DEPARTMENT OF THE ARMY
Omaha District, Corps of Engineers
106 South 15th Street
Omaha, Nebraska 68102-1618

:NOTICE: Failure to acknowledge : :all amendments may cause rejec- : :tion of the offer. See FAR :52.215-1 of Section 00100 :	Solicitation No. DACA45 02 R 0004 Date of Issue: 23 FEB 2002 Date of Receiving Proposals: 27 MAR 2002

Amendment No. 0003
20 March 2002

SUBJECT: Amendment No. 0003 to specification and drawings for Construction of SBIRS-MISSION CONTROL STATION BACK-UP, GLEN 00-3003, SCHRIEVER AFB, COLORADO.
Solicitation No. DACA45 02 R 0004.

TO: Prospective Offerors and Others Concerned

1. The specifications and drawings for subject project are hereby modified as follows (revise all specification indices, attachment lists, and drawing indices accordingly).

a. Specifications. (Descriptive Changes.)

(1) **Amendment No. 0002, Page 2**, paragraph 1.a, Item (10) for Section 15070A, line 1, delete "paragraph 1.1.2" and substitute "paragraph 1.2.1".

(2) **Standard Forms SF1442, (Section) 00010**, delete pages 00010-1 through 00010-6 and substitute attached revised Pages 00010-1 through 00010-6. Items changed include Item 13.B on Page 00010-1 (Offer guarantee is not required), Pricing Schedule Option O-1 (Page 00010-3) and Note 4 A (Page 00010-4) [Chiller designation "PC-3" was changed to "PC-1C"].

(3) **Section 00100, Page 7**, paragraph 8, SMALL BUSINESS SIZE STANDARD, line 2, delete "$27.5 million" and substitute "$28.5 million".

(4) **Section 00110, Page 7**, paragraph 1.6.6.3 a., last line, delete "(v) 10.0% of planned subcontracting dollars with Historical Black Colleges/Minority Institutions".

(5) **Section 01040, Page 2**, paragraph 1.1.4, delete "mylar drawings and suitable for microfilming" and substitute:

"electronic CADD files or high quality reproducible drawings".

(6) **Section 01040, Page 3**, paragraph 1.2, line 10, after "Microstation.", insert:

"The Omaha District will furnish a CD of CADD (read-write) contract drawings in the software language specified in paragraph PROCEDURE below. This is the

software language required by the Using Service."

(7) **Section 01040, Pages 3 and 4**, delete paragraphs 1.4.1, 1.4.2 and 1.5 in their entirety and substitute:

"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". As-Built preparation process is provided in paragraph As-Built Preparation below. Preliminary drawings shall consist of 15 percent of total project drawings. 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" will be accomplished on layer 63 of the drawing file. The Preliminary Drawings shall consist of one (1) set of CADD files on a CD and one (1) full-size set of the Black-Line Drawings. One (1) set of CADD files on a CD shall be submitted to the Omaha District Office (ATTN: CENWO-ED-DI, Jim Janicek). One (1) full-size 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 on AutoCADD (Version 2002) without "clouding". As-Built preparation process is provided in paragraph As-Built Preparation below. The Final Drawings shall include all changes. The Final Drawings 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.) One (1) set of CADD files on a CD shall be submitted to the Omaha District Office (ATTN: CENWO-ED-DI, Jim Janicek). Send the following documents to the COR:

a) One (1) set of CADD files on CD (folder name containing as-built files shall be designated "AS-BUILTS" on each CD-ROM). Both CD case and CD 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) One (1) full-size set of mylar As-Built Drawings, along with all red-lined hard copy drawings prepared by the Contractor during construction to the COR.

COR will forward one (1) full-size set of drawings along with CD 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 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.
f. All unnecessary information outside the border shall be deleted.
g. All files shall be purged.
h. All xrefs shall be included in directory.
i. All fonts used shall be included with the set, even if it is the standard AutoCAD fonts. Fonts are provided in paragraph Standard AutoCAD fonts.
j. An ASCII text file shall be provided with the following information: a brief history of how the files were created, if they were converted from MicroStation, reference file paths that should be added to MS_RFDIR, the name of your font resource file, 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.

1.4.3.2 Standard AutoCADD Fonts

ARCHSTYL.SHX	bgothl.ttf	cibt____.pfb
AU101S01.SHX	bgothm.ttf	cibt____.pfm
AU102S01.SHX	compi.ttf	cobt____.pfb
bigfont.shx	comsc.ttf	cobt____.pfm
bold.shx	dutch.ttf	copying.gs
complex.shx	dutchb.ttf	euro____.pfb
dim.shx	dutchbi.ttf	euro____.pfm
gothice.shx	dutcheb.ttf	eur_____.pfb
gothicg.shx	dutchi.ttf	eur_____.pfm
gothici.shx	monos.ttf	fontmap.bd
greekc.shx	monosb.ttf	fontmap.ps
greeks.shx	monosbi.ttf	outline
HELVETIC.SHX	monosi.ttf	par_____.pfb
isocp.shx	stylu.ttf	par_____.pfm
isocp2.shx	swiss.ttf	romb____.pfb
isocp3.shx	swissb.ttf	romb____.pfm
isoct.shx	swissbi.ttf	romi____.pfb
isoct2.shx	swissbo.ttf	romi____.pfm
isoct3.shx	swissc.ttf	rom_____.pfb
italic.shx	swisscb.ttf	rom_____.pfm
italicc.shx	swisscbi.ttf	sasbo___.pfb
italict.shx	swisscbo.ttf	sasbo___.pfm
monotxt.shx	swissci.ttf	sasb____.pfb
MROMANS.SHX	swissck.ttf	sasb____.pfm
msimplex.shx	swisscki.ttf	saso____.pfb
outline.shx	swisscl.ttf	saso____.pfm
romanc.shx	swisscli.ttf	sas_____.pfb
romand.shx	swisse.ttf	sas_____.pfm

romans.shx	swisseb.ttf	suf_____.pfb
romant.shx	swissek.ttf	suf_____.pfm
scriptc.shx	swissel.ttf	teb_____.pfb
scripts.shx	swissi.ttf	teb_____.pfm
simplex.shx	swissk.ttf	tel_____.pfb
special.shx	swisski.ttf	tel_____.pfm
syastro.shx	swissko.ttf	te______.pfb
symap.shx	swissl.ttf	te______.pfm
symath.shx	swissli.ttf	uglyr.gsf
symeteo.shx	umath.ttf	
symusic.shx	vinet.ttf	
txt.shx		

1.5 PROCEDURE

Within 30 days after Notice to Proceed, the Government will furnish the Contractor one full size set of contract drawings on bond paper. One (1) CD-ROM containing the contract drawings (read-write CADD files) and CADD standards in AutoCADD (Version 2002) format, for use in the preparation of As-Built Drawings by the Contractor, will be forwarded to the Resident Engineer. This CD-ROM will then be furnished to the Contractor after signed receipt to the Resident Engineer. The Contractor shall 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).**"

(8) **Section 01330**, Attachment to the submittal register, insert the attached submittal register for Section 09965A.

