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 bid. See FAR : :52.214-3 of Section 00100 :	Solicitation No. DACW45 02 B 0003 Date of Issue: 21 Dec 2001 Date of Opening: 29 Jan 2002

Amendment No. 0002
18 January 2002

SUBJECT: Amendment No. 0002 to Specifications and Drawings for Construction of **Lewis and Clark Visitor Center Parking Area, Gavins Point Dam – Lewis & Clark Lake, Missouri River, Nebraska and South Dakota.** Solicitation No. DACW45 02 B 0003.

TO: Prospective Bidders 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) Section 02821A Page 3, paragraph 1.2, under SD-10,
a) after “Electro-Mechanical Locks” add “G-RE”
b) after “Gate Operator” add “G-RE”

(2) Section 02821A Page 5, paragraph 2.8,
a) Line 2 down from the top, after “shall include ” add “25”.
b) Line 2, after “remote control devices” add “ , and keypads on both sides of the gates for key access.”

(3) Section 16528A Page 11, paragraph 2.9.1, delete the first sentence and replace with following:
“Aluminum poles and brackets for walkway lighting shall have a dark bronze factory applied painted finish to match light fixtures.”

(4) Section 16528A Page 12, paragraph 2.9.2 Delete the first sentence and replace with following:
“Steel poles shall have a dark bronze factory applied painted finish to match light fixtures.”

b. Specifications (New and/or Revised and Reissued). Delete and substitute or add specification pages as noted below. The substituted pages are revised and reissued with this amendment.

Pages Deleted	Pages Substituted or Added
SECTION 02562 (NEBRASKA) PAVEMENTS FOR SMALL PROJECTS	SECTION 02661 (SOUTH DAKOTA)FLEXIBLE PAVEMENTS AND CONCRETE SIDEWALK AND CURB AND GUTTER

c. Drawings (Not Reissued). The following drawing sheet are revised as indicated below with latest revision date of 18 Jan 2002. These drawings are not reissued with this amendment.

(1) Sheet C1.00,

a) Revise Sanitary sewer line from manhole located 45' south of Administration Building to run east toward the sanitary sewer manhole located in the lawn area 100' southeast of the Administration Building.

b) See Drawing grid B,3-4, revise direction of existing storm drain in center of parking lot south of the Administration Building from due east to northeast to the existing inlet located on the east end of the parking lot.

c) At drawing grid A,3-4, Delete "Electric Sensor" notation at existing west gate.

d) Delete all of the 12" RCP storm drain line shown on the drawing between the Administration Building and the existing curb inlet. This portion of the line does not exist.

e) At drawing grid B,3, delete "Elec Gate Control" notation from the existing east gate.

(2) Sheet C1.01,

a) Revise the sheet as shown on the attached sheet.

b) See the circles indicating shrubs, (located south of the main entrance to the Visitor Center, in drawing grid D ,3, near sidewalk removal reading "REMOVE SIDEWALK TO CORNER OF BUILDING"), add leader pointing to the circles and leader note reading "REMOVE EXISTING SHRUBS".

c) See Drawing grid C-D,3 replace leader note pointing to removal of storm drain line south of the Visitor Center with the following, "Remove existing inlet and entire length of storm drain line and headwall. Repair slope to existing conditions."

d) Note 2, Delete the words "and waste paving materials" from the note.

e) See Drawing grid D3, indicate a flag pole south of the entrance to the Visitor's Center, add the following note to the existing flagpole, "Remove flagpole and entire concrete foundation. Depth of foundation may be over 6 feet."

f) Add the following notes to the list of notes:

" 3. Contractor's staging and storage area will be at the existing Project Service Area located ½ mile to the east of the Visitor Center on the existing highway.

4. Contractor shall plan construction to allow visitors access to the Visitor Center at all times. Contractor shall plan for paved walkways to lead to the Visitor Center from the Picnic Shelter Area or from the existing parking lot south of the Administration Building, to be used by the public.

5. Contractor shall assume that all existing asphalt paving indicated to be removed shall exist as a 3" layer of asphalt with a 10" layer of base course.

6. All existing asphalt material indicated to be demolished and removed from the site shall be milled and stockpiled at the Project service

area.

