STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

CONSTRUCTION PROPOSAL
FOR

AVOYELLES PARISH POLICE JURY

FEDERAL AID PROJECT

STATE PROJECT NO. 744-05-0015
RENOVATION OF SARTO IRON BRIDGE, PHASE II
ROUTE LA 451
AVOYELLES PARISH

STATE OF LOUISIANA
EDWIN L. LANTZER
REG. No. 24733
REGISTERED PROFESSIONAL ENGINEER IN MECHANICAL ENGINEERING

Edwin Lantzer
14 MAY 2009

STATE PROJECT NO. 744-05-0015
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NOTICE TO CONTRACTORS (11/08)

Electronic bids and electronic bid bonds for the following project will be downloaded by the Department of Transportation and Development (DOTD) on **Wednesday, June 24, 2009**. **Paper bids and paper bid bonds will not be accepted.** Electronic bids and electronic bid bonds must be submitted through www.bidx.com prior to the electronic bidding deadline. Beginning at 10:00 a.m., all bids will be downloaded and posted online at http://www.dotd.la.gov/cgi-bin/construction.asp. No bids are accepted after 10:00 a.m.

STATE PROJECT NO. 744-05-0015
FEDERAL AID PROJECT NO. 0502(510)
DESCRIPTION: RENOVATION OF SARTO IRON BRIDGE, PHASE II
ROUTE: LA 451
PARISH: AVOYELLES
TYPE: STRUCTURAL REPAIR/CONVERT TO PEDISTRIAN BRIDGE, AND RELATED WORK.
LIMITS: State Project No. 744-05-0015: LOCATED ON ROUTE LA 451 AS SPECIFIED IN THE PLANS.
LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT FOR:
AVOYELLES PARISH POLICE JURY.
ESTIMATED COST RANGE: $250,000 to $500,000
PROJECT ENGINEER: URS CORPORATION; 312 Treasure Place, Marksville, LA 71351, (318) 253-4549.
DOTD COORDINATOR: CONNELLA, JEFF; (318) 627-5522.
PROJECT MANAGER: HORTON, VALARIE.

Bids must be prepared and submitted in accordance with Section 102 of the 2006 Louisiana Standard Specifications for Roads and Bridges as amended by the project specifications, and must include all information required by the proposal.

Paper plans and/or proposals may be obtained in Room 101-A of the DOTD Headquarters Administration Building, 1201 Capitol Access Road in Baton Rouge, or by contacting the DOTD; Email: sharonknight@dotd.la.gov, Phone (225) 379-1111, FAX: (225) 379-1714, or by written requests sent to the Louisiana Department of Transportation and Development, Project Control Section, P. O. Box 94245, Baton Rouge, LA 70804-9245. Proposals will not be issued later than 24 hours prior to the time set for opening bids. All Addenda, Amendments, Letters of Clarification, and Withdrawal Notices will be posted online. **Paper notices will not be distributed.** Construction proposal information may be accessed via the Internet at www.dotd.la.gov. From the LA DOTD home page, select the following options: **Doing Business with DOTD**, then **Construction Letting Information**. Once the **Construction Letting Information** page appears, find the **Notice to Contractors** box. From the drop down menu, select the appropriate letting date and press the "Go To button to open the page, which provides a listing of all projects to be let and a **Construction Proposal Documents** link for each project. All project specific notices are found here. **It will be the responsibility of the bidder to check for updates.** If paper copies of the proposal are desired, the proposal cost is $25.00. Paper copies of the plans are available free of charge. The purchase price for paper plans and proposals is non-refundable. Additionally, plans and specifications may be seen at the Project Engineer's office or in Room 101-A of the DOTD's Headquarters Administration Building in Baton Rouge. Upon request, the Project Engineer will show the work.

All questions concerning the plans shall be submitted via the Electronic Plans Distribution Center known as **Falcon**. Questions submitted within 96 hours of the bid deadline may not be answered prior to bidding. Falcon may be accessed via the Internet at www.dotd.la.gov. From the home page, select ***Doing Business with DOTD*** from the left-hand menu, then select ***Construction Letting Information*** on the pop-up menu. On the Construction Letting Information page, select the link, ***DOTD's Plan Room***. Login to Falcon (or request an ID if a first-time user). Once logged in, you will have access to view Project Information, submit a question concerning the project, and view the plans. All submitted questions will be forwarded by email to the Project Manager and the Project Engineer for a response.

The U. S. Department of Transportation (DOT) operates a toll free "Hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should call 1-800-424-9071. All information will be treated confidentially and caller anonymity will be respected.

GENERAL BIDDING REQUIREMENTS (08/06): The specifications, contract and bonds governing the construction of the work are the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges, together with any supplementary specifications and special provisions attached to this proposal.

Bids shall be prepared and submitted in accordance with Section 102 of the Standard Specifications.

The plans herein referred to are the plans approved and marked with the project number, route and Parish, together with all standard or special designs that may be included in such plans. The bidder declares that the only parties interested in this proposal as principals are those named herein; that this proposal is made without collusion or combination of any kind with any other person, firm, association, or corporation, or any member or officer thereof; that careful examination has been made of the site of the proposed work, the plans, Standard Specifications, supplementary specifications and special provisions above mentioned, and the form of contract and payment, performance, and retainage bond; that the bidder agrees, if this proposal is accepted, to provide all necessary machinery, tools, apparatus and other means of construction and will do all work and furnish all material specified in the contract, in the manner and time therein prescribed and in accordance with the requirements therein set forth; and agrees to accept as full compensation therefore, the amount of the summation of the products of the quantities of work and material incorporated in the completed project, as determined by the engineer, multiplied by the respective unit prices herein bid.

It is understood by the bidder that the quantities given in this proposal are a fair approximation of the amount of work to be done and that the sum of the products of the approximate quantities multiplied by the respective unit prices bid shall constitute gross sum bid, which sum shall be used in comparison of bids and awarding of the contract.

The bidder further agrees to perform all extra and force account work that may be required on the basis provided in the specifications.

The bidder further agrees that within 15 calendar days after the contract has been transmitted to him, he will execute the contract and furnish the Department satisfactory surety bonds.

If this proposal is accepted and the bidder fails to execute the contract and furnish bonds as above provided, the proposal guaranty shall become the property of the Department; otherwise, said proposal guaranty will be returned to the bidder; all in accordance with Subsection 103.04.

MANDATORY ELECTRONIC BIDS AND ELECTRONIC BID BONDS SUBMISSION (10/08): This project requires mandatory electronic bidding. All Specifications, whether Standard, Supplemental or Special Provisions, are hereby amended to delete any references regarding paper bids and the ability to submit paper bid forms.

The contractor shall register online to be placed on the Louisiana Department of Transportation and Development (LA DOTD) prospective bidders list or for information only list.

Modifications to proposal documents will be posted on the Department's website at the following URL address: www.dotd.la.gov/cgi-bin/construction.asp.

LA DOTD shall not be responsible if the bidder cannot complete and submit a bid due to failure or incomplete delivery of the files submitted via the internet.

DBE PARTICIPATION IN FEDERAL AID CONSTRUCTION CONTRACTS (07/00): This project has not been selected for a specific DBE Goal. The contractor shall meet the

obligations of the Required Contract Provisions for DBE Participation in Federal Aid Construction Contracts contained elsewhere herein.

BUY AMERICA PROVISIONS (03/95): Pursuant to the "Buy America Provisions" of the Surface Transportation Assistance Act (STAA) of 1982 as promulgated by current FHWA regulation 23 CFR 635.410 and the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) amendment to (STAA), all steel and iron materials permanently installed on this project shall be manufactured, including application of a coating, in the United States, unless a waiver of these provisions is granted. Coating includes all processes which protect or enhance the value of the material to which the coating is applied. The request for waiver must be presented in writing to the Department by the contractor. Such waiver may be granted if it is determined that:

(1) The application of Buy America Provisions would be inconsistent with the public interest or

(2) Such materials are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality.

Minimal use of foreign steel and iron materials will be allowed without waiver provided the cost of these materials does not exceed 0.1 percent of the total contract cost or $2,500, whichever is greater; however, the contractor shall make written request to the DOTD Construction Engineering Administrator for permission to use such foreign materials and shall furnish a listing of the materials, their monetary value, and their origin and place of production.

The burden of proof for the origin and place of production and any request for waiver is the responsibility of the contractor.

Prior to the use of steel and iron materials in the project, the contractor shall furnish Mill Test Reports to the engineer for such steel and iron materials, accompanied by a notarized certification stating that the Mill Test Reports represent the steel and iron materials to be furnished and that such materials were produced and fabricated in the United States.

Pig iron and processed, pelletized, and reduced iron ore are exempt from the Buy America Provisions.

DEFINITIONS AND TERMS (07/07): Subsection 101.03 of the Standard Specifications is amended to include the following.

Contracting Agency. A city, levee board, police jury or other governing authority of a parish, state office, agency, board, commission, public corporation or other political subdivision of the State, in whose name the contract will be executed. Whenever the term "Department" is used as Owner, it shall mean the Contracting Agency. Whenever the term "Department" is used as Engineer, it shall mean the Engineer.

Technical Specifications. Requirements pertaining to a specific method of performing the work and to quantities and qualities of materials to be furnished.

The definition for "Proposal/ Bid Guaranty" is deleted and following substituted.

Proposal/Bid Guaranty. The required security furnished with a bid. The only form of security acceptable is a Bid Bond.

AWARD OF CONTRACT (01/08): Subsection 103.02, Award of Contract, is amended to include the following.