(9) **Section 03300, Page 16**, following paragraph 2.9.1, add:

"2.10 CONCRETE WITH HARDENER

Paint coating referenced on the Architectural Room Finish drawing for use under Raised Computer Floors shall be as follows:

Paint coating shall be a penetrating clear concrete sealer for hardening and dust control. Sealer shall be applied to concrete sub-floor, concrete sidewalls, data chase walls and data chase floors. Coating shall be Symons, "Cure and Hard" or "Flourosilicate" or an approved equal. Product shall be formulated for use in computer/data facilities and product data shall be submitted for approval."

(10) **Section 09680A, Page 6**, paragraph 2.1.3 h, lines 1 and 2, delete "**********per square meter" and substitute "per 10 cm".

(11) **Section 09680A, Page 7**, paragraph 2.1.4 h, lines 1 and 2, delete "**********per square meter" and substitute "per 10 cm".

(12) **Section 10270A, Page 6**.

(a) Paragraph 2.1.2, line 1, delete "title" and substitute "tile"; Also, line 2, after "Floor panels", insert:

"for all other finishes".

(b) Paragraph 2.1.2.2, delete text of paragraph in its entirety and substitute:

"Carpet surfacing shall be installed freelay with release adhesive as recommended by the carpet manufacturer. Carpet tile shall be as specified in Section 09680A CARPET. Color and pattern shall be as specified in Section 09915 COLOR SCHEDULE."

(13) **Section 15400, Page 43**, paragraph 3.10, Item P-5 LAVATORY, line 2 of fixture description, before "counter top, rectangular", insert: "shelf back or".

(14) **Section 15400, Page 45**, paragraph 3.10: Item P-10 Emergency Eye Wash, Item title, delete "Emergency Eye Wash:" and substitute:

"Emergency Eye Wash and Shower: Shower control shall be 25 mm (1 inch) or 40 mm (1-1/2 inch) stay-open type control valve. Unit shall be corrosion-resisting steel or enameled cast iron and shall be wall mounted."

(15) **Section 16375A, Page 18**.

(a) Paragraph 2.9.1.1, lines 1 thru 6, delete first delete first two sentences reading "Metal-enclosed interrupter switchgear ... publications listed." and substitute:

"Metal-enclosed interrupter switchgear consisting of automatic, visible blade disconnects shall be provided for disconnection of incoming circuits. Metal-enclosed interrupter switchgear shall comply with IEEE C37.30 for load-interrupter switches.".

(b) Paragraph 2.9.1.1 a., lines 1 thru 4, delete "Fuse continuous ... limiting type." Sentence should read:

"a. "Ratings. Switch ratings at 60 Hz shall be:".

(16) **Section 16375A, Pages 22 and 23**, paragraph 2.9.4, delete second and third sentences reading "The swithchgear ... sheet E5.01." and substitute:

"The switchgear shall be configured with 2 incoming compartments for loop-feed arrangement, equipped with non-reclosing vacuum-type interrupters or circuit breakers as indicated on sheet E5.01. The outgoing compartments shall be provided with non-reclosing vacuum-type interrupters or circuit breakers as indicated on sheet E5.01.".

(17) **Section 16415A, Page 18**.

(a) Paragraph 2.1, delete third sentence reading "Enclosures shall be steel." and substitute:

"Enclosures shall be either steel or aluminum."

(b) Paragraph 2.1.1, to the end of the paragraph, add:

"Internal ground busses shall be provided as required."

(18) **Section 16415A, Page 37**, paragraph 2.26, line 4, after "except as indicated.", insert:

"Transformer windings and conductors shall be copper. Aluminum shall not be used."

(19) **Section 16415A, Page 38**, paragraph 2.26.1 a. 600 Volt or Less Primary, delete first sentence reading "NEMA ST 20, UL 506, general purpose ... cast coil,." and substitute:

"NEMA ST 20, UL 506, general purpose, dry-type, self-cooled: ventilated for indoor use; non-ventilated or sealed for outdoor use.".

(20) **Section 16710A, Page 6**.

(a) Paragraph 1.8.1, line 3, delete "A licensed copy" and substitute "Two licensed copies".
(b) Paragraph 1.8.2, line 3, delete "A licensed copy" and substitute "Two licensed copies".

b. Specifications (New). Add specification pages as noted below. The pages are issued with this amendment.

Pages Added
Section 09965A, Pages 1 thru 16

c. Drawings (Not Reissued). The following sheets of drawing code AF 131-90-01 are revised as indicated below with latest revision date of 20 March 2002. These drawings are not reissued with this amendment.

(1) **Sheet C1.05**, SITE LAYOUT PLAN - B, outside of the Construction Fence (CF), delete note reading "FIELD SEEDED AREA" (3 places).

(2) **Sheet C1.06**, SITE LAYOUT PLAN - C, outside of the Construction Fence (CF), delete note reading "FIELD SEEDED AREA" (3 places).

(3) **Sheet A6.01**, NOTE:, note 2, lines 2 and 3, delete '09900 COLOR SCHEDULE. COLOR SHALL BE "GRAY"' and substitute:

"03300 CAST-IN-PLACE STRUCTURAL CONCRETE, PARAGRAPH: CONCRETE WITH HARDENER".

2. This amendment is a part of the proposing papers and its receipt shall be acknowledged on the new Standard Form 1442. All other conditions and requirements of the specifications remain unchanged. If the proposals have been mailed prior to receiving this amendment, you will notify the office where proposals are received, in the specified manner, immediately of its receipt and of any changes in your proposal occasioned thereby.

a. Hand-Carried Proposals shall be delivered to the U.S. Army Corps of Engineers, Omaha District, Contracting Division (Room 301), 106 South 15th Street, Omaha, Nebraska 68102-1618.

b. Mailed Proposals shall be addressed as noted in Item 8 on Page 00010-1 of Standard Form 1442.

