk, 24" x 48" R filler, 24" x 72"credenza, 36"w	

ORGANIZATION:

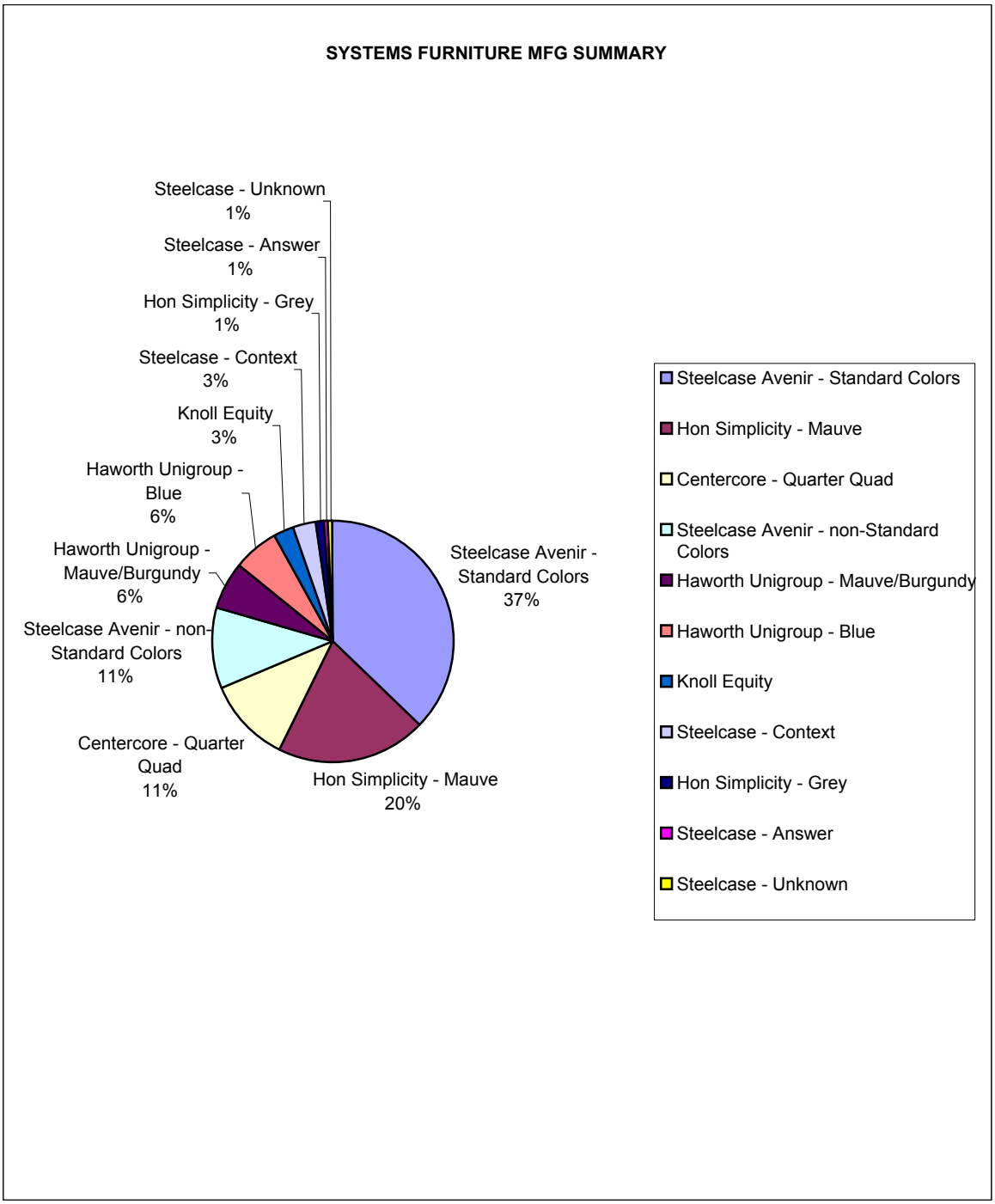
21SVS (cont.)