The award of contract, if awarded, will be made to the lowest responsible bidder on the total of the General Items (base bid), or General Items plus any or all of the Additive Alternates, in accordance with LSA R.S. 48:252(B)(6)(a). The combination used will be selected for award based on available funds.

MAINTENANCE OF TRAFFIC (11/13/08): Subsection 104.03 of the 2006 Standard Specifications is amended to include the following requirements.

The contractor shall provide for and maintain through and local traffic at all times and shall conduct his operations in such manner as to cause the least possible interference with traffic at junctions with roads, streets and driveways.

Between October 1 and January 31, the contractor shall maintain the highway in a condition suitable for large scale sugar cane hauling operations and prior thereto shall perform only those items which will not interfere with the condition of the highway for heavy hauling operations. During this period, the contractor shall provide all equipment and material necessary to keep the highway in satisfactory condition. If the contractor does not properly maintain the highway, the Department reserves the right to maintain same with its own equipment, labor and material and deduct costs of such maintenance from payments for the work. If it becomes necessary to suspend construction operations for heavy hauling during the sugar cane season, contract time will not be assessed for said period of suspension; however, maintenance of traffic shall be continued by the contractor during such period of suspension.

PERMITS, LICENSES, TAXES AND INSURANCE (04/01). Section 107 of the Standard Specifications is amended as follows.

Subsection 107.02, Permits, Licenses, Taxes and Insurance. This subsection is deleted and the following substituted.

107.02 PERMITS, LICENSES, TAXES AND INSURANCE. Contractors shall procure temporary permits and licenses for the work, pay charges, fees, and taxes, and give notices necessary to due and lawful prosecution of the work.

The contractor shall maintain, at a minimum, the following insurance coverages:

(a) Workers Compensation in compliance with state law, with the exception that the contractor's Employer liability is to be at least $1,000,000 when work is to be over water and involves maritime exposures. For the coverage provided in this subpart the contractor's Insurer will have no right of recovery or subrogation against the State of Louisiana, the Louisiana Department of Transportation and Development, or ***Avoyelles Parish Police Jury***.

(b) Commercial General Liability Insurance with a combined single limit per occurrence for bodily injury and property damage. The aggregate loss limit must be on a per project basis. This insurance shall include coverage for bodily injury and property damage, and include coverage for Premises-Operation; Broad form Contractual Liability; Products and Completed Operation; Use of Contractors and Subcontractors; Personal Injury; Broad form Property Damage; explosion, collapse and underground (XCU) coverage. The required combined single limit amount of insurance shall be as provided in Table 107-1.

(c) A separate Owner's and Contractor's Protective (OCP) Liability Policy shall be supplied by the contractor naming the Louisiana Department of Transportation and Development and ***Avoyelles Parish Police Jury*** as the named insured. The required combined single OCP limit amount shall be as provided in Table 107-1.

(d) Business Automobile Liability Insurance with a combined single limit per occurrence for bodily injury and property damage. This insurance shall include bodily injury and property damage coverage for owned automobiles, hired automobiles and non-owned automobiles. The required combined single limit amount of insurance shall be as provided in Table 107-1 below.

TABLE 107-1
Insurance Requirements

INITIAL CONTRACT AMOUNT	MINIMUM INSURANCE
Up to $1,000,000	$ 1,000,000
From $1,000,001 to $2,000,000	$ 2,000,000
Over $2,000,000	$ 5,000,000

The following shall be included as provisions in each policy:

(a) The insurance company (ies) issuing the policy (ies) shall have no recourse against the State of Louisiana, the Department of Transportation and Development, or ***Avoyelles Parish Police Jury*** for payment of any premiums or for assessments under any form of the policy.

(b) Any and all deductibles in the above described insurance policy (ies) shall be assumed by and be at the sole risk of the contractor.

Insurance is to be placed with insurance companies authorized in the State of Louisiana with an A. M. Best's rating of A-: VI or higher. This rating requirement may be waived for Workers Compensation coverage only.

Should any policies be canceled, the contractor shall immediately notify the Department of Transportation and Development and ***Avoyelles Parish Police Jury***.

Upon failure of the contractor to furnish, deliver and maintain such insurance as required, this contract, at the election of ***Avoyelles Parish Police Jury***, may be immediately declared suspended, discontinued or terminated. Failure of the contractor to maintain any required insurance shall not relieve the contractor from any liability under the contract, nor shall the insurance requirements be construed to conflict with the obligations of the contractor concerning indemnification under Subsection 107.17.

The contractor is responsible for requiring and verifying that all subcontractors working on the project maintain appropriate types and levels of insurance coverage.

PAYMENT ADJUSTMENT (05/06): Section 109, Measurement and Payment of the Standard Specifications is amended to add the following.

This project is not designated for payment adjustments for asphalt cements or fuels.

ITEMS NS-ENH-02120 THRU NS-ENH-18100: These items are described in the Technical Specifications as included elsewhere in the construction manual.

Payment will be at the unit contract price under the following:

Item NS-ENH-02120, Building Complete and Installed.

Item NS-ENH-03080, Concrete (Decorative Surface Treatment) Interpretive Kiosk Concrete Floor Slab.

Item NS-ENH-18100, Repairs to Approach Replace Timber Bents.

CONTRACT TIME (03/05): The entire contract shall be completed in all details and ready for final acceptance in accordance with Subsection 105.17(b) within **one hundred eighty (180)** working days.

Prior to assessment of contract time, the contractor will be allowed 30 calendar days from the date stipulated in the Notice to Proceed to commence with portions of the contract work including but not limited to assembly periods, preparatory work for materials fabrications such as test piles, or other activities which hinder progress in the beginning stages of construction. Prior

to issuance of the Notice to Proceed, the Department will consider extending the assembly period upon written request from the contractor justifying the need for additional time.

The contractor shall be responsible for maintenance of traffic from the beginning of the assembly period. During the assembly period, the contractor will be allowed to do patching and other maintenance work necessary to maintain the roadway with no time charges when approved by the engineer.

If the contractor begins regular construction operations prior to expiration of the assembly period, the assessment of contract time will commence at the time construction operations are begun.

LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SUPPLEMENTAL SPECIFICATIONS
(FOR 2006 STANDARD SPECIFICATIONS)

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LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SUPPLEMENTAL SPECIFICATIONS

The 2006 Louisiana Standard Specifications for Roads and Bridges and supplemental specifications thereto are amended as follows.

PART I – GENERAL PROVISIONS

SECTION 101 – GENERAL INFORMATION, DEFINITIONS, AND TERMS:
Subsection 101.03 – Definitions (07/07), Pages 3 – 13).

Delete the definition for "Proposal/Bid Guaranty" and substitute the following.

Proposal / Bid Guaranty. The required security furnished with a bid. The only form of security acceptable is a Bid Bond.

SECTION 102 – BIDDING REQUIREMENTS:
Subsection 102.09 – Proposal / Bid Guaranty (07/07), Page 19.

Delete the contents of this subsection and substitute the following.

PROPOSAL/BID GUARANTY. Each bid shall be accompanied by a proposal/bid guaranty in an amount not less than five percent of the total bid amount when the bidder's total bid amount as calculated by the Department in accordance with Subsection 103.01 is greater than $50,000. No proposal/bid guaranty is required for projects when the bidder's total bid amount as calculated by the Department is $50,000 or less. The official total bid amount for projects that include alternates is the total of the bidder's base bid and all alternates bid on and accepted by the Department. The proposal/bid guaranty submitted by the bidder shall be a bid bond made payable to the contracting agency as specified on the bid bond form provided in the construction proposal. No other form of security will be accepted.

The bid bond shall be on the "Bid Bond" form provided in the construction proposal, on a form that is materially the same in all respects to the "Bid Bond" form provided, or on an electronic form that has received Department approval prior to submission. The bid bond shall be filled in completely, shall be signed by an authorized officer, owner or partner of the bidding entity, or each entity representing a joint venture; shall be signed by the surety's agent or attorney-in-fact; and shall be accompanied by a notarized document granting general power of attorney to the surety's signer. The bid bond shall not contain any provisions that limit the face amount of the bond.

The bid bond will be written by a surety or insurance company that is in good standing and currently licensed to write surety bonds in the State of Louisiana by the Louisiana Department of Insurance and also conform to the requirements of LSA-R.S. 48:253.

All signatures required on the bid bond may be original, mechanical reproductions, facsimiles or electronic. Electronic bonds issued in conjunction with electronic bids must have written Departmental approval prior to use. The Department will make a listing of approved electronic sureties providers on the Bidx.com site.

SECTION 107 – LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC:
Subsection 107.05 – Federal Aid Participation (04/08), Pages 57 and 58.

Delete the second paragraph.

SECTION 108 – PROSECUTION AND PROGRESS:
Subsection 108.04 – Prosecution of Work (03/05) Pages 74 and 75.

Add the following sentence to the third paragraph of Heading (b).

Should the surety or the Department take over prosecution of the work, the contractor shall remain disqualified for a period of one year from the completion of the project, unless debarment proceedings are instituted.

When the Department of Transportation and Development is not the contracting agency on the project, the second paragraph under Heading (c) is deleted.

PART II – EARTHWORK

SECTION 202 – REMOVING OR RELOCATING STRUCTURES AND OBSTRUCTIONS:
Subsection 202.06 – Plugging or Relocating Existing Water Wells (03/04), Page 105.

Delete the first sentence and substitute the following.

All abandoned wells shall be plugged and sealed at the locations shown on the plans, or as directed by the engineer, in accordance with the "Water Well Rules, Regulations, and Standards, State of Louisiana." This document is available at the Department of Transportation and Development, Water Resources Section, P. O. Box 94245, Baton Rouge, Louisiana 70804-9245. The Water Resource Section's telephone number is (225) 274-4172.