3. Offers will be received until 3:00 p.m., local time at place of receiving proposals, 27 MAR 2002.

Attachments:
Standard Form SF1442, Pages 00010-1 through 00010-6
Section 09965A Submittal Register
Spec Pages listed in 1.b. above

U.S. Army Engineer District, Omaha
Corps of Engineers
106 South 15th Street
Omaha, Nebraska 68102-1618

20 March 2002
DRL/4547

SOLICITATION, OFFER, AND AWARD (Construction, Alteration, or Repair)	1. SOLICITATION NO.	2. TYPE OF SOLICITATION	3. DATE ISSUED	PAGE OF PAGES
	DACA45 02-R-0004	☐ SEALED BID (IFB) ☒ NEGOTIATED (RFP)	13 FEB 2002	1 OF 6

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	8. ADDRESS OFFER TO
U S ARMY ENGINEER DISTRICT, OMAHA 106 South 15th Street Omaha, Nebraska 68102-1618	CT	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:

SBIRS - MISSION CONTROL STATION BACK-UP
GLEN 00-3003
SCHRIEVER AFB, COLORADO

RETURN WITH PROPOSAL: SECTIONS 00010 (SF1442) AND PRICE PROPOSAL BACKUP INFORMATION (BY CSI DIVISION) AND PROPOSAL INFORMATION IDENTIFIED IN SECTION 00110

OTHER BONDING INFORMATION: SEE SECTION 00700 CONTRACT CLAUSES CLAUSE "PERFORMANCE AND PAYMENT BONDS".

* ITEM 11 : CONTRACTOR TO INSERT COMPLETION TIME
** ITEM 13.A: SEE SECTION 00110 FOR NUMBER OF COPIES

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 27 MAR 2002 (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 90 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 90 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	25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO
	26	☐ 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

Item No.	Description	Quantity	Unit	Amount
	BASIC			
1.	Entire work complete for SBIS Mission Control Station Back-up, excluding options below.	Job	L.S.	$_____
	OPTIONS			
0-1	All work complete to provide packaged air cooled chiller (PC-1C), excluding basic provisions. (See Note 4 below).	Job	L.S.	$_____
0-2	All work complete to provide combination gas-oil fire hot water boiler (B-2), excluding basic provisions. (See Note 4 below).	Job	L.S.	$_____
0-3	All work complete to provide Generator #4 , excluding basic provisions. (See Note 4 below).	Job	L.S.	$_____
0-4	All work complete to provide drycoolers (DC-1 and DC-2), excluding basic provisions. (See Note 4 below).	Job	L.S.	$_____
0-5	All work complete to provide antenna pad and transformers (T6 and T7), excluding basic provisions. (See Note 4 below).	Job	L.S.	$_____
0-6	All work complete to provide Security Lights, excluding basic provisions. (See Note 4 below).	Job	L.S.	$_____
0-7	All work complete to provide security fence, gates, fence turnstile and related grounding, excluding basic provisions. (See Note 4 below).	Job	L.S.	$_____
0-8	All work complete to provide red and black cable trays in the data chase, excluding basic provisions. (See Note 4 below).	Job	L.S.	$_____
0-9	All work complete to provide MP3A and MP3B transformers, excluding basic provisions. (See Note 4 below).	Job	L.S.	$_____
0-10	All work complete to provide a 2nd Generator (#3), excluding basic provisions. (See Note 4 below).	Job	L.S.	$_____

TOTAL AMOUNT (BASIC + OPTIONS) $_____
(in figures)

Notes:

1. See SECTION 00100, INSTRUCTIONS, CONDITIONS, & NOTICES TO BIDDERS for evaluation of options. The Government reserves the right to exercise the options within 90 days after issuance of Notice to Proceed.

2. Prices must be entered for all items of the schedule. Total amounts submitted without prices being entered on individual items will be rejected. 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. A modification to a proposal which provides for a single adjustment to the total amount, should state the application of the adjustment to each respective lump-sum price affected. If the modification is not so apportioned, the single adjustment will be applied to Basic Item No. 1.

4. OPTIONS AND BASIC PROVISONS. SEE DRAWINGS FOR ADDITIONAL INFORMATION.

A. OPTION O-1, AIR COOLED CHILLER (PC-1C)

Basic Contract includes:
- ISOLATION VALVES CAPPED FOR FUTURE CHILLER (PC-1C).
- CIRCUIT BREAKER SPACE IN NH-SBA SWITCHGEAR.
- CONDUITS W/PULLWIRE.

Option O-1 includes:
- PACKAGED AIR COOLED CHILLER (PC-1C).
- CIRCUIT BREAKER IN NH-SBA SWITCHGEAR.
- DISCONNECT SWITCH.
- CONDUCTOR.

B. OPTION O-2, GAS-OIL FIRED HOT WATER BOILER (B-2)

Basic Contract includes:
- ISOLATION VALVES CAPPED FOR FUTURE BOILER (B-2).
- CIRCUIT BREAKER.
- CONDUIT W/PULLWIRE.

Option O-2 includes:
- COMBINATION GAS-OIL FIRED HOT WATER BOILER (B-2).
- DISCONNECT SWITCH.
- CONDUCTOR.

C. OPTION O-3, GENERATOR (#4)

Basic contract includes:
- CIRCUIT BREAKER SPACE IN GENERATOR SWITCHGEAR.
- ISOLATION VALVES CAPPED FOR FUTURE GENERATOR #4.

Option O-3 includes:
- GENERATOR.
- CIRCUIT BREAKER IN GENERATOR SWITCHGEAR.

- BUS DUCT.
- FUEL-OIL PIPING TO GENERATOR #4 (SEE SHT.M2.05)

D. OPTION O-4, DRYCOOLERS (DC-1 AND DC-2)

Basic Contract includes:
- CIRCUIT BREAKER SPACES (2) IN MCC A AND MCC B.
- CONDUITS W/PULLWIRE (2 SETS).
- ISOLATION VALVES CAPPED FOR FUTURE DRYCOOLERS (ON SHT. M4.02).

Option O-4 includes:
- CIRCUIT BREAKERS (2) IN MCC A AND MCC B.
- DISCONNECT SWITCHES (2).
- CONDUCTORS (2 SETS).
- DRYCOOLERS AND PIPING (DC-1 & DC-2) (SEE SHT. M4.02).

E. OPTION O-5, ANTENNA PAD AND TRANSFORMERS (T6 AND T7)

Basic Contract includes:
- CIRCUIT BREAKER SPACES IN NH-SGA AND EH-SGA SWITCHGEAR (2).
- MANHOLE MHP5.
- DUCTBANK FROM BUILDING TO MANHOLE MHP5.
- CONDUCTORS FROM BUILDING TO MANHOLE MHP5 W/15 METERS EXCESS.
- CONDUITS W/PULLWIRES FROM DUCT BANK TO NH-SGA AND EH-SGA SWITCHGEAR.
- CAPPED CONDUIT STUBOUTS BEYOND MANHOLE MHP5 (2 METERS).