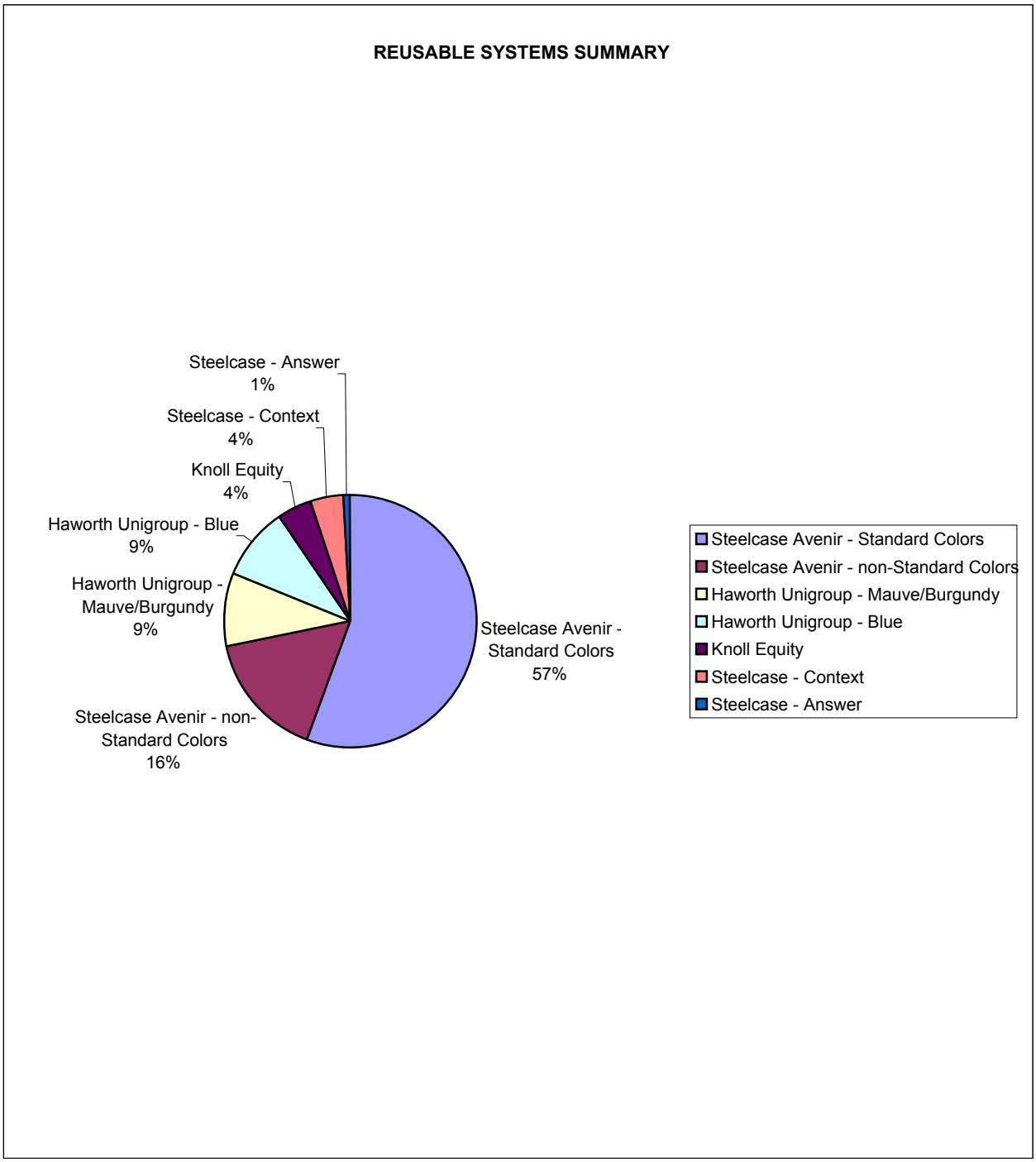
Moving from Building 1042

PRIVATE OFFICES (cont.):	# REUSABLE
THULE SUITE:	1
36" x 72" double pedestal desk, (3) 30"w bookcases	
PRIVATE OFFICE #1 (UNKNOWN OCCUPANT)	1
36" x 72" double pedestal desk, 30"w bookcases, mobile 2 drawer vertical file	
PRIVATE OFFICE #2 (UNKNOWN OCCUPANT)	1
36" x 72" double pedestal desk, 30"w bookcases, 30"w drawer cabinet	

QUANTITY COMPARISONS

MANNING DOCUMENT	WALKTHRU
11 - Private Offices	7 - Private Offices
8 - Workstations	5 - Knoll workstations used as private offices
	5 - Workstations
	1 - Workstation used as private office


SYSTEMS FURNITURE MFG SUMMARY
Steelcase - Unknown 1%
Steelcase - Answer 1%
Hon Simplicity - Grey 1%
Steelcase - Context 3%
Knoll Equity 3%
Haworth Unigroup - Blue 6%
Haworth Unigroup - Mauve/Burgundy 6%
Steelcase Avenir - non-Standard Colors 11%
Centercore - Quarter Quad 11%
Hon Simplicity - Mauve 20%
Steelcase Avenir - Standard Colors 37%
Steelcase Avenir - Standard Colors
Hon Simplicity - Mauve
Centercore - Quarter Quad
Steelcase Avenir - non-Standard Colors
Haworth Unigroup - Mauve/Burgundy
Haworth Unigroup - Blue
Knoll Equity
Steelcase - Context
Hon Simplicity - Grey
Steelcase - Answer
Steelcase - Unknown