PART III – BASE COURSES

SECTION 302 – CLASS II BASE COURSE:
Subsection 302.05 – Mixing (08/06), Pages 152 and 153.

Delete the first sentence of Subheading (b)(1), In-Place Mixing, and substitute the following.

In-place mixing shall conform to Heading (a)(1) except that the percentage of Type I portland cement required will be 6 percent by volume.

SECTION 305 – SUBGRADE LAYER:
Subsection 305.06 – Payment (01/08), Page 184.

Delete the contents of this subsection and substitute the following.

305.06 Payment. Payment for subgrade layer will be made at the contract unit price which includes lime, lime treatment, cement, cement treatment, water, stone, recycled portland cement concrete, crushed slag, blended calcium sulfate, asphaltic concrete, and asphalt curing membrane or prime coat, subject to the payment adjustment provisions of Section 1002 for specification deviations of asphalt materials and Subsection 303.11(a) for density deficiencies of cement treated materials. Adjustments in pay for increase or decrease in the percent cement ordered by the engineer will be in accordance with Subsection 303.13. Adjustments in pay for

increase or decrease in the percent lime ordered by the engineer will be based on the price of lime shown on paid invoices (total of all charges). The Materials and Testing Section will provide the payment adjustment percentage for properties of asphalt materials.

Payment for geotextile fabric will be included in the contract unit price for subgrade layer.

Payment will be made under:

Item No.	Pay Item	Pay Unit
305-01	Subgrade Layer _____in (mm) Thick	Square Yard (Sq m)

SECTION 307 – PERMEABLE BASES:

Subsection 307.02 – Materials (09/07), Pages 187 and 188.

Delete the contents of Subheading (b), Asphalt, and substitute the following.

(b) Asphalt: The asphalt for asphalt treated permeable base shall be an approved polymer modified asphalt cement, PG 76-22m, or PG 82-22rm complying with Section 1002. The percentage of asphalt cement shall be 2.0 percent to 4.0 percent by weight (mass) of the total mixture. Asphalt cement content and mixing process shall be such that all aggregates are visibly coated. The mixture shall retain 90 percent coating when tested in accordance with DOTD TR 317.

A job mix formula shall be submitted and approved in accordance with Section 502.

SECTION 308 – IN-PLACE CEMENT TREATED BASE COURSE:

All Subsections within Section 308 – (07/07), Pages 191 – 198.

Whenever the reference to "DOTD TR-432, Method D" is used, it shall mean "DOTD TR-432".

PART V – ASPHALTIC PAVEMENTS

SECTION 502 – SUPERPAVE ASPHALTIC CONCRETE MIXTURES:

Subsection 502.02 – Materials (08/06) (11/07), Pages 210 – 213.

Delete Table 502-2, Superpave Asphalt Cement Usage under Subheading (a) and substitute the following.

Table 502-2
Superpave Asphalt Cement Usage

Current Traffic Load Level	Mixture Type	Grade of Asphalt Cement
Level 1	Wearing Course	PG 70-22m
	Binder Course	PG 70-22m
	Base Course	PG 64-22
Level 2	Wearing Course	PG 76-22m
	Binder Course	PG 76-22m
Level A	Incidental Paving	PG 70-22m

Note: A PG 82-22 rm, Waste Tire Rubber Modified Asphalt, may be substituted for any other grade of asphalt cement.

Delete Table 502-3, Aggregate Friction Rating under Subheading (c)(1) and substitute the following.

Table 502-3
Aggregate Friction Rating

Friction Rating	Allowable Usage
I	All mixtures
II	All mixtures
III	All mixtures, except travel lane wearing courses with plan ADT greater than 7000[1]
IV	All mixtures, except travel lane wearing courses[2]

[1] When plan current average daily traffic (ADT) is greater than 7000, blending of Friction Rating III aggregates and Friction Rating I and/or II aggregates will be allowed for travel lane wearing courses at the following percentages. At least 30 percent by weight (mass) of the total aggregates shall have a Friction Rating of I, or at least 50 percent by weight (mass) of the total aggregate shall have a Friction Rating of II. The frictional aggregates used to obtain the required percentages shall not have more than 10 percent passing the No. 8 (2.36 mm) sieve.

[2] When the average daily traffic (ADT) is less than 2500, blending of Friction Rating IV aggregates with Friction Rating I and/or II aggregates will be allowed for travel lane wearing courses at the following percentages. At least 50 percent by weight (mass) of the total aggregate in the mixture shall have a Friction Rating of I or II. The frictional aggregates used to obtain the required percentages shall not have more than 10 percent passing the No. 8 (2.36 mm) sieve.

Subsection 502.14 – Lot Sizes (11/07), Pages 232 and 233.

Delete the first sentence of the first paragraph and substitute the following.

A lot is a segment of continuous production of asphaltic concrete mixture from the same job mix formula produced for the Department at a specific plant, delivered to a specific DOTD project.

SECTION 508 – STONE MATRIX ASPHALT:

Subsection 508.01 – Description (09/07), Page 274.

Delete this subsection and substitute the following.

508.01 DESCRIPTION. This work consists of furnishing and constructing Stone Matrix Asphalt (SMA) which is a plant mixed asphalt concrete wearing course for high traffic applications. This mixture is a rut resistant hot mix design with stone on stone contact. The mixture shall be composed of a PG 76-22m, or PG 82-22rm asphalt cement and a gap graded coarse aggregate structure. Mineral filler and/or fibers shall be used to control draindown. This work shall be in accordance with these specifications, plan details, and as directed. All requirements of Section 502 apply to Stone Matrix Asphalt, except as modified herein. All plant and paving equipment and processes must meet the requirements of Section 503.

Mixture used for shoulder may be Stone Matrix Asphalt or any mixture type shown in Table 502-5.

Subsection 508.02 – Materials (09/07), Page 274.

Delete the contents of subheading (a), Asphalt Cement and substitute the following.

(a) Asphalt Cement: Asphalt cement shall be PG 76-22m, or PG 82-22rm as listed on QPL 41 and complying with Section 1002.

PART VI – RIGID PAVEMENT

SECTION 602 – PORTLAND CEMENT CONCRETE PAVEMENT REHABILITATION:

Subsection 602.17 – Payment (09/07), Pages 341 – 344.

Delete the last paragraph of Subheadings (d), Full Depth Corner Patching of Jointed Concrete Pavement, (e) Full Depth Patching of Jointed Concrete Pavement, and (g) Patching Continuously Reinforced Concrete Pavement, and substitute the following.

Payment for deteriorated base course removed as directed by the engineer and replaced with concrete will be made as follows: The value per inch (mm) thickness will be determined by dividing the contract unit price per square yard (sq m) by the plan thickness. Thickness of patches will be measured from the surface that exists at the time of patching. Payment for the additional thickness will be made at 50 percent of the value per inch (mm) thus determined.

PART VII – INCIDENTAL CONSTRUCTION

SECTION 701 – CULVERTS AND STORM DRAINS:

All Subsections within Section 701 (08/07), Pages 347 – 358.

Delete Section 701, Culverts and Storm Drains and substitute the following.

SECTION 701
CULVERTS AND STORM DRAINS

701.01 DESCRIPTION. This work consists of furnishing, installing, and cleaning pipe, pipe arch, storm drains and sewers, also referred to as culverts or conduit, in accordance with these specifications and in conformity with lines and grades shown on the plans or established.

701.02 MATERIALS. Materials shall comply with the following sections and subsections:

Usable Soil	203.06(a)
Selected Soil	203.06(b)
Plastic Soil Blanket	203.10
Mortar	702.02
Flowable Fill	710
Portland Cement Concrete	901
Reclaimed Asphaltic Pavement (RAP)	1003.01 & 1003.04(d)
Stone	1003.03(b)
Recycled Portland Cement Concrete	1003.03(c)
Granular Material	1003.07
Bedding Material	1003.08
Concrete Sewer Pipe	1006.02
Reinforced Concrete Pipe	1006.03
Reinforced Concrete Pipe Arch	1006.04
Gasket Materials	1006.06
Plastic Pipe	1006.07
Split Plastic Coupling Bands	1006.07(d)(4)
Plastic Yard Drain Pipe	1006.09
Bituminous Coated Corrugated Steel Pipe and Pipe Arch	1007.02
Structural Plate for Pipe, Pipe Arch and Arch	1007.04
Corrugated Aluminum Pipe and Pipe Arch	1007.05
Coupling Bands	1007.09
Reinforcing Steel	1009
Geotextile Fabric	1019

(a) Side Drain Pipe or Side Drain Pipe Arch: When the item for Side Drain Pipe or Side Drain Pipe Arch is included in the contract, the contractor has the option of furnishing reinforced concrete pipe or reinforced concrete pipe arch, corrugated metal pipe or corrugated metal pipe arch, or plastic pipe, as allowed by EDSM II.2.1.1 or unless otherwise specified.

(b) Cross Drain Pipe or Cross Drain Pipe Arch: When the item for Cross Drain Pipe or Cross Drain Pipe Arch is included in the contract, the contractor has the option of furnishing reinforced concrete pipe or reinforced concrete pipe arch, corrugated metal pipe or corrugated metal pipe arch, or plastic pipe, as allowed by EDSM II.2.1.1 or unless otherwise specified.

(c) Storm Drain Pipe or Storm Drain Pipe Arch: When the item for Storm Drain Pipe or Storm Drain Pipe Arch is included in the contract, the contractor has the option of furnishing reinforced concrete pipe or reinforced concrete pipe arch, or plastic pipe, as allowed by EDSM II.2.1.1 or unless otherwise specified.