Option O-5 includes:
- CIRCUIT BREAKERS IN NH-SGA AND EH-SGA SWITCHGEAR (2).
- 2 TRANSFORMERS (T6 AND T7).
- SWITCHGEAR (ANT-A, ANT-T AND ANT-B).
- 2 PANELS (ANTA AND ANTB).
- CONCRETE PAD.
- CONDUITS BEYOND MANHOLE MHP5 STUBOUTS.
- CONDUCTORS BEYOND MANHOLE MHP5.

F. OPTION O-6, SECURITY LIGHTS*

*DOES NOT INCLUDE ANY WALL MOUNTED LIGHTS OR SIGNAGE FLOODLIGHTS.

Basic contract includes:
- ALL 1 POLE, 20 AMP CIRCUIT BREAKERS.
- CAPPED CONDUIT STUBOUTS W/PULLWIRES 5 METERS FROM BUILDING.

Option O-6 includes:
- ALL LIGHT POLES.
- ALL POLE MOUNTED LIGHTS.
- ALL LIGHTING CONDUCTORS TO POLE MOUNTED LIGHTS.
- ALL LIGHTING CONDUITS BEYOND 5 METERS FROM BUILDING.
- ALL LIGHTING CONTACTORS AND CONTROLS.

G. OPTION O-7, SECURITY FENCE AROUND MCSB

Basic contract includes:
- SIGNAL CONDUIT AND PULLWIRE TO TURNSTILE.
- POWER CONDUIT AND CONDUCTOR TO TURNSTILE.

Option O-7 is as described above in Pricing Schedule above.

H. OPTION O-8, RED AND BLACK CABLE TRAYS

Basic contract includes:
- ALL APPLICABLE GROUNDING PIGTAILS.

Option O-8 is as described above in Pricing Schedule above.

I. OPTION O-9, MP3A AND MP3B TRANSFORMERS

Basic contract includes:
- CIRCUIT BREAKER SPACES IN NH-SGA AND EH-SGA SWITCHGEAR (2).
- CAPPED CONDUIT STUBOUTS W/ PULLWIRE 5 METERS OUT FROM BUILDING.

Option O-9 includes:
- CIRCUIT BREAKERS IN NH-SGA AND EH-SGA SWITCHGEAR (2).
- CONDUIT BEYOND STUBOUTS.
- MP3A AND MP3B CONDUCTORS.
- MP3A AND MP3B CONCRETE PADS (2).
- MP3A AND MP3B TRANSFORMERS (2).
- MP3A AND MP3B DISCONNECT SWITCHES (2).

J. OPTION O-10, 2ND GENERATOR (#3)

Basic contract includes:
- CIRCUIT BREAKER SPACE IN GENERATOR SWITCHGEAR.

Option O-10 includes:
- GENERATOR.
- CIRCUIT BREAKER IN GENERATOR SWITCHGEAR.
- BUS DUCT.

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION: SBIRS MCS, Schriever AFB, Co

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY						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	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		09965A	SD-03 Product Data															
			Accident Prevention Plan		G	RE												
			Respiratory Protection Program		G	ED												
			Ventilation Assessment		G	RE												
			Medical Surveillance Plan		G	ED												
			SD-04 Samples															
			Specification and Proprietary		G	RE												
			Paints															
			Thinners		G	RE												
			SD-06 Test Reports															
			Inspection and Operation Records		G	RE												
			SD-07 Certificates															
			Qualifications and Experience		G	RE												
			Qualified Painting Contractor		G	RE												
			Qualified Coating Thickness		G	RE												
			Gages															

SECTION TABLE OF CONTENTS

DIVISION 09 - FINISHES

SECTION 09965A

PAINTING: EPOXY FLOOR COATING

04/01

-- End of Section Table of Contents --

SECTION 09965A

PAINTING: EPOXY FLOOR COATING
04/01

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 NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z87.1	(1989; Errata; Z87.1a) Occupational and Educational Eye and Face Protection
ANSI Z358.1	(1990) Emergency Eyewash and Shower Equipment

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 1400	(1994) Nondestructive Measurement of Dry Film Thickness of Nonconductive Coatings Applied to a Nonferrous Metal Base

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1910.20	Access to Employee Exposure and Medical Records
29 CFR 1910.94	Ventilation
29 CFR 1910.134	Respiratory Protection
29 CFR 1910, Subpart I	Personal Protective Equipment
29 CFR 1926	Safety and Health Regulations for Construction
40 CFR 262.22	Number of Copies

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

CID A-A-50542	(Rev A) Coating System: Reflective, Slip-Resistant, Chemical-Resistant Urethane for Maintenance Facility Floors

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(1996) U.S. Army Corps of Engineers Safety

and Health Requirements Manual

U.S. DEPARTMENT OF DEFENSE (DOD)

MIL-DTL-24441 (Rev C, Supplement 1) Paint, Epoxy-Polyamide, General Specification for

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70 (1999) National Electrical Code

THE SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC QP 1 (1998) Standard Procedure for Evaluating Qualifications of Painting Contractors

SSPC SP 1 (1982) Solvent Cleaning

1.2 NOT USED

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 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Accident Prevention Plan; G-RE

The Contractor shall submit an Accident Prevention Plan in accordance with the requirements of Section 01 of EM 385-1-1. The plan shall include, but is not limited to, each of the topic areas listed in Appendix A therein and the requirements of paragraph SAFETY AND HEALTH PROVISIONS; each topic shall be developed in a concise manner to include management and operational aspects.

Respiratory Protection Program; G-ED

The Contractor shall submit a comprehensive written respiratory protection program in accordance with 29 CFR 1910.134, and Section 05.E of EM 385-1-1.

Ventilation Assessment; G-RE

The contractor shall submit a plan to provide ventilation assessment as required by paragraph PAINT APPLICATION, subparagraph VENTILATION.

Medical Surveillance Plan; G-ED

The Contractor shall submit a Medical Surveillance Plan as required in paragraph MEDICAL STATUS and provide a statement from the examining physician indicating the name of each employee evaluated and any limitations which will preclude the employee from performing the work required. The statement shall include

the date of the medical evaluation, the physician's name, signature, and telephone number.

SD-04 Samples

Specification and Proprietary Paints; G-RE

The Contractor shall submit samples of all special paint formula, Military, Master Painter Institute, Commercial Item Description, and SSPC paints. For products that are specified to be applied in accordance with the manufacturer's recommendations the Contractor shall submit the paint producers product data sheet or other written instructions for those products. When the required quantity of any type is 189 liters or less, the Contractor shall submit in lieu of the liquid paint sample:

a. A certified test report showing the results of required tests made on the material and a statement that it meets all of the specification requirements.

b. A certified test report showing the results of required tests made on a previous batch of paint produced by the same firm using the same ingredients and formulation except for minor differences necessitated by a color change and a statement that the previous batch met all of the specification requirements. A report of tests on the proposed batch showing the following properties applicable to the material specifications shall be furnished: color, gloss, drying time, opacity, viscosity, weight per gallon (liter), and fineness of grind.