REUSABLE SYSTEMS SUMMARY
Steelcase - Answer 1%
Steelcase - Context 4%
Knoll Equity 4%
Haworth Unigroup - Blue 9%
Haworth Unigroup - Mauve/Burgundy 9%
Steelcase Avenir - non-Standard Colors 16%
Steelcase Avenir - Standard Colors 57%
Steelcase Avenir - Standard Colors
Steelcase Avenir - non-Standard Colors
Haworth Unigroup - Mauve/Burgundy
Haworth Unigroup - Blue
Knoll Equity
Steelcase - Context
Steelcase - Answer

SUMMARY OF NET REQUIREMENTS FOR SYSTEMS/OFFICE FURNITURE (NON-REUSABLE PRODUCT REMOVED)

Shaded quantities show groups that will be reusing their existing product while groups with an * will be pooling their systems product to go into a General Inventory to be used where needed to offset negative net quantities (see following page). As a general rule, all groups will reuse their own existing private office furniture.

	WORKSTATIONS			PRIVATE OFFICES		
BASE BID	EXISTING	REQUIRED	NET	EXISTING	REQUIRED	NET
***LGCCA**	0	13	**-13**	0	1	**-1**
***LGCCB**	0	13	**-13**	2	1	**1**
***LGCZB**	0	16	**-16**	2	2	**0**
***MXG**	0	5	**-5**	6	6	**0**
***SMF**	0	33	**-33**	1 + 8**	6	**3**
21SW-MOM	20	19	**1**	0	5	**-5**
EEO/MEO	7	0	**7**	0***	5	**-5**
SFS/SFA	11	10	**1**	0	4	**-4**
LGC	0	3	**-3**	3	4	**-1**
***LGCBA/B/C**	0	25	**-25**	3	2	**1**
***LGCP/PM**	0	16	**-16**	3	2	**1**
SW/BZ	0	0	**0**	2	2	**0**
	38	**153**	**-115**	**30**	**40**	**-10**
OPTION BID						
***SVC/SVF**	0	10	**-10**	2 + 1****	7	**-4**
21-SVS	3	8	**-5**	12	11	**1**
	41	**171**	**-130**	**45**	**58**	**-13**

* Existing product from these groups to go into General Inventory to be used where needed.

** This group has (8) L and U-shaped desks that could be used in private offices.

*** This group will reuse their workstations in the private offices.

****This group has an L-shaped desk with hutch that could be used in a private office.

NOTE: During the pre-evaluation survey it was discovered that the average station size is only 49.45 square feet versus the 64 square feet (8' x 8' station) that will be required in the new configuration. Existing workstations may need additional product to build out the additional square footage and net quantity shortages may be greater than shown.

SUMMARY OF GENERAL INVENTORY

Pooled from the following groups to be used where needed to offset negative net quantities (see previous page).

PRODUCT FROM:	Steelcase Avenir	Steelcase Answer	Steelcase Context	Haworth Unigroup (Blue)
BASE BID				
LGCCA	16			
LGCCB	16			
LGCZB	16			
MXG	5			
SMF		1	5	
LGCBB	3			
LGCP				8
TOTAL	**56**	**1**	**5**	**8**
OPTION BID				
SVC/SVF	1			
TOTAL	**57**	**1**	**5**	**8**

NOTE: During the pre-evaluation survey it was discovered that the average station size is only 49.45 square feet versus the 64 square feet (8' x 8' station) that will be required in the new configuration. Existing workstations may need additional product to build out the additional square footage and net quantity shortages may be greater than shown.

SUMMARY OF FILING CABINETS

2 DRAWER VERTICAL FILES:	BASE BID	OPTION
Putty	12	2
Dk. Grey	1	

4 DRAWER VERTICAL FILES:	BASE BID	OPTION
Dk. Grey	4	2
Black	2	
Putty	0	1

5 DRAWER VERTICAL FILES:	BASE BID	OPTION
Putty	1	9
Dk. Grey	1	

TALL STORAGE CABINETS	BASE BID	OPTION
Putty	4	
Dk. Grey	3	
Black	3	

2 DRAWER LATERAL FILES:	BASE BID	OPTION
Dk Grey - 36"w	2	
Black - 36"w	1	
Dk Grey - 30"w	1	

3 DRAWER LATERAL FILES:	BASE BID	OPTION
Dk. Grey - 36"w	1	

4 DRAWER LATERAL FILES:	BASE BID	OPTION
Putty - 36"w	30	1
Dk Grey - 42"w	3	
Dk Grey - 36"w	2	
Lt. Grey - 36"w	2	
Putty - 30"w	2	
Putty - 42"w	1	