(d) Yard Drain Pipe: When the item for Yard Drain Pipe is included in the contract, the contractor has the option of furnishing concrete sewer pipe, plastic yard drain pipe or plastic pipe in accordance with Section 1006 unless otherwise specified.

(e) Material Type Abbreviations:

(1) Reinforced Concrete Pipe:

RCP	Reinforced Concrete Pipe
RCPA	Reinforced Concrete Pipe Arch

(2) Corrugated Metal Pipe:

CAP	Corrugated Aluminum Pipe
CAPA	Corrugated Aluminum Pipe Arch
CMP	Corrugated Metal Pipe
CMPA	Corrugated Metal Pipe Arch
CSP	Corrugated Steel Pipe
CSPA	Corrugated Steel Pipe Arch
BCCSP	Bituminous Coated Corrugated Steel Pipe
BCCSPA	Bituminous Coated Corrugated Steel Pipe Arch

(3) Plastic Pipe:

PP	Plastic Pipe
PVCP	Polyvinyl Chloride Pipe
RPVCP	Ribbed Polyvinyl Chloride Pipe
CPEPDW	Corrugated Polyethylene Pipe Double Wall

(f) Joint Type Abbreviations:

T1	Type 1 Joint
T2	Type 2 Joint
T3	Type 3 Joint

(g) Quality Assurance for Pipe: Manufacturing plants will be periodically inspected for compliance with specified manufacturing methods, and material samples will be randomly obtained for laboratory testing for verification of manufacturing lots. Materials approved at the manufacturing plant will be subject to visual acceptance inspections at the jobsite or point of delivery.

701.03 EXCAVATION. For all pipe, when the sides of the trench are stable as evidenced by the sides of the trench being able to maintain a vertical cut face, the minimum trench width at the bottom of the excavation will be 18 inches (460mm) on either side of the outside diameter of the pipe. If the sides of the trench are unstable, the width of the trench at the bottom of the excavation, for plastic or metal pipe, shall be a minimum width of at least 18 inches (460mm) or one pipe diameter on each side of the outside diameter of the pipe, which ever is greater. Surplus material or excavated material that does not conform to the requirements of Subsection 203.06(a) shall be satisfactorily disposed of in accordance with Subsection 202.02. Moisture controls

including backfill materials selection and dewatering using sumps, wells, well points or other approved processes may be necessary to control excess moisture during excavation, installation of bedding, over-excavated trench backfilling, pipe placement and pipe backfill.

(a) Over-excavation: When unsuitable soils as defined in Subsection 203.04 or a stable, non-yielding foundation cannot be obtained at the established pipe grade, or at the grade established for placement of the bedding, unstable or unsuitable soils below this grade shall be removed and replaced with granular material meeting the requirements of Subsection 1003.07, bedding materials meeting the requirements of Subsection 1003.08 or Type A backfill. All granular, backfill materials placed below the established pipe or bedding grade shall be placed in lifts not exceeding 8 inches (200 mm) thick and sufficiently compacted by hand or a dynamic mechanical hand compaction device over the surface of each lift to form a stable, non-yielding foundation at the surface of the established bedding or pipe grade.

When rock is encountered, it shall be removed below grade and replaced with material complying with Subsection 1003.07, bedding materials meeting the requirements of Subsection 1003.08 or Type A backfill. The compacted earth cushion shall have a thickness under the pipe of at least 1/2 inch per foot (40 mm/m) of fill height over the top of the pipe with a minimum thickness of 8 inches (200 mm). All granular, backfill materials placed below the established pipe or bedding grade shall be placed in lifts not exceeding 8 inches (200 mm) thick and sufficiently compacted by hand or a dynamic mechanical hand operated compaction device over the surface of each lift to form a stable, non-yielding foundation at the surface of the established bedding or pipe grade.

Materials used to backfill in an over-excavated portion of a trench do not require encasement in a Geotextile Fabric.

Density of approved materials placed in over-excavated trenches will not be measured or determined.

701.04 FORMING PIPE BED. Bedding material, when specified, shall be constructed in accordance with Section 726. Materials allowed for bedding shall be as specified in Subsection 1003.08 or may be Type A backfill materials. When bedding materials are specified, additional excavation shall be performed below established pipe grade and the bedding material placed in lifts not exceeding 8 inches (200 mm) thick and lightly compacted by hand or a dynamic hand compaction device over the surface of each lift.

When the bottom of the pipe is not laid in a trench but is constructed above natural soils, a uniform bed shall be constructed as specified for the bottom of a trench.

Density of approved bedding materials will not be measured or determined.

701.05 LAYING PIPE. Pipe laying shall begin at the downstream end of the line. The pipe shall be in contact with the foundation throughout its length. Bell or groove ends of pipe and outside circumferential laps of riveted metal pipe shall be placed facing upstream. Riveted seam metal pipe shall be placed with longitudinal laps at sides. Pipes in each continuous line shall have the same wall thickness. Metal pipes provided with lifting lugs shall be handled only by these lugs.

After pipe has been laid and before backfill is placed, the engineer will inspect the pipe for alignment, grade, integrity of joints, and coating damage.

701.06 JOINING PIPE.

(a) Joint Usage:

(1) Type 1 (T1) joints shall be used for side drains under drives and similar installations.

(2) Type 2 (T2) joints shall be used for cross drains under roadways, including turnouts.

(3) Type 3 (T3) joints shall be used for closed storm drain systems, flumes and siphons.

(b) Concrete Pipe: Concrete pipe may be either bell and spigot, or tongue and groove. The method of joining pipe sections shall be such that ends are fully entered and inner surfaces are flush and even.

An approved mechanical pipe puller shall be used for joining pipes over 36 inches (900 mm) in diameter. For pipe 36 inches (900 mm) or less in diameter, any approved method for joining pipe may be used which does not damage the pipe.

Joints shall comply with Subsection 1006.05, and shall be sealed with gasket material installed in accordance with the manufacturer's recommendations.

(c) Metal Pipe: Metal pipe shall be firmly joined by coupling bands. Bands shall be centered over the joint.

For Type 1 joints, approved gasket material shall be placed in one corrugation recess on each side of the joint at the coupling band and on each band connection in such manner to prevent leakage.

When Type 2 or 3 joints are specified, joining of metal pipe sections shall conform to the following provisions:

(1) General: Band joints shall be sealed with gasket material. Gasket material shall be placed in accordance with the plan details.

(2) Circular Section: Connecting bands shall be of an approved design and shall be installed in accordance with plan details.

(3) Arch Section: Connecting bands shall be a minimum of 12 inches (300 mm) wide for pipe arch less than 36 inches (900 mm) round equivalent diameter, and a minimum of 21 inches (525 mm) wide for 36 inches (900 mm) round equivalent diameter pipe arch and greater. Bands shall be connected at the ends by approved angle or strap connections. Connecting bands used for 36 inches (900 mm) round equivalent diameter pipe arch and above shall be 2-piece bands.

(d) Plastic Pipe: Joints for plastic pipe shall be either bell and spigot or split coupling bands.

(1) Bell and Spigot Type Joint System: The method of joining pipe sections shall be such that ends are fully entered and inner surfaces are flush and even.

Any approved method for joining pipe may be used which does not damage the pipe.

Joints shall be approved and shall be sealed with a gasket system utilizing gasket material complying with Subsection 1006.06(a).

(2) Split Coupling Type Joint System: Split coupling bands shall comply with all dimensional and material requirements of Subsection 1006.07. The bands shall be centered over the joint. The split coupling band shall be secured to the pipe with a minimum of five stainless steel or other approved corrosion resistant bands.

Joints shall be approved and shall be sealed with gasket material. Gasket material shall be placed in the first two corrugation recesses on each side of the pipe connections. Gasket material shall also be placed on each band connection to prevent leakage. When flexible plastic gasket material is used it shall be a minimum of 1/2 inch (13 mm) in size. The bands shall be tightened to create overlap of the band and shall adequately compress the gasket material.

(e) Connections: Approved connections shall be used when joining new pipes to existing pipes. When concrete collars are required in order to extend the ends of existing pipes that have been damaged or to join different types or sizes of pipes, the concrete collars shall be constructed in accordance with plan details, the applicable requirements of Section 901, and as directed.

(f) Geotextile Fabric, Pipe Joints: For concrete, metal and plastic pipes, Types 2 and 3 joints shall be wrapped with geotextile fabric for a minimum of 12 inches (300 mm) on each side of joint for pipe 36 inches (900 mm) or less in diameter and a minimum of 18 inches (450 mm) on each side of the joint for pipe greater than 36 inches (900 mm) in diameter. Ends of the fabric shall be lapped at least 10 inches (250 mm). The edges and ends of fabric shall be suitably secured for the entire circumference of the pipe.

701.07 RELAYING PIPE. If specified or directed, existing pipes shall be removed and suitable sections relaid as specified for new pipes.

701.08 BACKFILLING.

(a) General: Prior to backfilling, pipes found to be damaged or out of alignment or grade shall be removed and reinstalled, or replaced.

Type A backfill material shall be stone, recycled portland cement concrete, flowable fill, or RAP.

Type B backfill materials are selected soils. Where Type B backfill materials are called for, Type A backfill materials may be substituted.

When corrugated metal pipe is used, the backfill material shall be tested and shall have a resistivity greater than 1500 ohm-cm and a pH greater than 5 when tested in accordance with DOTD TR 429 and DOTD TR 430 respectively.