Thinners; G-RE,

Samples shall be submitted of the thinners which are those solvents used to reduce the viscosity of the paint.

SD-06 Test Reports

Inspection and Operation Records; G-RE

The Contractor shall submit records of inspections and operations performed in accordance with paragraph INSPECTION. Submittals shall be made on a daily basis.

SD-07 Certificates

Qualifications and Experience; G-RE

The Contractor shall submit certification pursuant to paragraph QUALIFICATIONS for all job sites. Submittal of the qualifications and experience of any additional qualified and competent persons employed to provide on-site environmental, safety, and health shall also be provided. Acceptance of this submission must be obtained prior to the submission of other required environmental, safety, and health submittal items.

Qualified Painting Contractor; G-RE

The Contractor shall submit a copy of their current SSPC QP 1 certification.

Qualified Coating Thickness Gages; G-RE

Documentation of manufacturer's certification shall be submitted for all coating thickness gages.

1.4 QUALIFICATIONS

Qualifications and experience shall comply with the following.

1.4.1 Certified Professional

The Contractor shall utilize a qualified and competent person as defined in Section 01 of EM 385-1-1 to develop the required safety and health submittal and to provide on-site safety and health services during the contract period. The person shall be a Certified Industrial Hygienist (CIH), an Industrial Hygienist (IH), or a Certified Safety Professional (CSP) with a minimum of 3 years of demonstrated experience in similar related work. The Contractor shall certify that the Certified Industrial Hygienist (CIH) holds current and valid certification from the American Board of Industrial Hygiene (ABIH), that the IH is considered board eligible by written confirmation from the ABIH, or that the CSP holds current and valid certification from the American Board of Certified Safety Professionals. The CIH, IH, or CSP may utilize other qualified and competent persons, as defined in EM 385-1-1, to conduct on-site safety and health activities as long as these persons have a minimum of 2 years of demonstrated experience in similar related work and are under the direct supervision of the CIH, IH, or CSP. For lead containing jobsites, the competent and qualified person shall have successfully completed an EPA or state accredited lead-based paint abatement Supervisor course specific to the work to be performed and shall possess current and valid state and/or local government certification, as required.

1.4.2 Qualified Painting Contractor

The Contractor shall be a certified SSPC-QP 1 Painting Contractor.

1.4.3 Qualified Paint Applicator

Documentation of certification shall be submitted for all paint applicators. Prior to the initiation of any work all paint applicators shall be tested and certified as meeting the requirements of the qualified paint applicator. Certification shall be administered by the government approved independent third party Test Agency. Applicators failing the certification test shall not be permitted to apply any paint on the project.

1.4.3.1 Certification Criteria

The paint applicator shall be evaluated based on the conformance of the applied paint system to the requirements of the specifications. Deficiencies in the coatings, improper mixing or improper application methods are basis for failure. The Test Agency shall be the sole judge as to the acceptability of each paint applicators performance.

1.4.4 Coating Thickness Gage Qualification

Documentation of certification shall be submitted for all coating thickness gages. Magnetic flux thickness gages as described in ASTM D 1186 shall be used to make all coating thickness measurements on ferrous metal substrates.

Eddy current thickness gages as described in ASTM D 1400 shall be used to measure coating thickness on all nonferrous metal substrates. Gages shall have an accuracy of +/- 3 percent or better. Gages to be used on the job shall be certified by the manufacturer as meeting these requirements.

1.5 SAMPLING AND TESTING

The Contractor shall allow at least 30 days for sampling and testing. Sampling may be at the jobsite or source of supply. The Contractor shall notify the Contracting Officer when the paint and thinner are available for sampling. Sampling of each batch shall be witnessed by the Contracting Officer unless otherwise specified or directed. A 1 liter sample of paint and thinner shall be submitted for each batch proposed for use. The sample shall be labeled to indicate formula or specification number and nomenclature, batch number, batch quantity, color, date made, and applicable project contract number. Testing will be performed by the Government. Costs for retesting rejected material will be deducted from payments to the Contractor at the rate of $600.00 dollars for each paint sample retested and $600.00 dollars for each thinner retested.

1.6 SAFETY AND HEALTH PROVISIONS

Work shall be performed in accordance with the requirements of 29 CFR 1910, 29 CFR 1926, EM 385-1-1, and other references as listed herein. Matters of interpretation of the standards shall be submitted to the Contracting Officer for resolution before starting work. Where the regulations conflict, the most stringent requirements shall apply. Paragraph SAFETY AND HEALTH PROVISIONS supplements the requirements of EM 385-1-1, paragraph (1). In any conflict between Section 01 of EM 385-1-1 and this paragraph, the provisions herein shall govern.

1.6.1 Abrasive Blasting

The Contractor shall comply with the requirements in Section 06.H of EM 385-1-1.

1.6.1.1 Hoses And Nozzles

In addition to the requirements in Section 20 of EM 385-1-1, hoses and hose connections of a type to prevent shock from static electricity shall be used. Hose lengths shall be joined together by approved couplings of a material and type designed to prevent erosion and weakening of the couplings. The couplings and nozzle attachments shall fit on the outside of the hose and shall be designed to prevent accidental disengagement.

1.6.1.2 Workers Other Than Blasters

Workers other than blasting operators working in close proximity to abrasive blasting operations shall be protected by utilizing MSHA/NIOSH-approved half-face or full-face air purifying respirators equipped with high-efficiency particulate air (HEPA) filters, eye protection meeting or exceeding ANSI Z87.1 and hearing protectors (ear plugs and/or ear muffs) providing a noise reduction rating of at least 20 dBA or as needed to provide adequate protection.

1.6.2 Cleaning with Compressed Air

Cleaning with compressed air shall be in accordance with Section 20.B.5 of EM 385-1-1 and personnel shall be protected as specified in 29 CFR 1910.134.

1.6.3 Cleaning with Solvents

1.6.3.1 Ventilation

Ventilation shall be provided where required by 29 CFR 1910 or where the concentration of solvent vapors exceeds 10 percent of the Lower Explosive Limit (LEL). Ventilation shall be in accordance with 29 CFR 1910.94, paragraph (c)(5).

1.6.3.2 Personal Protective Equipment

Personal protective equipment shall be provided where required by 29 CFR 1910. and in accordance with 29 CFR 1910, Subpart I.

1.6.4 Pretreatment of Metals and Concrete with Acids

1.6.4.1 Personal Protective Equipment

Personnel shall be protected in accordance with 29 CFR 1910, Subpart I.