(3) Sheet C1.02,

a) Add the following to the end of Note 2, “The Contractor shall modify the existing lawn irrigation system and incorporate it into one complete system. The Contractor may utilize the existing heads and piping where possible.”

b) See Bike pad leader note in Drawing Coordinate 3,D, delete “6’ square bike pad” and substitute “ 8’ square bike pad”.

c) See small rectangle shown at the flag pole, add a leader and leader note reading “Concrete walk 36” wide, 20’ length, leading from the curb to the flagpole.”

d) See Drawing grid C,3, see leader note reading: “NEW CONCRETE CURB AND GUTTER. SEE DETAILS SHEET C8.02” add “Typical”.

e)Add the following new note to the Lawn Irrigation System Notes:

“10. New irrigation system controller shall be exterior mounted to the west wall of the existing Administration Building.”

(4) Sheet C2.01, See drawing grid B,3 southeast of the Administration Building, delete all indication of “New 30’ x 12” storm drain line 8”.

(5) Sheet C5.01, Storm Drain Profile Line 8, Delete the “New 30’ x 12” RCP” and the coupler from the profile. New double curb inlet shall remain.

(6) Sheet C8.04, see gate operator leader note, delete “3 phase” and substitute “single phase”.

(7) Sheet C8.05, delete lane-use details: “THROUGH LANE-USE ARROW”, “TURN LANE-USE ARROW”, “TURN AND THROUGH LANE-USE ARROW”.

(8) Sheet C8.06,

a) See Typical Access Road Section, delete the two road widths reading “12’ “ and substitute “13’ “ in both places.

b) Concrete Drainage Flume Details, Section 2 and 3, revise notation “PC Concrete” to “ 6” thick PC Concrete”

(9) Sheet C8.09,

a) Detail 5, see NOTE, line 1 should read “NOTE: PROVIDE PREMANUFACTURED EDGE RESTRAINTS”.

b) Detail 6, delete notation reading “INSTALL BIKE RAKE 1 FOOT FROM EDGE OF CONCRETE PAVING.”

(10) Sheet U1.01, Revise notations to manholes,

a) MH#2, delete “SAN SEWER” and substitute “WATER LINE”

b) MH#3, delete “WATER” and substitute “ELECTRICAL”

c) MH#4, delete “ELECTRICAL” and substitute “SANITARY SEWER”.

(11) Sheet U1.01, See Existing Manhole Table 1, last column on table, delete column heading reading “NEW GROUND ELEVATION” and substitute “NEW MANHOLE ELEVATION”.

(12) Sheet EU.01, Note 3, revise the 2nd sentence to read, "The existing radio shall not be reused on this project."

(13) Sheet EU.02,

a) Note 3 change the last sentence by deleting "TYPE EH13" and replacing with "TYPE GP13".
b) Change the horsepower rating for the two gate openers from "½ HP" to "1 HP". (See Drawing Coordinates 3,B)

(14) Sheet ED.01, detail A
a) See leader note reading "6 - #19 BARS" delete "#19" and substitute "#6".
b) See leader note reading "#10 TIES AT 18 . . " delete "#10" and substitute "#3"

(15) Sheet ED.01, detail B
a) See leader note reading "6 - #19 BARS" delete "#19" and substitute "#6".
b) See leader note reading "#10 TIES AT 18 . ." delete "#10" and substitute "#3".

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

a. Hand-Carried Bids 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 Bids shall be addressed as noted in Item 8 on Page 00010-1 of Standard Form 1442.