When Type A backfill material is used, geotextile fabric surrounding this backfill shall be placed in accordance with Subsection 726.03 between the aggregate backfill material and all other natural or placed soils in the trench or embankment. Care shall be taken to prevent damage to geotextile fabric during placement of backfill material. For concrete pipe, the fabric shall enclose not only the initial backfill but shall be wrapped over the top of the pipe with at least 12 inches (300 mm) of overlap.

When a trench box or trench sheeting is used in unstable soils and/or for worker safety, and when moved during backfilling operations, filling and additional compaction of the disturbed zone of backfill must take place immediately and in a manner acceptable to the engineer.

Initial backfill is a structural backfill encasing the pipe from the bottom of the pipe to the springline for concrete pipe and to a point one foot (0.3 m) above the top of the pipe for both metal and plastic pipe. Final backfill is not a structural backfill and shall extend from the top of the initial backfill to the top of the natural ground or subgrade in cut areas or to the top of existing ground in fill areas. Any fill required above the final backfill is considered and treated as embankment.

(b) Backfill Applications: For projects using A+B+C bidding method where rigid and flexible pavement alternates are considered, backfill application (2) below, "Cross Drains Under Flexible Pavements", shall apply for either rigid or flexible pavements.

(1) Under Concrete Pavements: Type B backfill may be used as initial and final backfill for all pipes, culverts or drains under concrete pavements. Placement and compaction shall be as specified in Heading (d) below.

(2) Cross Drains Under Flexible Pavements: All reaches, exclusive of those portions of the pipe which are under shoulders, of cross drains and all other culverts, pipes or drains that cross the centerlines of the new roadway or centerlines of existing roadways, such as intersections and are under flexible pavements shall receive an initial backfill of Type A material. Type B backfill materials may be used as final backfill for all pipes. Placement and compaction shall be as specified in Heading (c) and (d) below. Where the subgrade is above existing ground, embankment material as specified for the remainder of the project shall be used from the top of the final backfill to the top of the established embankment grade.

(3) Other Drains Under Flexible Pavements: All reaches of all culverts, pipes or drains under flexible pavements that do not cross the centerlines of new roadway or centerlines of existing roadways, and exclusive of those portions of the pipe which are totally under shoulders, shall receive an initial and final backfill of Type B material. Placement and compaction shall be as specified in Heading (d) below. Where the subgrade is above existing ground, embankment material as specified for the remainder of the project shall be used from the top of the final backfill to the top of the established embankment grade.

(4) Other Areas: All culverts, pipes or drains in nonpaved areas or paved areas that serve as driveways or shoulders shall receive an initial and final backfill of Type B material. Placement and compaction shall be as specified in Heading (d) below.

(5) Pipes Subject to Construction Traffic; The embankment or pipe backfill shall be constructed to a minimum of 24 inches (600 mm) over the pipe before heavy construction equipment is allowed to cross the installation. Where practical, installations with less than 24 inches (600 mm) of cover over the top of the pipe shall be constructed after heavy hauling is completed over the pipe location. After completion of hauling operations, the contractor shall remove excess cover material. Pipe damaged by hauling and backfilling operations shall be removed and reinstalled, or replaced, at no direct pay.

(c) Placement and Compaction; Type A Backfill: For all pipes, culverts and conduits under paved and nonpaved areas, where Type A backfill material is used, the Type A backfill shall be thoroughly hand compacted under the pipe haunches and then dynamically compacted in layers not exceeding 8 inches (200 mm) compacted thickness. Compaction under the haunches of the pipe shall initially be by hand tamping or other acceptable means, until a level is reached that the dynamic tamping can commence. Each lift shall be compacted by applying at least eight

passes of a hand operated, dynamic mechanical compaction device over the surface of each lift. With approval of the engineer, layer thickness may be increased to 12 inches (300 mm) with verification of satisfactory installation and performance. If flowable fill is used it shall be furnished, placed and consolidated in accordance with Section 710. The contractor shall control placement operations during initial backfill operations so as not to damage protective coatings on metal pipes. The contractor shall repair damaged coatings at no additional pay.

(d) Placement and Compaction; Type B Backfill: For all pipes, culverts and conduits, where Type B backfill is allowed, the Type B material shall be placed in layers not exceeding 8 inches (200 mm) compacted thickness. Compaction shall be with suitable mechanical equipment. With approval of the engineer, layer thickness may be increased to 12 inches (300 mm) with verification of satisfactory installation and performance.

(e) Placement and Compaction; Trenchless or Partial Trench Condition: All pipes, culverts, drains and conduits placed with any portion of the pipe above existing ground must also comply with Subsections (a),(b) (c) and (d) above for the portion of the pipe within a trench and that portion of the pipe not constructed in a trench. The width of initial and final backfill of that portion above existing ground and not within a trench will be constructed to such a width that the requirements for placement, compaction and density are met.

(f) Density Requirements: The in place density of Type A backfill materials and bedding materials, will not be measured or determined. Type A backfill, exclusive of RAP and flowable fill, shall be placed at or near optimum moisture content determined in accordance with DOTD TR 415 or 418. RAP materials shall be placed and compacted in a slightly moist condition.

The maximum dry density of initial or final Type B backfill under all paved areas which are to be under traffic will be determined in accordance with DOTD TR 415 or TR 418 and in-place density determined in accordance with DOTD TR 401. Initial and final Type B backfill under all paved areas, under traffic, shall be placed at or near optimum moisture content determined in accordance with DOTD TR 415 or TR 418. Each layer shall be compacted by approved methods prior to the placement of a subsequent layer. The engineer will approve the compaction method based upon validation that such method, including moisture control, will achieve at least 95 percent of maximum dry density as determined in accordance with DOTD TR 401. With approval of the engineer, density testing may be waived on subsequent layers with backfill installation in accordance with approved compaction methods and continued satisfactory performance.

Initial and final backfill in unpaved areas or paved areas such as shoulders or driveways, shall be placed evenly and compacted along the length of the culvert, pipe or drain from the top of the initial backfill to the top of the subgrade. Layered backfill shall be compacted at least to the density of the adjoining existing soils or the compaction required of the laterally adjoining layers of soil immediately outside the trench for embankment elevations. Initial and final backfill shall be placed and compacted at or near optimum moisture content determined in accordance with DOTD TR 415 or TR 418.

701.09 INSPECTION OF PIPES. After completion of embankment and prior to roadway surfacing, the engineer shall inspect pipes for proper alignment and integrity of joints. Any misaligned pipe or defective joints shall be corrected by the contractor at no direct pay.

(a) Plastic Pipe: Installed plastic pipe shall be tested to ensure that vertical deflections do not exceed 5.0 percent. Maximum allowable deflections shall be governed by the mandrel requirements stated herein.

Deflection tests shall be performed no sooner than 30 calendar days after installation and compaction of backfill. The pipe shall be cleaned and inspected for offsets and obstructions prior to testing.

For pipe 36 inches (900 mm) and less in diameter, a mandrel shall be pulled through the pipe by hand to ensure that maximum allowable deflections have not been exceeded. The mandrel shall be approved by the engineer prior to use. Use of an unapproved mandrel or a mandrel altered or modified after approval will invalidate the test. If the mandrel fails to pass, the pipe is overdeflected.

Unless otherwise permitted, overdeflected pipe shall be uncovered and, if not damaged, reinstalled. Damaged pipe shall not be reinstalled, but shall be removed and replaced with new pipe. Any pipe subjected to any method or process other than removal, which attempts, even successfully, to reduce or cure any overdeflection, shall be removed and replaced with new pipe.

The mandrel shall be a rigid, nonadjustable, odd-numbered legged (minimum 9 legs) mandrel having a length not less than its nominal diameter or 24 inches (600 mm), whichever is less. The minimum diameter at any point shall be 5.0 percent less than the base inside diameter of the pipe being tested. The mandrel shall be fabricated of steel, aluminum or other approved material fitted with pulling rings at each end. The nominal pipe size and outside diameter of the mandrel shall be stamped or engraved on some segment other than a runner. A suitable carrying case shall be furnished.

For pipe larger than 36 inches (900 mm) in diameter, deflection shall be determined by a method approved by the engineer. If a mandrel is selected, the minimum diameter, length, and other requirements shall conform to the above requirements.

Mandrel testing shall be conducted by the contractor in the presence of the engineer. Mandrel testing shall be at no direct pay.

(b) Metal Pipe: If the inside diameter of metal pipe or rise dimension of metal pipe arch deflects more than 5.0 percent from original dimensions, they shall be removed and reinstalled, unless they do not rebound or are damaged. Pipe or pipe arch which are damaged or do not rebound shall be removed and replaced at no direct pay. Measurement of deflection will be made by the engineer away from rerolled ends.

701.10 CLEANING PIPES.

(a) Existing Pipes: Pipes designated to be cleaned shall be cleaned of soil, debris and other materials to the invert of the pipe. Designated pipes shall be cleaned by approved methods that will not damage the pipes. Any damage caused by the contractor's operations shall be satisfactorily repaired at no direct pay.

Removed soil, debris and other materials shall be disposed of in accordance with Subsection 202.02 or as otherwise approved in writing.

(b) Contractor Installed Pipes: Prior to final acceptance, pipes shall be cleaned of all debris and soil to the invert of the pipe at no direct pay.

Removed soil, debris and other materials shall be disposed of in accordance with Subsection 202.02 or as otherwise approved in writing.

701.11 STUBBING AND PLUGGING PIPES. When it is required that pipes be plugged, such plugs shall be constructed of Class R concrete complying with Section 901. Thickness of plug and method of construction shall be as directed.