5 DRAWER LATERAL FILES:	BASE BID	OPTION
Dk Grey - 36"w	52	
Dk Grey - 42"w	9	
Putty - 36"w	6	1
Putty - 42"w	6	
Lt. Grey - 36"w	0	4
Dk Taupe - 36"w	1	
Putty - 30"w	0	1

SUMMARY OF SEATING

EXISTING REUSABLE TASK CHAIRS: 185*

EXISTING NOT REUSABLE TASK CHAIRS: 52

GUEST SEATING NOT PART OF THIS PRE-EVALUATION

*Seating included in the Reusable quantities appeared of a newer style, but the majority were not fully ergonomic and adjustable.

SUMMARY OF CONFERENCE ROOMS

LGCZB

10' X 3'-6" table with sled base chairs/no swivel (replace chairs)
4' x 8' whiteboard
8' x 6' pull down projection screen
"IN FOCUS" projector LP750

21 MXG

12' X 3'-6" table with 30"x36" audio/visual table, 9 chairs
6' x 5' whiteboard with doors
8' x 6' pull down projection screen
"3M" MP8650A LCD Projector
  50-60 HZ
  100-240V

SMF

15' X 3'-6" table, audio/visual stand, mobile ped, 12 swivel chairs, 14 sled base chairs
10' x 3'-6" table, 6 sled base chairs
8' x 3'-6" table, 8 sled base chairs
8' x 3'-6" table, 6 sled base chairs
  Source Selection Work Centers:
24" x 36" (Steelcase to match systems)
4' x 8' whiteboard
5' x 5' whiteboard with doors
8' x 6' pull down projection screen
IN FOCUS" LP725 projector

MEO

(4) 24" x 60" tables w/ 17 chairs
4' x 8' whiteboard

LGC

10' x 3'-6" table, 10 chairs that should be replaced
8' x 6' pulldown projection screen
IN FOCUS" projector
    100-240V
    2-1A
    50-60 HZ

ATTACHMENT 6 – INTERIOR FINISH LIST			
ADMINISTRATIVE - NEUTRAL			
Item	**PRODUCT / COLOR / SPECS**	**SIZE**	**Notes**
Walk-off flooring - entry	Flexco	12"x12"x3/8"	
	Flex-Tuft	12"x30'x3/8"	
	Color: FT-1 Tweed		
Must read the FEP Interior Design section on carpet to understand where and how to use all the carpet options.			
Carpet Basic Pattern:	Shaw	24"x24"	
	Chit Chat ew sq #59249		
	Color: Birch #49100		
Carpet Bold Pattern 1:	Shaw	24"x24"	
	Stereo ew sq #59250		
	Color: Surf #50100		
Carpet Bold Pattern 2:	Shaw	24"x24"	
	Groovy ew sq #59251		
	Color: Surf #51100		
Carpet Solid 1:	Shaw		**solid carpets can come 6' at a 150sqyrd min.**
	Visual Accents III sq		
	Color: Millenium #41481		
	Product # 59041	18" x 18"	
	Permabac backing		
	Product # 59133	24" x 24"	
	Ecoworx backing		

Item	PRODUCT / COLOR / SPECS	SIZE	Notes
Carpet Solid 2:	Shaw		
	Visual Accents III sq		**solid carpets can come 6' at a 150sqyrd min.**
	Color: Mushroom #41150		
	Product # 59041	18" x 18"	
	Permabac backing		
	Product # 59133	24" x 24"	
	Ecoworx backing		
Carpet Solid 3:	Shaw		
	Visual Accents III sq		
	Color: Eggplant #41990		
	Product # 59041	18" x 18"	
	Permabac backing		
	Product # 59133	24" x 24"	
	Ecoworx backing		
Rubber Base:	Johnsonite	4"h	
	Color: Fawn #80		
	Rubber 1/8"		
Rubber Tile 1: Medium Neutral	Johnsonite	24" x 24"	primarily use for kitchenette areas that are open in the corridors/aisles
	Color: Fawn #80		use for all stair treads and landings, excluding Lobby that shall be Porcelain Tile
	Texture: Hammered		
Rubber Tile 3: Blue	Johnsonite	24" x 24"	use for areas that are their own space
	Color: Blue Lagoon #92		
	Texture: Hammered		