3. Bids will be received until 2:00 p.m., local time at place of bid opening, 29 January 2002.

Attachments:
Spec Pages listed in 1.b. above
Dwgs. listed in 1.c. above

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

18 January 2002
MFS/4411

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DIVISION 02 - SITE WORK

SECTION 02561

(SOUTH DAKOTA) FLEXIBLE PAVEMENTS AND CONCRETE SIDEWALK AND CURB AND GUTTER

08/99

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SECTION 02561

(SOUTH DAKOTA) FLEXIBLE PAVEMENTS
AND CONCRETE SIDEWALK AND CURB AND GUTTER
08/99

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 C 88	(1999a) Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C 117	(1995) Materials Finer Than 75 um (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C 127	(1988) Specific Gravity and Absorption of Coarse Aggregate
ASTM C 128	(1997) Specific Gravity and Absorption of Fine Aggregate
ASTM C 131	(1996) Resistance to Degradation of Small Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C 136	(1996a) Sieve Analysis of Fine and Coarse Aggregate
ASTM D 75	(1997) Sampling Aggregates
ASTM D 1075	(1996) Effect of Water on Compressive Strength of Compacted Bituminous Mixtures
ASTM D 1556	(1990; R 1996) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	(1991) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3))
ASTM D 2041	(1995) Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
ASTM D 2726	(1996a) Bulk Specific Gravity and Density of Non-Absorptive Compacted bituminous Mixtures

ASTM D 2950	(1991; R 1997) Density of Bituminous Concrete In Place by Nuclear Method
ASTM D 3381	(1992) Viscosity-Graded Asphalt Cement for use in Pavement Construction
ASTM D 3569	(1995) Specification for Joint Sealant, Hot Applied, Elastomeric Jet Fuel Resistant-Type for Portland Cement Concrete Pavements
ASTM D 3581	(1995) Joint Sealant, Hot Poured, Jet-Fuel- Resistant Type, for Portland Cement Concrete and Tar-Concrete Pavements
ASTM D 4318	(1998) Liquid-Limit, Plastic-Limit, and Plasticity-Index of Soils
ASTM E 11	(1995) Wire-Cloth Sieves for Testing Purposes

CORPS OF ENGINEERS (COE) HAND BOOK FOR CONCRETE AND CEMENT

CRD-C 649	(1995) Standard Test Method For Determining Unit Weight, Marshall Stability, and Flow of Bituminous Mixtures
CRD-C 650	(1995) Standard Test Method For Density and Percent Voids in Compacted Bituminous Paving Mixtures
CRD-C 652	(1995) Standard Test Method For Measurement of Reduction in Marshall Stability of Bituminous Mixtures Caused by Immersion in Water

1.2 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-06 Test Reports

Aggregate Moisture-Density Relationships; G-RE.

New Base Course, Aggregate Surface Course, and Underlying Course

Certified Refinery Analysis; G-RE.

Asphalt Cement, Tack Coat

Bituminous Surface Course; G-RE.

Include Marshall Property Results

Aggregate; G-RE.

JMF, Base Courses, and Portland Cement Concrete.

Portland Cement Concrete; G-RE.

Sidewalk and Curb and Gutter.

Joint Sealant; G-RE.

Certified Test Results for Sidewalk and Curb and Gutter.

Joint Fillers; G-RE.

Certified Test Results for Sidewalk and Curb and Gutter

temperature-viscosity; G-RE.

Certified test results showing the relationship between temperature and viscosity of material.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 DEFINITION

Degree of compaction for the Aggregate Moisture-Density Relationship required is expressed as a percentage of the maximum density obtained by the test procedures presented in ASTM D 1557, "Procedure C". This will be abbreviated hereinafter as percent laboratory maximum density.

3.2 MODIFICATION TO THE SDDOT

a. Reference to "Engineer" and "Department" in the SDDOT shall mean the Contracting Officer or Representative.

b. Sections "Acceptance", "Method of Measurement" and "Basis of Payment" shall not apply.

3.3 PAVEMENT REMOVAL

Where pavement is to be removed at the locations shown on the drawings, the pavement shall be sawed using the double saw-cut method as shown on the drawings, full depth, and with an approved concrete saw prior to removal so as to leave a straight, true and vertical edge. The pavement material and underlying courses shall be removed in a manner that will not disturb the adjacent in-place material to remain. Material that is to remain but damaged by the Contractor's removal operations, shall be replaced at no additional cost to the Government as described herein. Base course material removed from the designated removal area as shown on the drawings shall be wasted. Pavement material from the removal area shall be disposed of and placed as fill in an area approximately one-half mile east at the existing project service area. The exact location shall be established by the Contracting Officer.