1.6.4.2 Emergency Equipment

In addition to the requirements of Section 05 of EM 385-1-1, the Contractor shall provide an eyewash in accordance with ANSI Z358.1, paragraph (6).

1.6.5 Mixing Epoxy and Polyurethane Resin Formulations

1.6.5.1 Exhaust Ventilation

Local exhaust ventilation shall be provided in the area where the curing agent and resin are mixed. This ventilation system shall be capable of providing at least 100 linear fpm of capture velocity measured at the point where the curing agent and resin contact during mixing.

1.6.5.2 Personal Protective Equipment

Exposure of skin and eyes to epoxy resin components shall be avoided by wearing appropriate chemically resistant gloves, apron, safety goggles, and face shields meeting or exceeding the requirements of ANSI Z87.1.

1.6.5.3 Medical Precautions

Individuals who have a history of sensitivity to epoxy or polyurethane resin systems shall be medically evaluated before any exposure can occur. Individuals who are medically evaluated as exhibiting a sensitivity to epoxy resins shall not conduct work tasks or otherwise be exposed to such chemicals. Individuals who develop a sensitivity shall be immediately removed from further exposure and medically evaluated.

1.6.5.4 Emergency Equipment

A combination unit, comprised of an eyewash and deluge shower, within close proximity to the epoxy or polyurethane resin mixing operation shall be provided in accordance with ANSI Z358.1, paragraph (9).

1.6.6 Paint Application

1.6.6.1 Ventilation

When using solvent-based paint, ventilation shall be provided to exchange air in the space at a minimum rate of 140 cubic meters per minute per spray gun in operation. It may be necessary to install both a mechanical supply and exhaust ventilation system to effect adequate air changes within the confined space. Means of egress shall not be blocked. Ventilation shall be continued after completion of painting and through the drying phase of the operation. If the ventilation system fails or the concentration of volatiles exceeds 10 percent of the LEL (except in the zone immediately adjacent to the spray nozzle), painting shall be stopped and spaces evacuated until such time that adequate ventilation is provided. An audible alarm that signals system failure shall be an integral part of the ventilation system. The effectiveness of the ventilation shall be checked by using ventilation smoke tubes and making frequent oxygen and combustible gas readings during painting operations. Exhaust ducts shall discharge clear of the working areas and away from possible sources of ignition.

1.6.6.2 Explosion Proof Equipment

Electrical wiring, lights, and other equipment located in the paint spraying area shall be of the explosion proof type designed for operation in Class I, Division 1, Group D, hazardous locations as required by the NFPA 70. Electrical wiring, motors, and other equipment, outside of but within 6 meters of any spraying area, shall not spark and shall conform to the provisions for Class I, Division 2, Group D, hazardous locations. Electric motors used to drive exhaust fans shall not be placed inside spraying areas or ducts. Fan blades and portable air ducts shall be constructed of nonferrous materials. Motors and associated control equipment shall be properly maintained and grounded. The metallic parts of air-moving devices, spray guns, connecting tubing, and duct work shall be electrically bonded and the bonded assembly shall be grounded.

1.6.6.3 Further Precautions

a. Workers shall wear nonsparking safety shoes.

b. Solvent drums taken into the spraying area shall be placed on nonferrous surfaces and shall be grounded. Metallic bonding shall be maintained between containers and drums when materials are being transferred.

c. Insulation on all power and lighting cables shall be inspected to ensure that the insulation is in excellent working condition and is free of all cracks and worn spots. Cables shall be further inspected to ensure that no connections are within 15 meters of the operation, that lines are not overloaded, and that they are suspended with sufficient slack to prevent undue stress or chafing.

1.6.6.4 Ignition Sources

Ignition sources, to include lighted cigarettes, cigars, pipes, matches, or cigarette lighters shall be prohibited in area of solvent cleaning, paint storage, paint mixing, or paint application.

1.6.7 Health Protection

1.6.7.1 Air Sampling

The Contractor shall perform air sampling and testing as needed to assure

that workers are not exposed to contaminants above the permissible exposure limit. In addition, the Contractor shall provide the Contracting Officer with a copy of the test results from the laboratory within five working days of the sampling date and shall provide results from direct-reading instrumentation on the same day the samples are collected.

1.6.7.2 Respirators

During all spray painting operations, spray painters shall use approved SCBA or SAR (air line) respirators, unless valid air sampling has demonstrated contaminant levels to be consistently within concentrations that are compatible with air-purifying respirator Assigned Protection Factor (APF). Persons with facial hair that interferes with the sealing surface of the facepiece to faceseal or interferes with respirator valve function shall not be allowed to perform work requiring respiratory protection. Air-purifying chemical cartridge/canister half- or full-facepiece respirators that have a particulate prefilter and are suitable for the specific type(s) of gas/vapor and particulate contaminant(s) may be used for nonconfined space painting, mixing, and cleaning (using solvents). These respirators may be used provided the measured or anticipated concentration of the contaminant(s) in the breathing zone of the exposed worker does not exceed the APF for the respirator and the gas/vapor has good warning properties or the respirator assembly is equipped with a NIOSH-approved end of service life indicator for the gas(es)/vapor anticipated or encountered. Where paint contains toxic elements such as lead, cadmium, chromium, or other toxic particulates that may become airborne during painting in nonconfined spaces, air-purifying half- and full-facepiece respirators or powered air-purifying respirators equipped with appropriate gas vapor cartridges, in combination with a high-efficiency filter, or an appropriate canister incorporating a high-efficiency filter, shall be used.

1.6.7.3 Protective Clothing and Equipment

All workers shall wear safety shoes or boots, appropriate gloves to protect against the chemical to be encountered, and breathable, protective, full-body covering during spray-painting applications. Where necessary for emergencies, protective equipment such as life lines, body harnesses, or other means of personnel removal shall be used during confined-space work.

1.7 MEDICAL STATUS

Prior to the start of work and annually thereafter, all Contractor employees working with or around paint systems, thinners, blast media, those required to wear respiratory protective equipment, and those who will be exposed to high noise levels shall be medically evaluated for the particular type of exposure they may encounter. Medical records shall be maintained as required by 29 CFR 1910.20. The evaluation shall include:

a. Audiometric testing and evaluation of employees who will work in a noise environment with a time weighted average greater than or equal to 90 dBA.

b. Vision screening (employees who use full-facepiece respirators shall not wear contact lenses).

c. Medical evaluation shall include, but shall not be limited to, the following:

(1) Medical history including, but not limited to, alcohol use, with emphasis on liver, kidney, and pulmonary systems, and sensitivity to chemicals to be used on the job.

(2) General physical examination with emphasis on liver, kidney, and pulmonary system.

(3) Determination of the employee's physical and psychological ability to wear respiratory protective equipment and to perform job-related tasks.