Item	PRODUCT / COLOR / SPECS	SIZE	Notes
Rubber Tile 4: Purple	Johnsonite	24" x 24"	use for areas that are their own space
	Color: Smolder #164		
	Texture: Hammered		
Paint - multi colored	Multispec #		Only to be used in the lobby, main corridors, and 2nd floor landing.
	Must match existing spray pattern		
All window frames shall be anodized bronze and the door frames shall be painted to match			
To provide more visual appeal the accent paint colors shall be used instead of wallcovering (still maintaining the wallcovering below the chair rails in the CC's offices and the CC's conference rooms)	I.e. maybe in the large open areas paint the outsides of the groups of offices that are just out in the open an accent color		
Paint 1: Painted Doors &/or Wall Accent Neutral	Sherwin Williams #SW6080 Utterly Beige		use this for the training room, CC's offices, and CC's conference room walls
	For Door/Frame: Master Painters Institute (MPI) Gloss Level 5		
	For Accent Neutral: Master Painters Institute (MPI) Gloss Level 4		
Paint 2: General Wall	Sherwin Williams #SW6078 Realist Beige		
	Master Painters Institute (MPI) Gloss Level 4		
Paint 3: Accent Purple	Kwal #8906N Purple Honor		
	Master Painters Institute (MPI) Gloss Level 4		

Item	PRODUCT / COLOR / SPECS	SIZE	Notes
Paint 4: Accent Blue	Kwal #8516A Temptress		
	Master Painters Institute (MPI) Gloss Level 4		
Paint 5: Painted Ceiling	Kwal #CW051W Solo White		
	Master Painters Institute (MPI) Gloss Level 4		
Vinyl Wallcovering 1: Purple	JM Lynn	54"w	Use in the conference rooms below the chair rail
	Pattern: Etruscan		
	Color: #ETR-1125 Stealth		
	Type II		
Vinyl Wallcovering 2: Neutral	Source One	54"w	Use in the commander's offices below the chair rail
	Pattern: Darjeelling		
	Color: ZVKP-06 Bark		
	Type II		
Tile: Wall &/or Floor	American Olean	6"x6"	For the Lobby and front Corridors use the 12"x12" tiles unpolished with the semi-polished, as an accent, creating a block pattern to match the American Olean tile pattern #0805.
	Pattern: Borgo Antico	12"x12"	For the water fountain walls and the restroom walls use the 6"x6" unpolished tiles.
	Color: #BA01 Olina	6"x12"	For the planter walls use the 6"x6" unpolished with accents of the semi-polished
	Unpolished or Semi-polished	Straight Base	For the restroom floors use the combination of all three sizes, unfinished, to create a pattern to match the American Olean pattern #2710.
	Grout		
	Mapei #11 Sahara Beige		

Item	PRODUCT / COLOR / SPECS	SIZE	Notes
Tile: Janitor's closet walls	American Olean		
	Bright & Matte	6"x6"	
	Color: #51 Matte Vanilla	Cove Base	
	Grout color to be dark		
Solid Surface: Light Neutral	Hartson Kennedy		To be used for the window sills, restroom counters, and kitchenette areas
	Cerata		
	Color: #DG39 Desert Sand		
Solid Surface: Dark Neutral	Corian		To be used for the transaction counter tops of the built-in reception areas only, not the worksurface of the desk
	Color: Canyon (E)		
Solid Surface: solid	Creamy color to coordinate with color scheme.		To be used for the worksurface of the build in reception areas and the restroom integral sinks
Counter Laminate	**If we have to use laminate for the counter tops**		
	Formica		To be used for the restroom counters and kitchenette areas
	Pattern: #7707-58 Bungee.net		
	Matte Finish		
	Formica		To be used for the transaction counter tops and the worksurfaces of the built-in reception areas.
	Pattern: #7336-58 Varnish Crayon		
	Matte Finish		
Cabinet Laminate: Solid	Formica		used for the kitchenette areas and the built-in copy/fax areas
	Pattern: #921-58 Birch		
	Matte Finish		

Item	PRODUCT / COLOR / SPECS	SIZE	Notes
Cabinet: wood	Cherry color to match the existing cherry stain		used for the built-in reception areas and wood trim as specified.
Accordion doors	small simple pattern, color to match/coordinate with the neutral wall paint		
Wall partitions	small to medium simple pattern, color to match/coordinate with the neutral wall paint		
Restroom Stall Partition	All standard stall doors to swing out of the stall.		
	solid plastic, color to coordinate with the neutral wall paint		
Window Blinds	color to match the window mullion, anodized bronze		

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