3.4 BITUMINOUS SURFACE COURSE.

Bituminous surface course shall conform to the requirements specified in the SDDOT Section 320, "ASPHALT CONCRETE, GENERAL" for materials and construction procedures except as modified herein. Asphalt concrete shall

conform to section 322, "ASPHALT CONCRETE - CLASS G". Aggregate shall meet the requirements as described in section 880, "AGGREGATE FOR ASPHALT CONCRETE". A recycled mixture shall not be used. The quantity of natural sand (fine aggregate) for the surface course mixture shall not exceed 20 percent by weight of coarse and fine aggregate and material passing the No. 200. Bituminous surface course mixture shall be designed in accordance with CRD-C 649, CRD-C 650, and CRD-C 652. The finished mixture shall meet the requirements hereinafter described when tested in accordance with the above mentioned CRD-C's. The absorption value of the entire blend of aggregate shall be determined in accordance with ASTM C 127 and ASTM C 128. Aggregate with an absorption value which does not exceed 2.5 percent will be designated as nonabsorptive, and the apparent specific gravity or ASTM D 2041, shall be used in computing the voids total mix and voids filled with bitumen. Aggregate with an absorption value which exceeds 2.5 percent will be designated as absorptive, and ASTM D 2041, shall be used in computing voids total mix and voids filled with bitumen. The bituminous surface course mixture shall meet the following physical requirements:

Test Property	CRD-C Method	Nonabsorptive Aggregate	Absorptive Aggregate
Stability, minimum, pounds	649	1000	1000
Flow, maximum, 1/100-inch units	649	20	20
Voids, total mix, percent	650	3-5	2-4
Voids, filled with bitumen, percent	650	70-80	80-90

3.4.1 Reduction in Stability by Immersion

If the index of retained stability of the specimens is less than 75, when tested in accordance with CRD-C 652 , the aggregates shall be rejected or the bitumen shall be treated with an approved antistripping agent. The amount of antistripping agent added to the bitumen shall be sufficient, as approved by the Contracting Officer, to produce an index of retained stability of 75 or greater when tested in accordance with CRD-C 652 . No additional payment will be made for any addition of antistripping agent that may be required.

3.4.2 Contractor's Option

At the option of the Contractor, in lieu of developing a new job-mix formula for surface course construction, the Contractor may use a job-mix formula for surface course construction which has been used within the last 12 months on another nearby Corps of Engineers project, provided in each instance that the same materials proposed for use on this project are being used, the JMF meets the previously specified criteria, and the JMF and test results are less than 12 months old. Use of this option will permit no changes o aggregate requirements or to other requirements specified in this section and shall not be the basis for additional cost to the Government or extension of time.

3.5 BITUMINOUS MATERIAL

Approval of bituminous materials shall be based on a certified refinery analysis submitted by the Contractor, showing that the material conforms to the requirements of the SDDOT or as specified herein.

3.5.1 ASPHALT CEMENT

Asphalt cement shall conform to the requirements specified in Section 810, "ASPHALT MATERIAL," of the SDDOT . Asphalt cement shall be viscosity grade AC-10, penetration grade 85-100 or an approved performance graded (PG) cement.

3.5.2 BITUMINOUS PRIME COAT

Bituminous prime coat shall conform to and be placed to the requirements specified in Section 330, "PRIME, TACK AND FLUSH SEAL COATS," and Section 890, "ASPHALT MATERIAL" of the SDDOT. Bituminous materials shall be liquid asphalt, 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. Rate of application shall be not less than 0.15 gallon per square yard nor more than 0.40 gallon per square yard. The prime coat shall be applied only when the ambient temperature is 50^{o} F or above, and when the temperature has not been below 35^{o} F for 12 hours immediately prior to application, unless otherwise directed. The exact quantities, within the range specified, which may be varied to suit field conditions, will be determined by the Contracting Officer. The application temperature for liquid asphalt shall be as directed and shall provide an application viscosity between 20 and 120 centistokes, kinematic, or 10 and 60 seconds, Saybolt-Furol. Application temperatures shall be within the following ranges, except that the appropriate changes should be made when the range of viscosity is raised or lowered:

MC-30.....85-155 degrees F
MC-70.....120-190 degrees F

The temperature-viscosity relationship shall be furnished to the Contracting Officer.