(4) Determination of baseline values of biological indices for later comparison to changes associated with exposure to paint systems and thinners or blast media, which include: liver function tests to include SGOT, SGPT, GGPT, alkaline phosphates, bilirubin, complete urinalysis, EKG (employees over age 40), blood urea nitrogen (bun), serum creatinine, pulmonary function test, FVC, and FEV, chest x-ray (if medically indicated), blood lead and ZPP (for individuals where it is known there will be an exposure to materials containing lead), other criteria that may be deemed necessary by the Contractor's physician, and Physician's statements for individual employees that medical status would permit specific task performance.

1.8 CHANGE IN MEDICAL STATUS

Any employee whose medical status has changed negatively due to work related chemical and/or physical agent exposure while working with or around paint systems and thinners, blast media, or other chemicals shall be evaluated by a physician, and the Contractor shall obtain a physicians statement as described in paragraph MEDICAL STATUS prior to allowing the employee to return to those work tasks. The Contractor shall notify the Contracting Officer in writing of any negative changes in employee medical status and the results of the physicians reevaluation statement.

1.9 ENVIRONMENTAL PROTECTION

In addition to the requirements of section 01355 the Contractor shall comply with the following environmental protection criteria.

1.9.1 Waste Classification, Handling, and Disposal

The Contractor shall be responsible for assuring the proper disposal of all hazardous and nonhazardous waste generated during the project. Nonhazardous waste shall be stored in closed containers separate from hazardous waste storage areas. All nonhazardous waste shall be transported in accordance with local regulations regarding waste transportation. In addition to the number of manifest copies required by 40 CFR 262.22, one copy of each manifest will be supplied to the Contracting Officer prior to transportation.

1.10 PAINT PACKAGING, DELIVERY, AND STORAGE

Paints shall be processed and packaged to ensure that within a period of one year from date of manufacture, they will not gel, liver, or thicken deleteriously, or form gas in the closed container. Paints, unless otherwise specified or permitted, shall be packaged in standard containers not larger than 20 liters, with removable friction or lug-type covers. Containers for vinyl-type paints shall be lined with a coating resistant to

solvents in the formulations and capable of effectively isolating the paint from contact with the metal container. Each container of paint or separately packaged component thereof shall be labeled to indicate the purchaser's order number, date of manufacture, manufacturer's batch number, quantity, color, component identification and designated name, and formula or specification number of the paint together with special labeling instructions, when specified. Paint shall be delivered to the job in unbroken containers. Paints that can be harmed by exposure to cold weather shall be stored in ventilated, heated shelters. All paints shall be stored under cover from the elements and in locations free from sparks and flames.

PART 2 PRODUCTS

See Part 3 - EXECUTION for requirements.

PART 3 EXECUTION

3.1 CLEANING AND PREPARATION OF SURFACES TO BE PAINTED

3.1.1 General Requirements

Surfaces to be painted shall be cleaned before applying paint or surface treatments. Deposits of grease or oil shall be removed in accordance with SSPC SP 1, prior to mechanical cleaning. Solvent cleaning shall be accomplished with mineral spirits or other low toxicity solvents having a flash point above 38 degrees C. Clean cloths and clean fluids shall be used to avoid leaving a thin film of greasy residue on the surfaces being cleaned. Items not to be prepared or coated shall be protected from damage by the surface preparation methods. Machinery shall be protected against entry of blast abrasive and dust into working parts. Cleaning and painting shall be so programmed that dust or other contaminants from the cleaning process do not fall on wet, newly painted surfaces, and surfaces not intended to be painted shall be suitably protected from the effects of cleaning and painting operations. Welding of, or in the vicinity of, previously painted surfaces shall be conducted in a manner to prevent weld spatter from striking the paint and to otherwise reduce coating damage to a minimum; paint damaged by welding operations shall be restored to original condition. Surfaces to be painted that will be inaccessible after construction, erection, or installation operations are completed shall be painted before they become inaccessible.

3.1.2 Concrete Surfaces

New concrete surfaces, including concrete floors, shall be permitted to age for a minimum of 30 days prior to painting. Grease and oil removal shall be accomplished by solvent cleaning and/or detergent washing followed by rinsing. Loosely adherent materials such as dirt, dust, laitance, efflorescence, bleed water residues, or other foreign substances shall be removed by wire or fiber brushing, scrapers, light sandblasting, or other approved means. For interior walls and floors, sandblasting, unless otherwise specifically authorized, shall be restricted to the wet or vacuum type. Surface glaze, if present, shall be removed by light blasting or by scrubbing with a 5-percent solution of phosphoric acid. The texture of the surface after etching shall be roughly equivalent to the texture of an 80-120 grit sandpaper. If acid etching is used, the surface shall be thoroughly rinsed with clean water to remove all traces of the acid. Prior to painting, the concrete shall be dry. Adequate dryness shall be determined visually at the time of application by performing the following test. Tape 2-foot by 2-foot squares of polyethylene to the surface at

random locations. The test patches shall remain in place overnight. Coatings shall only be applied if there are no traces of moisture and surfaces are dry beneath the polyethylene the following day.

3.2 PAINT APPLICATION

3.2.1 General

The finished coating shall be free from holidays, pinholes, bubbles, runs, drops, ridges, waves, laps, excessive or unsightly brush marks, and variations in color, texture, and gloss. Application of initial or subsequent coatings shall not commence until the Contracting Officer has verified that atmospheric conditions and the surfaces to be coated are satisfactory. Each paint coat shall be applied in a manner that will produce an even, continuous film of uniform thickness. Edges, corners, crevices, seams, joints, welds, rivets, corrosion pits, and other surface irregularities shall receive special attention to ensure that they receive an adequate thickness of paint. Spray equipment shall be equipped with traps and separators and where appropriate, mechanical agitators, pressure gauges, pressure regulators, and screens or filters. Air caps, nozzles, and needles shall be as recommended by the spray equipment manufacturer for the material being applied. Airless-type spray equipment may be used only on broad, flat, or otherwise simply configured surfaces, except that it may be employed for general painting if the spray gun is equipped with dual or adjustable tips of proper types and orifice sizes. Airless-type equipment shall not be used for the application of vinyl paints.

3.2.2 Mixing and Thinning

Paints shall be thoroughly mixed, strained where necessary, and kept at a uniform composition and consistency during application. Paste or dry-powder pigments specified to be added at the time of use shall, with the aid of powered stirrers, be incorporated into the vehicle or base paint in a manner that will produce a smooth, homogeneous mixture free of lumps and dry particles. Where necessary to suit conditions of the surface temperature, weather, and method of application, the paint may be thinned immediately prior to use. Thinning shall generally be limited to the addition of not more than 125 milliliters per liter of the proper thinner; this general limitation shall not apply when more specific thinning instructions are provided. Paint that has been stored at low temperature, shall be brought up to at least 21 degrees C before being mixed and thinned, and its temperature in the spray tank or other working container shall not fall below 15 degrees C during the application. Paint that has deteriorated in any manner to a degree that it cannot be restored to essentially its original condition by customary field-mixing methods shall not be used and shall be removed from the project site. Paint and thinner that is more than 1 year old shall be resampled and resubmitted for testing to determine its suitability for application.