When new pipes are to be stubbed into new or existing pipes or other structures, the connection shall be made with approved mortar complying with Subsection 702.02.

701.12 MEASUREMENT. Pipe, both new and relaid, will be measured in linear feet (lin m) as follows unless stated otherwise.

(a) Pipe not confined by fixed structures will be measured by the number of joints at the nominal length of each joint.

(b) Pipe confined by fixed structures will be measured along the pipe between the termini of pipe in structure walls.

(c) Pipe confined by a fixed structure on one end and unconfined at the other end will be measured along the pipe from the terminus of pipe in the structure wall to the unconfined end of pipe.

(d) Fabricating of pipe tees, elbows and other fittings will be measured per each fitting. The length of pipe in such fittings will be included in the pay length measurement of pipes of which they form a part.

(e) Excavation required for installation of pipes will not be measured for payment, except as otherwise specified in Subsection 203.14.

(f) Furnishing and placing backfill material below existing ground level for pipes will not be measured for payment. Backfill material needed to complete backfill above natural ground and around pipes that extend above natural ground will be measured and payment will be made under applicable earthwork items. When specified, flowable fill will be measured and paid for in accordance with Section 710.

(g) Plugging and stubbing of pipes will not be measured for payment.

(h) Cleaning existing pipes will be measured by the length of pipe cleaned and accepted.

(i) Concrete collars will be measured per each.

701.13 PAYMENT.

(a) Payment for pipe will be made at the contract unit price per linear foot (lin m) of the types and sizes specified.

When plastic pipe is specified on the plans or elected to be used by the contractor, payment will be made at the contract unit price per linear foot (lin m) of the types and sizes specified in accordance with the payment schedule of Table 701-1.

Table 701-1
Payment Schedule for Plastic Pipe

Percent Payment	Stage of Completeness
75	After placement and backfill has been completed
25	After the pipe has met vertical deflection requirements in accordance with Subsection 701.09(a)

(b) Payment for fabricating pipe tees, elbows and other fittings will be made at the contract unit price per each fitting.

(c) When unstable conditions are encountered, the additional excavation will not be measured for payment; however, the additional materials furnished and placed for the pipe foundation will be measured and paid for as follows:

(1) Granular Materials: Payment will be made under the embankment item. The net section volume of the materials will be multiplied by 3 to determine the pay volume. When the contract does not include a pay item for embankment, payment will be made in accordance with Subsection 104.02.

(2) Bedding Material: Measurement and payment will be made in accordance with Section 726. When the contract does not include a pay item for bedding material, payment will be made in accordance with Subsection 104.02.

(d) Payment for cleaning existing pipes will be made at the contract unit price per linear foot (lin m).

(e) Payment for concrete collars will be made at the contract unit price per each.

Payment will be made under:

Item No.	Pay Item	Pay Unit
701-01	Cross Drain Pipe (Size & Type)	Linear Foot (Lin m)
701-02	Cross Drain Pipe Arch (Size & Type)	Linear Foot (Lin m)
701-03	Storm Drain Pipe (Size & Type)	Linear Foot (Lin m)
701-04	Storm Drain Pipe Arch (Size & Type)	Linear Foot (Lin m)
701-05	Side Drain Pipe (Size)	Linear Foot (Lin m)
701-06	Side Drain Pipe Arch (Size)	Linear Foot (Lin m)
701-07	Yard Drain Pipe (Size)	Linear Foot (Lin m)
701-08	Relaying Pipe	Linear Foot (Lin m)
701-09	Fabricating Pipe Fittings	Each
701-10	Reinforced Concrete Pipe (Extension)	Linear Foot (Lin m)
701-11	Reinforced Concrete Pipe Arch (Extension)	Linear Foot (Lin m)
701-12	Corrugated Metal Pipe (Extension)	Linear Foot (Lin m)
701-13	Corrugated Metal Pipe Arch (Extension)	Linear Foot (Lin m)

701-14	Cleaning Existing Pipes	Linear Foot (Lin m)
701-15	Concrete Collar	Each
701-16	Plastic Pipe (Extension)	Linear Foot (Lin m)

SECTION 704 – GUARD RAIL:

Subsection 704.03 – General Construction Requirements (01/05), Pages 368 and 369.

Add the following to Heading (d), Guard Rail End Treatments.

All end treatments shall bear a label indicating the manufacturer and exact product name of the end treatment along with its assigned NCHRP 350 test level. This label shall resist weathering and shall be permanently affixed to the railing in such a way as to be readily visible.

SECTION 706 – CONCRETE WALKS, DRIVES AND INCIDENTAL PAVING:

All Subsections within Section 706 (04/08), Pages 375 – 377.

Delete Section 706, Concrete Walks, Drives and Incidental Paving and substitute the following.

SECTION 706
CONCRETE WALKS, DRIVES AND INCIDENTAL PAVING

706.01 DESCRIPTION. This work consists of furnishing and constructing portland cement concrete walks, handicapped curb ramps, drives and incidental paving slabs in accordance with these specifications and in conformity with lines, grades and dimensions shown on the plans or established.

706.02 MATERIALS. Materials shall comply with the following Section or Subsections.

Portland Cement Concrete (Class M)	901
Joint Filler	1005.01(c)
Reinforcing Steel	1009.01
Curing Materials	1011.01

706.03 CONSTRUCTION REQUIREMENTS.

(a) Excavation: Excavation shall be made to required depth and width. The top of the subgrade shall be shaped and compacted to a firm, even surface conforming to the section shown on the plans. Unsuitable material shall be removed and disposed of in accordance with Subsection 202.02 and replaced with approved material at no direct pay.

(b) Forms: Forms shall be of wood or metal and shall extend the full depth of concrete. Forms shall be straight, clean and of sufficient strength to resist the pressure of concrete. Bracing of forms shall be such that forms remain in horizontal and vertical alignment until their removal.

Concrete may be placed by slip-form methods. Slip-formed concrete shall be placed with an approved machine designed to spread, vibrate, consolidate and finish concrete in one pass of the machine in such manner that minimum hand finishing is necessary. Sliding forms shall be

rigidly held together to prevent spreading of forms. After the passing of the side forms there shall be no noticeable slumping of concrete.

(c) Subgrade: The subgrade shall be thoroughly moistened immediately prior to placing concrete.

(d) Placing and Finishing: Concrete shall be placed on the subgrade, struck off to required thickness and tamped sufficiently to bring the mortar to the surface. The surface shall be finished with a wood float or steel trowel followed by brushing to a slightly rough finish. Joints and edges shall be rounded with an edging tool having a 1/4-inch (6 mm) radius.

(e) Joints:

(1) Expansion Joints: Expansion joints shall be filled with 1/2 inch (13 mm) thick preformed expansion joint filler. Expansion joints shall be installed at maximum 100-foot (30 m) intervals, and between intersecting paving and any fixed structure such as a building, bridge or curbing, and between intersecting paving and the handicapped curb ramps. Expansion joint material shall extend for the full width and depth of paving.

(2) Weakened Plane: Weakened planes shall be formed by a jointing tool or other acceptable means. Weakened planes shall extend into concrete for at least 1/4 of the depth and shall be approximately 1/8 inch (3 mm) wide.

a. Walks: Spacing of weakened planes for walks shall be equal to the width of walk.

b. Drives: A longitudinal weakened plane shall be formed along the centerline of drives more than 16 feet (5 m) wide, and transverse weakened planes shall be formed at not more than 16-foot (5 m) intervals.

c. Incidental Paving: Weakened planes for incidental paving shall be formed at intervals not exceeding 30 times the thickness of the concrete in length or width. Incidental paving poured adjacent to jointed concrete shall be jointed to match existing joints, with intermediate joints formed as necessary not to exceed the maximum joint spacing.

(3) Construction Joints: Construction joints shall be formed around manholes, utility poles, etc., extending into paving and 1/4 inch (6 mm) thick preformed expansion joint filler shall be installed in these joints.

(4) Tie-ins: Tie-ins of existing concrete shall be made by full depth sawing at no direct pay.

(f) Curing: Concrete shall be cured in accordance with Subsection 601.10.

(g) Detectable Warning Surface for Handicap Ramps and At-Grade Sidewalk Intersections: Sidewalks, when intersecting with roadways, shall be equipped with a detectable warning surface system consisting of raised truncated domes as a transition between the sidewalk and the street as required by the Americans with Disabilities Act, 28 CFR Part 36, ADA Standards for Accessible Design.

Detectable warnings (truncated domes) shall be installed on the ramp surface over the full width of the ramp throat for a distance of 24 inches (600 mm) in the direction of travel from the back of the curb. Detectable warnings (truncated domes) shall also be installed on at-grade sidewalks intersecting with roadways for a distance of 36 inches (900 mm) in the direction of travel from the end of the sidewalk. Truncated domes shall be laid out on a square grid in order to allow enough space for wheelchairs to roll between the domes.

Light reflectance of the truncated domes and the underlying surface must meet the 70 percent contrast requirement of ADAAG.

706.04 MEASUREMENT. Quantities of concrete walks, drives and incidental paving slabs for payment will be the design quantities as specified on the plans and adjustments thereto. Design quantities will be adjusted if the engineer makes changes to adjust to field conditions, if design errors are proven or if design changes are made. Design areas are based on the horizontal dimensions shown on the plans. Excavation, backfill, reinforcing steel and joint materials will not be measured for payment.

Handicapped curb ramps, including the detectable surface warning system, will be measured per each.

Detectable surface warning systems for at-grade sidewalk intersection will not be measured for payment.