3.5.3 BITUMINOUS TACK COAT

Bituminous tack coat shall conform to the requirements specified in Section 330, "PRIME, TACK AND FLUSH SEAL COATS," and Section 890, "ASPHALT MATERIAL" of the SDDOT. Bituminous materials shall be approved by the contracting officer and shall be a liquid emulsion or cutback material.

3.6 BASE COURSES

The base course(s) and aggregate surfacing shall conform to and be placed in accordance with the requirements specified in Section 260, "GRANULAR BASES AND SURFACING". At least one complete series of aggregate base course tests shall be performed in conformance to the SDDOT prior to the start of construction. The base and subbase courses shall be compacted to a minimum 100% maximum laboratory density.

3.6.1 AGREGGATE BASE COURSE

Base course material shall be "AGGREGRATE BASE COURSE", in Section 882, "AGGREGRATES FOR GRANULAR BASES AND SURFACING" of the SDDOT except the range for the No. 200 sieve shall be 0-10%.

3.6.2 SUBBASE COURSE

Subbase course shall conform to Section 882, "AGGREGATES FOR GRANULAR BASES AND SURFACING", Type "SUBBASE". Testing shall be as necessary to

demonstrate complete compliance with the requirements of the SDDOT specifications and as specified herein. Prior to placement of the subbase material the subgrade shall be scarified 6" and recompacted to a minimum 95% maximum laboratory density. The subgrade shall be approved by the contracting officer prior to the placement of subbase course material.

3.7 PORTLAND CEMENT CONCRETE SIDEWALKS, AND CURB AND GUTTER

3.7.1 STRUCTURAL CONCRETE

Portland cement concrete shall conform to and be placed in accordance with the requirements specified in Section 460, "STRUCTURAL CONCRETE of the SDDOT. The aggregate shall conform to section 820, "COARSE AGGREGATE FOR USE IN PORTLAND CEMENT CONCRETE" and shall be coarse aggregate for Class M, Size No. 1 or 3. Fine aggregate shall meet section 800, "FINE AGGREGATE FOR USE IN PORTLAND CEMENT CONCRETE" of the SDDOT. Portland cement shall be approved based on certified mill certificate conforming to the requirements as specified in the SDDOT. All other materials shall conform to section 460.

3.7.2 Sidewalks

Portland cement concrete sidewalk shall conform to and be placed in accordance with the requirements specified in Section 651, "CONCRETE SIDEWALKS", except as modified herein. The portland cement concrete shall be Class M5. At the option of the contractor, the portland cement concrete as required herein above may be used. The aggregate shall conform to section 820, "COARSE AGGREGATE FOR USE IN PORTLAND CEMENT CONCRETE" and shall be coarse aggregate for Class M, size No. 1. Fine aggregate shall meet section 800, "FINE AGGREGATE FOR USE IN PORTLAND CEMENT CONCRETE" of the SDDOT. Replacement sidewalk shall match existing sidewalk or as directed by the Contracting Officer. Joint Fillers and Joint Sealant shall be approved based on certified test results. The joint sealant shall be either a hot pour or a silicone and placed in accordance to Section 870 in the SDDOT. At the end of the curing period, expansion and contraction joints shall be carefully cleaned and filled with joint sealer. Joints shall be filled with sealer and recessed from the concrete surface 1/8-inch and in such manner as to minimize spilling on the adjacent surface. Spilled sealing material shall be removed immediately and the surface of the sidewalk cleaned.

3.7.3 Curb and Gutter

Portland cement concrete curb and gutter shall conform to and be placed in accordance with the requirements specified in Section 650, "CONCRETE CURB AND GUTTER" of the SDDOT, except as modified herein. The portland cement concrete shall be Class M5 and meet section 462, "CONCRETE FOR INCIDENTAL CONSTRUCTION - CLASS M". At the option of the contractor, portland cement concrete pavement as required herein above may be used. The aggregate shall conform to section 820, "COARSE AGGREGATE FOR USE IN PORTLAND CEMENT CONCRETE" and shall be coarse aggregate for Class M, size No. 1. Fine aggregate shall meet section 800, "FINE AGGREGATE FOR USE IN PORTLAND CEMENT CONCRETE" of the SDDOT. Joint Fillers and Joint Sealant shall be approved based on certified test results conforming to Section 650. At the end of the curing period, expansion and contraction joints shall be carefully cleaned and filled with joint sealer. Joints shall be filled with sealer and recessed from the concrete surface 1/8-inch and in such manner as to minimize spilling on the adjacent surface. Spilled sealing material shall be removed immediately and the surface of the cub and gutter.