3.2.3 Atmospheric and Surface Conditions

Paint shall be applied only to surfaces that are above the dew point temperature and that are completely free of moisture as determined by sight and touch. Paint shall not be applied to surfaces upon which there is detectable frost or ice. Except as otherwise specified, the temperature of the surfaces to be painted and of air in contact therewith shall be not less than 9 degrees C during paint application nor shall paint be applied if the surfaces can be expected to drop to 0 degrees C or lower before the film has dried to a reasonably firm condition. During periods of inclement

weather, painting may be continued by enclosing the surfaces and applying artificial heat, provided the minimum temperatures and surface dryness requirements prescribed previously are maintained. Paint shall not be applied to surfaces heated by direct sunlight or other sources to temperatures that will cause detrimental blistering, pinholing, or porosity of the film.

3.2.4 Time Between Surface Preparation and Painting

Surfaces that have been cleaned and/or otherwise prepared for painting shall be primed as soon as practicable after such preparation has been completed but, in any event, prior to any deterioration of the prepared surface.

3.2.5 Method of Paint Application

Unless otherwise specified, paint shall be applied by brush or spray to ferrous and nonferrous metal surfaces. Special attention shall be directed toward ensuring adequate coverage of edges, corners, crevices, pits, rivets, bolts, welds, and similar surface irregularities. Other methods of application to metal surfaces shall be subject to the specific approval of the Contracting Officer. Paint on plaster, concrete, or other nonmetallic surfaces shall be applied by brush, roller, and/or spray.

3.2.6 Coverage and Film Thickness

Film thickness or spreading rates shall be as specified hereinafter. Where no spreading rate is specified, the paint shall be applied at a rate normal for the type of material being used. In any event, the combined coats of a specified paint system shall completely hide base surface and the finish coats shall completely hide undercoats of dissimilar color.

3.2.7 Progress of Painting Work

Where field painting on any type of surface has commenced, the complete painting operation, including priming and finishing coats, on that portion of the work shall be completed as soon as practicable, without prolonged delays. Sufficient time shall elapse between successive coats to permit them to dry properly for recoating, and this period shall be modified as necessary to suit adverse weather conditions. Paint shall be considered dry for recoating when it feels firm, does not deform or feel sticky under moderate pressure of the finger, and the application of another coat of paint does not cause film irregularities such as lifting or loss of adhesion of the undercoat. All coats of all painted surfaces shall be unscarred and completely integral at the time of application of succeeding coats. At the time of application of each successive coat, undercoats shall be cleaned of dust, grease, overspray, or foreign matter by means of airblast, solvent cleaning, or other suitable means. Cement and mortar deposits on painted steel surfaces, not satisfactorily removed by ordinary cleaning methods, shall be brush-off blast cleaned and completely repainted as required. Undercoats of high gloss shall, if necessary for establishment of good adhesion, be scuff sanded, solvent wiped, or otherwise treated prior to application of a succeeding coat. Field coats on metal shall be applied after erection except as otherwise specified and except for surfaces to be painted that will become inaccessible after erection.

3.2.8 Drying Time Prior to Immersion

Minimum drying periods after final coat prior to immersion shall be: epoxy systems at least 5 days, Minimum drying periods shall be increased twofold if the drying temperature is below 18 degrees C and/or if the immersion exposure involves considerable abrasion.

3.2.9 Protection of Painted Surfaces

Where shelter and/or heat are provided for painted surfaces during inclement weather, such protective measures shall be maintained until the paint film has dried and discontinuance of the measures is authorized. Items that have been painted shall not be handled, worked on, or otherwise disturbed until the paint coat is fully dry and hard.

3.3 PAINT SYSTEMS APPLICATION

The required paint systems and the surfaces to which they shall be applied are shown in this paragraph, and/or in the drawings. Supplementary information follows.

3.3.1 Surface Preparation

The method of surface preparation and pretreatment shown in the tabulation of paint systems is for identification purposes only. Cleaning and pretreatment of surfaces prior to painting shall be accomplished in accordance with detailed requirements previously described.

3.3.2 System No. 21

Paint shall be applied with a minimum of three single coats to produce an average dry film thickness totaling 220 microns. When applying MIL-DTL-24441, the type of thinner, amount of thinning, and required induction time shall be as recommended by the manufacturer. The drying time between coats shall not be less than 8 hours nor more than 96 hours.

3.3.3 System No. 22

The floor coating shall be applied according to the manufacturer's instructions. It shall be a 4 coat system having a minimum total dry film thickness at any point of not less than 228 microns.

3.3.4 Protection of Nonpainted Items and Cleanup

Walls, equipment, fixtures and all other items in the vicinity of the surfaces being painted shall be maintained free from damage by paint or painting activities. Paint spillage and painting activity damage shall be promptly repaired.

3.4 INSPECTION

The Contractor shall inspect, document, and report all work phases and operations on a daily basis. As a minimum the daily report shall contain the following:

a. Inspections performed, including the area of the structure involved and the results of the inspection.

b. Surface preparation operations performed, including the area of the structure involved, the mode of preparation, the kinds of solvent,

abrasive, or power tools employed, and whether contract requirements were met.

c. Thinning operations performed, including thinners used, batch numbers, and thinner/paint volume ratios.

d. Application operations performed, including the area of the structure involved, mode of application employed, ambient temperature, substrate temperature, dew point, relative humidity, type of paint with batch numbers, elapsed time between surface preparation and application, elapsed time for recoat, condition of underlying coat, number of coats applied, and if specified, measured dry film thickness or spreading rate of each new coating.

3.5 PAINTING SCHEDULES

SYSTEM NO. 21

Items or surfaces to be coated: See Room Finish Schedule on sheet A6.01

SURFACE PREPARATION	1st & 2nd COAT	3rd & 4th COAT
Brushoff As specified	MIL-DTL-24441,	MIL-DTL-24441 Color Formula 151 Haze Gray

Contractor may use System No. 22 as an option or may submit for approval an alternative to system 22 that is resistant to chemicals, diesel fuel and slip resistant.

SYSTEM NO. 22

Items or surfaces to be coated: See Room Finish Schedule on sheet A6.01

SURFACE PREPARATION	COATING SYSTEM
As specified by manufacturer	CID A-A-50542

-- End of Section --