706.05 PAYMENT. Payment for concrete walks, drives and incidental paving will be made on a lot basis at the contract unit price per square yard (sq m), adjusted in accordance with the following provisions. Payment for each lot will be made in accordance with Table 901-6. Size, sampling, and testing of each concrete lot shall be in accordance with the Materials Sampling Manual.

Payment for handicapped curb ramps, including the detectable surface warning system, will be made by each and shall include, but not limited to, curb transitions, detectable warning system, gutter, landing and base.

Payment will be made under:

Item No.	Pay Item	Pay Unit
706-01	Concrete Walk (inch (mm) Thick)	Square Yard (Sq m)
706-02	Concrete Drive (inch (mm) Thick)	Square Yard (Sq m)
706-03	Incidental Concrete Paving (inch (mm) Thick	Square Yard (Sq m)
706-04	Handicapped Curb Ramps	Each

SECTION 713 – TEMPORARY TRAFFIC CONTROL:

Subsection 713.06 – Pavement Markings (08/06), Pages 400 – 403.

Delete Table 713-1, Temporary Pavement Markings and substitute the following.

Table 713-1
Temporary Pavement Markings[1,2]

		Two-lane Highways	Undivided Multilane Highways	Divided Multilane Highways
SHORT TERM	ADT<1500; or ADT>1500 and time<3 days	Lane lines 4-foot (1.2 m) tape on 40-foot (12 m) centers; with "Do Not Pass" and "Pass With Care" signs as required		
	ADT>1500; Time>3 days and<2 weeks	Lane lines 4-foot (1.2-m) tape on 40-foot (12-m) centers with no passing zone markings		
	All ADT's with time <2 weeks		Lane lines 4-foot (1.2m) tape on 40-foot (12 m) centers; double yellow centerline	Lane lines 4-foot (1.2 m) tape on 40-foot (12 m) centers
LONG TERM	All ADT's with time >2 weeks	Standard lane lines, no-passing zone markings, legends and symbols and when pavement width is 22 feet (6.7 m) or greater, edge lines	Standard lane lines, centerlines, edge lines, and legends and symbols	Standard lane lines, centerlines, edge lines, and legends and symbols.

[1]No-passing zones shall be delineated as indicated whenever a project is open to traffic.
[2]On all Asphaltic Surface Treatments that are open to traffic and used as a final wearing course or as an interlayer, temporary pavement markings (tabs) on 20-foot (6 m) centers shall be used, in lieu of the 4-foot (1.2 m) tape, on 40-foot (12 m) centers.

SECTION 729 – TRAFFIC SIGNS AND DEVICES:
Subsection 729.02 – Materials (04/08), Pages 456 and 457.

Delete the contents of Heading (a), Sign and Marker Sheeting, and substitute the following.

(a) Sign and Marker Sheeting: Sheeting material for sign panels, delineators, barricades and other markers shall comply with Section 1015. All permanent signs shall meet the requirements of ASTM D 4956, Type X.

Subsection 729.04, Fabrication of Sign Panels and Markers (04/08), Pages 458 – 460.

Delete the third paragraph of Heading (c), Sheeting Application and substitute the following.

ASTM D 4956 Type X reflective sheeting shall be applied with an orientation determined by the engineer to obtain the optimum entrance angle performance. Fabricated vertical splices in ASTM D 4956 Type X reflective sheeting will be allowed only when the horizontal dimension of the sign face or attached shield is in excess of the maximum manufactured width of the sheeting. Fabricated vertical splices in ASTM D 4956 Type X reflective sheeting will also be allowed when the specified orientation will create excessive sheeting waste.

SECTION 804 – DRIVEN PILES:

Subsection 804.08 – Construction Requirements (04/07), Pages548 – 554.

Delete the first sentence of Heading (a), Preboring and substitute the following.

Preboring by augering, wet-rotary drilling, or other methods used to facilitate pile driving will not be permitted unless specified in the plans or allowed by the engineer.

Delete the first sentence of Heading (b), Jetting and substitute the following.

Jetting will not be permitted unless allowed in the plans or allowed by the engineer.

SECTION 901 – PORTLAND CEMENT CONCRETE:

Subsection 901.06 – Quality Control of Concrete (08/06), Pages 726 – 731.

Add the following to the contents of Heading (b), Quality Control Tests.

The contractor shall be responsible for monitoring the components (cement, mineral and chemical admixtures, aggregates) in their mix to protect against any changes due to component variations. As component shipments arrive, the contractor shall verify slump, air content and set time by testing at ambient temperatures. The contractor shall make adjustments to the mix design to rectify any changes which would adversely affect constructability, concrete placement or the specifications. The contractor shall submit test results to the Department for review each day of paving. Testing to validate component consistency will be documented on the control logs. Conformance or variation in mix parameters (workability, set times, air content, etc.) shall be noted on the control logs. The contractor shall provide a copy of the proposed testing plan to the engineer for record. Acceptance of the plan does not relieve the contractor's responsibility for consistency.

Subsection 901.08 – Composition of Concrete (12/05), Pages 732 – 734.

Add the following to Heading (a).

The blended cement containing up to 50 percent of grade 100 or grade 120 ground granulated blast-furnace slag must be in compliance with Subsection 1001.04 for portland blast-furnace slag cement.

SECTION 1001 – HYDRAULIC CEMENT:

Subsection 1001.01 – Portland Cement (09/07). Page 749.

Delete the contents of this subsection and substitute the following.

1001.01 PORTLAND CEMENT. Portland cement shall be from an approved source listed in QPL 7 and shall comply with AASHTO M 85.

Alkali content calculated as sodium oxide equivalent shall not exceed 0.60 percent by weight for all types of cement.

SECTION 1003 – AGGREGATES:

Subsection 1003.02 – Aggregates for Portland Cement Concrete and Mortar (07/07), Pages 763 – 766.

Delete the contents of Heading (c), Aggregates for Types B and D Pavements, and substitute the following.

(c) Aggregates for Types B and D Pavements: For the combined aggregates for the proposed portland cement concrete pavement mix, the percent retained based on the dry weight (mass) of the total aggregates shall meet the requirements of Table 1003-1A for the type of pavement specified in the plans. Additionally, the sum of the percents retained on any two adjacent sieves so designated in the table shall be at least 12 percent of the total combined aggregates. The maximum amounts by weight (mass) of deleterious materials for the total aggregate shall be the same as shown in Subsection 1003.02(b).

Table 1003-1A
Aggregates for Types B and D Pavements

U.S. Sieve	Metric Sieve	Percent Retained of Total Combined Aggregates	
		Pavement Type	
		Type B	Type D
2 1/2 inch	63 mm	0	0
2 inch	50 mm	0	0-20
1 1/2 inch	37.5 mm	0-20	0-20
1 inch	25.0 mm	0-20	5-20
3/4 inch	19.0 mm	5-20	5-20
1/2 inch	12.5 mm	5-20	5-20
3/8 inch	9.5 mm	5-20	5-20
No. 4	4.75 mm	5-20	5-20
No. 8	2.36 mm	5-20	5-20
No. 16	1.18 mm	5-20	5-20
No. 30	600 µm	5-20	5-20
No. 50	300 µm	0-20	0-20
No. 100	150 µm	0-20	0-20
No. 200	75 µm	0-5	0-5
Note: For the sieves in the shaded areas, the sum of any two adjacent sieves shall be a minimum of 12 percent of the total combined aggregates.			

Each type of aggregate to be used in the proposed mixture shall be sampled and tested individually. The percent of total combined aggregates retained shall be determined mathematically based on the proportions of the combined aggregate blend. All gradation calculations shall be based on percent of dry weight (mass).

SECTION 1005 – JOINT MATERIALS FOR PAVEMENTS AND STRUCTURES:

Subsection 1005.04 – Combination Joint Former/Sealer (11/05), Pages 782 and 783.

Delete Heading (a) and substitute the following.

(a) Description: This joint former/sealer is intended for use in simultaneously forming and sealing a weakened plane in portland cement concrete pavements.

The material shall consist of an elastomeric strip permanently bonded either mechanically or chemically at the top of each of two rigid plastic side frames and covered with a removable plastic top cap. Side frames shall be of such configuration that when the sealer is inserted into plastic concrete and vibrated, a permanent bond forms between side frames and concrete.

Delete Heading (b)(1) and substitute the following.

(1) Elastomer: The elastomer strip portion of the material shall be manufactured from vulcanized elastomeric compound using polymerized chloroprene or thermoplastic vulcanizate as the base polymer, and shall comply with the following requirements:

Property	ASTM Test Method	Requirements	
		Polymerized Chloroprene	Thermoplastic Vulcanizate
Tensile Strength, kPa, Min.	D 412	12,400	7,400
Elongation at Break, % Min.	D 412	200	400
Hardness, Shore A	D 2240	65 ± 10	65 ± 10
Properties after Aging, 70 h @ 100°C	D 573		
Tensile Strength, % Loss, Max.		20	20
Elongation, % loss, Max.		25	25
Hardness, pts. increase, Max.		10	10
Ozone Resistance, 20% strain or bentloop, 300 pphm in air, 70 h @ 40°C	D 1149	no cracks	no cracks
Oil Swell, IRM 903, 70 h @ 100°C, wt change, % Max.	D 471	45	75

Delete Headings (b)(2) and (b)(3) and substitute the following:

(2) Bond of Elastomer to Plastic: The force required to shear the elastomer from the plastic shall be a minimum of 5.0 pounds per linear inch (90 g/mm) of sealer when tested in accordance with DOTD TR 636.

(3) Bond of Plastic to Cement Mortar: This bond will be evaluated and shall meet the following requirements:

The force required to separate the cement mortar from the plastic shall be a minimum of 5.0 pounds per linear inch (90 g/mm) of sealer when tested in accordance with DOTD TR 636.