3.8 UNDERLYING COURSE

The underlying course after removal of the base course material shall be scaified 6 inches and recompacted to 95% of the laboratory maximum density.

3.9 SAMPLING AND TESTING

All quality control sampling and testing shall be the responsibility of the Contractor and shall be performed at no additional cost to the Government in accordance with PARAGRAPH: CONTRACTOR QUALITY CONTROL in SECTION: SPECIAL CLAUSES and as specified herein. Sampling and testing shall be performed by an approved testing laboratory at the expense of the Contractor and shall be in accordance as defined herein and/or in the DOT. At least 15 working days prior to commencing construction, the Contractor shall submit for approval the aggregate base course tests results, and the job mix formula plus aggregate tests results, sidewalk, and curb and gutter showing that all requirements specified herein andin the SDDOT are met. Any portion of the work not in conformance as described herein or on the drawings shall be removed and replaced at no additional cost to the .

3.9.1 In-Place Tests

3.9.1.1 Base Courses, Surface Courses, and Underlying Course

One of each of the following tests shall be performed on samples taken from the placed and compacted base and aggregate surface courses. Samples shall be taken for each 1000 square yards or less of each layer placed.

Sieve Analysis (Subbase, Base, and Surface Course)

Aggregate Moisture-Density Relationships

Liquid-Limit and Plasticity-Index

3.9.2 Compaction

3.9.2.1 Base Courses, Surface Courses, and Underlying Course

Laboratory maximum density of new aggregate base and surface courses and underlying course shall be determined in accordance with ASTM D 1557, Procedure C. Density shall be measured in the field in accordance with ASTM D 1556. All base and aggregate surface courses shall be compacted to at least 100 percent of laboratory maximum density and underlying course to 95 percent of laboratory maximum density.

3.9.2.2 Bituminous Surface Course

Density of the compacted mixture of the surface course shall be a minimum of 97% and a maximum of 100% (95%-100% along joints) of the maximum field laboratory compacted density. At the option of the Contractor densities of the compacted mixture may be determined by the nuclear method in accordance with ASTM D 2950 for contractor quality control purposes. In any event, the basis of acceptance for density shall be determined from the specific gravity method as stated below.

3.9.3 Portland Cement Concrete

One of each of the following tests shall be performed on samples taken at the location of placement. Samples shall be taken every two hours during the actual placement of concrete or as directed by the Contracting Officer.

PCC (Portland Cement Concrete) air content and slump
PCC cylinders (Cast three specimens for testing at 28 days)
PCC Thickness - Two cores (Min. 4" Diameter) at two randomly selected areas
within the paving limits and as determined by the Contracting Officer.

3.9.4 Bituminous Mixtures

Samples of plant mixtures shall be taken at the start-up of the laydown operations each day and before the material is placed in the pavement. The sample shall be tested to determine conformance with the specified Marshall l test properties for bituminous mixtures and to determine bitumen content and aggregate gradation.

3.9.4.1 Testing Frequency

a. Marshall Tests

One set (three specimens) of tests shall be made for each 300 tons or less of bituminous mixture placed each day.

b. Extraction Tests.

Extraction tests shall be made to determine bitumen content and aggregate gradation at the same frequency specified above for Marshall tests.

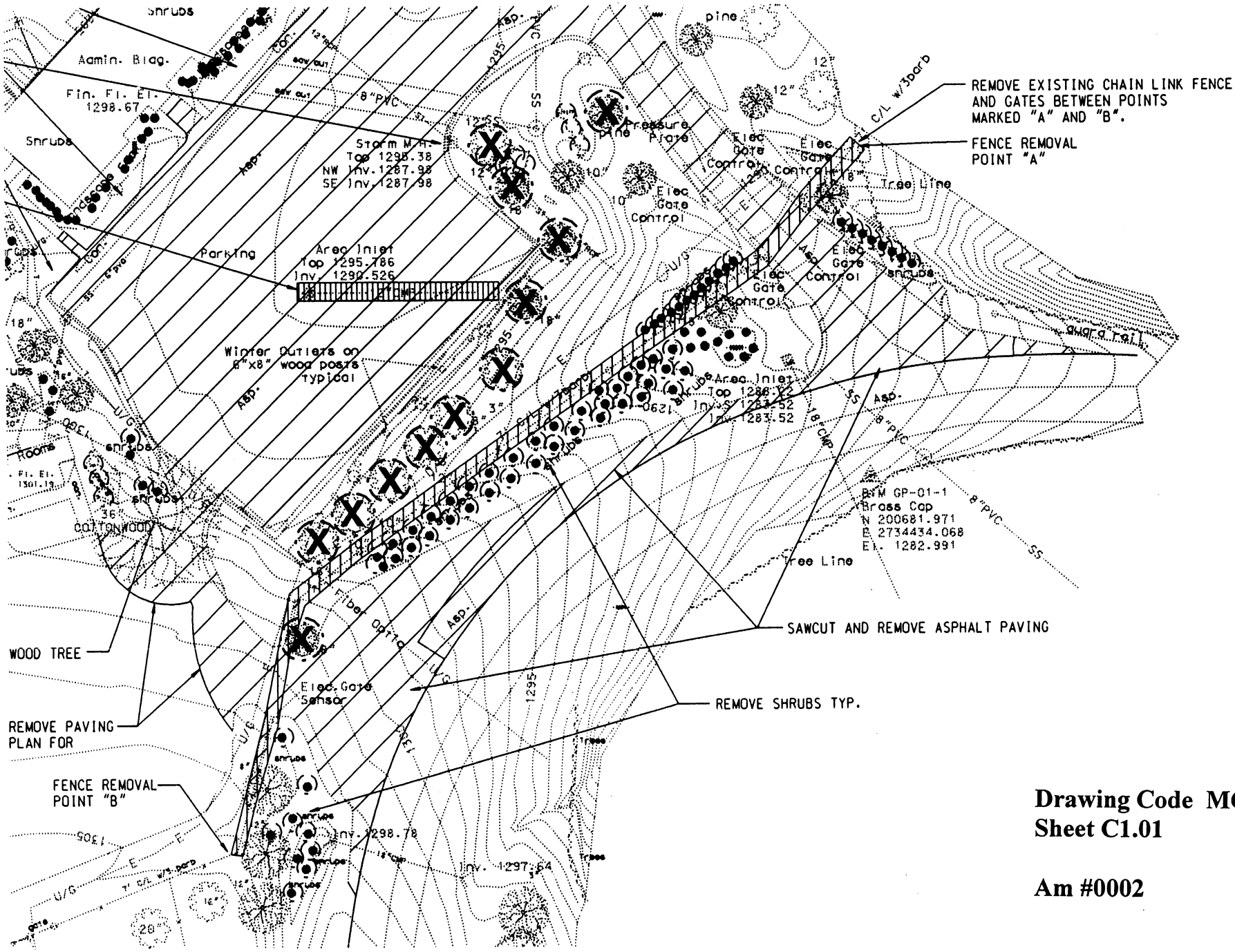
c. Immersion Compression Tests.

One set of tests shall be made for the first day's construction and thereafter whenever there is any change in materials or job-mix formula.

3.9.4.2 Sampling Bituminous Pavements

Testing and sampling of the finished pavement, shall be performed by the Contractor. The location of the core samples shall be near the plant samples taken for Marshall property determination, extraction and gradation and as directed by the Contracting Officer. The cores shall be at least 4 inches in diameter. The samples shall be tested by the Contractor to determine conformance to density, voids and thickness. Specimens shall be tested in accordance with the requirements of CRD-C 650. Three samples shall be taken and tested for each 300 tons or less of bituminous mixture placed each day. At least one sample shall be taken from the longitudinal joint. The grade of the completed surface shall not deviate more than 0.05 foot from the plan grade. The finished surface when tested with a 12 foot straight edge shall not deviate from the surface by more then 1/4 inch. The straight edge shall be laid every 25 feet parallel and perpendicular to the paving lane centerline.

-- End of Section --



Drawing Code MG280-110
Sheet C1.01

Am #0002