SECTION 1006 – CONCRETE AND PLASTIC PIPE:

Subsection 1006.09 – Plastic Yard Drain Pipe (06/07), Page 789.

Delete the contents of Subheading (a)(3), Ribbed Polyvinyl Chloride Pipe (RPVCP) and substitute the following.

Ribbed Polyvinyl Chloride Pipe (RPVCP): Ribbed Polyvinyl Chloride Pipe shall comply with ASTM F 794, Series 46 or ASTM F 949 (46 psi).

SECTION 1013 – METALS:

Subsection 1013.09 – Steel Piles (08/06) Page 822.

Delete the title and references to "Steel Piles" in this subsection and substitute "Steel H Piles".

SECTION 1015 – SIGNS AND PAVEMENT MARKINGS:

Subsection 1015.04 – Sign Panels (05/07), Pages 832 and 833.

Delete the contents of Heading (a), Permanent Sign Panels and substitute the following.

(a) Permanent Sign Panels: Flat panels shall be aluminum sheets or plates complying with ASTM B 209, Alloy 6061-T6 or Alloy 5052-H38. Extruded aluminum panels shall comply with ASTM B 221 (ASTM B 221M), Alloy 6063-T6 and after fabrication, have a flatness equal to or less than 0.031 inch per foot of length and 0.004 inch per inch of width.

Subsection 1015.05 - Reflective Sheeting (04/08), Pages 833 – 838.

Delete the contents of this subsection and substitute the following.

1015.05 REFLECTIVE SHEETING.

(a) Permanent and Temporary Standard Sheeting: Reflective sheeting shall be one of the following standard types as specified on the plans and complying with ASTM D 4956 except as modified herein. Permanent warning, regulatory, guide and supplemental guide sign sheeting shall meet the requirements of ASTM D 4956 Type X. Reflective sheeting for temporary signs and devices shall meet the requirements of ASTM D 4956 Type III except as noted in Subsection 1015.05(f). Reflective sheeting shall be an approved product listed in QPL 13.

Type III - A high-intensity retroreflective sheeting that is typically encapsulated glass-bead retroreflective material.

Type VI - An elastomeric high-intensity retroreflective sheeting without adhesive. This sheeting is typically a vinyl microprismatic retroreflective material.

Type X - A super high-intensity retroreflective sheeting having highest retroreflectivity characteristics at medium distances. This sheeting is typically an unmetalized microprismatic retroreflective element material.

(b) Fluorescent Pink Retroreflective Sheeting: Signs for temporary control of traffic through incident management areas shall be Type VI fluorescent pink retroreflective sheeting and shall comply with the MUTCD. Temporary traffic control signs for incident management shall be placed to notify motorists of upcoming incidents on the roadway, and shall be removed from public view once the incident has been managed. Physical properties shall comply with ASTM D 4956. Photometric properties shall be as follows.

(1) Retroreflectivity: Minimum Coefficients of Retroreflection shall be as specified in Table 1015-1.

Table 1015-1
Coefficients of Retroreflection for Fluorescent Pink Sheeting[1]

Observation Angle, degrees	Entrance Angle, degrees	Fluorescent Pink
0.2	-4	100
0.2	+30	40
0.5	-4	40
0.5	+30	15

[1]Minimum Coefficient of Retroreflection (R_A) (cd $lx^{-1}m^{-2}$)

(2) Color and Daytime Luminance: Color Chromaticity Coordinates and Daytime Luminance Factors shall be as specified in Table 1015-2.

Table 1015-2
Fluorescent Pink Color Specifications Limits (Daytime)

Chromaticity Coordinates (corner points) [1]								Luminance Factor, min.
1		2		3		4		Y%
x	y	x	y	x	y	x	y	25
0.450	0.270	0.590	0.350	0.644	0.290	0.536	0.230	

[1]The four pairs of chromaticity coordinates measured with CIE 2° Standard Observer and 45/0 (0/45) geometry and CIE D65 Standard Illuminant.

(c) Adhesive Classes: The adhesive required for retroreflective sheeting shall be Class 1 (pressure sensitive) as specified in ASTM D 4956.

(d) Accelerated Weathering: Reflective sheeting, when processed, applied and cleaned in accordance with the manufacturer's recommendations shall perform in accordance with the accelerated weathering standards in Table 1015-3.

Table 1015-3
Accelerated Weathering Standards[1]

Type	Retroreflectivity[2]				Colorfastness[3]	
	Orange/ Fluorescent Orange		All colors, except orange/Fluorescent Orange		Orange/ Fluorescent Orange	All colors, except orange/Fluorescent Orange
III	1 year	80[4]	3 years	80[4]	1 year	3 years
III (for drums)	1 year	80[4]	1 year	80[4]	1 year	1 year
VI	1/2 year	50[5]	1/2 year	50[5]	1/2 year	1/2 year
X	1 year	80[6]	3 years	80[6]	1 year	3 years

[1]At an angle of 45° from the horizontal and facing south in accordance with ASTM G 7 at an approved test facility in Louisiana or South Florida.
[2]Percent retained retroreflectivity of referenced table after the outdoor test exposure time specified.
[3]Colors shall conform to the color specification limits of ASTM D 4956 after the outdoor test exposure time specified.
[4]ASTM D 4956, Table 8.
[5]ASTM D 4956, Table 13.
[6]ASTM D 4956, Table 4.

(e) Expected Sign Life Data and Performance: The sheeting manufacturer shall supply expected retroreflectivity service life curves for each of the following sign sheeting colors: white, green, blue, brown, red, and yellow. The service life curves shall be plots of the 95 percent expected life plotted on an x-y graph with life years on the x-axis and retroreflectivity on the y-axis. The expected life shall account for worst case installations, equivalent to an installation in South Louisiana with the sign facing to the South. The sheeting manufacturer shall also supply a table of expected life values taken from the service life curves for Revision Number 2 to the 2003 Edition of the MUTCD minimum reflectivity requirements published in the Federal Register on December 21, 2007. Reflective sheeting for signs, when processed, applied and cleaned in accordance with the manufacturer's recommendations shall perform outdoors in accordance with the performance standards in Table 1015-4.

Table 1015-4
Reflective Sheeting Performance Standards

Type	Retroreflectivity[1] -- Durability[2]				Colorfastness[3]
	Orange/ Fluorescent Orange		All colors, except orange/Fluorescent Orange		
III	3 years	80[4]	10 years	80[4]	3 years
X	3 years	80[5]	7years	80[5]	3 years

[1]Percent retained retroreflectivity of referenced table after installation and the field exposure time specified.
[2]All sheeting shall maintain its structural integrity, adhesion and functionality after installation and the field exposure time specified.
[3]All colors shall conform to the color specification limits of ASTM D 4956 after installation and the field exposure time specified.
[4]ASTM D4956, Table 8.
[5]ASTM D 4956, Table 4.

(f) Temporary Signs, Barricades, Channelizing Devices, Drums and Cones: Reflective sheeting for temporary signs, barricades and channelizing devices, shall meet the requirements of ASTM D 4956, Type III except that temporary warning construction signs used on the mainline of freeways and expressways shall be fluorescent orange and meet the requirements of ASTM D 4956, Type X.

Reflective sheeting for vertical panels shall meet the requirements of ASTM D 4956, Type III.

Reflective sheeting for drums shall be a minimum of 6 inches (150 mm) wide and shall meet the requirements of ASTM D 4956, Type III, and the Supplementary Requirement S2 for Reboundable Sheeting as specified in ASTM D 4956. Reflective sheeting for traffic cone collars shall meet the requirements of ASTM D 4956, Type III or Type VI.

(g) Sheeting Guaranty. The contractor shall provide the Department with a guaranty from the sheeting manufacturer stating that if the retroreflective sheeting fails to comply with the performance requirements of this subsection, the sheeting manufacturer shall do the following:

Table 1015-5
Manufacturer's Guaranty-Reflective Sheeting

Type	Manufacturer shall restore the sign face in its field location to its original effectiveness at no cost to the Department if failure occurs during the time period[1] as specified below		Manufacturer shall replace the sheeting required to restore the sign face to its original effectiveness at no cost to the Department if failure occurs during the time period[1] as specified below
	Orange/Fluorescent Orange	All colors, except orange/Fluorescent Orange	All colors, except orange/Fluorescent Orange
III	<3 years	<7 years	7-10 years
X	<3 years	<5 years	5-7 years

[1] From the date of sign installation.

Replacement sheeting for sign faces, material, and labor shall carry the unexpired guaranty of the sheeting for which it replaces.

The sign fabricator shall be responsible for dating all signs with the month and year of fabrication at the time of sign fabrication. This date shall constitute the start of the guaranty obligation period.

Subsection 1015.11 - Preformed Plastic Pavement Marking Tape (06/07), Pages 842 – 844.

Delete the contents of this subsection and substitute the following.

1015.11 PREFORMED PLASTIC PAVEMENT MARKING TAPE.

(a) General: Preformed plastic pavement marking tape shall be approved products listed on QPL 64 and shall comply with ASTM D4505 Retroreflectivity Level I or Level II, or DOTD Intersection Grade (as specified below), except as modified herein. The marking tape shall be Class 2 or 3. The type and color shall be in accordance with the plans and the MUTCD.

(b) Thickness: All preformed plastic pavement marking tape shall have a minimum overall thickness of 0.060 inches (1.5 mm) when tested without the adhesive.

(c) Friction Resistance: The surface of the Retroreflectivity Level II preformed plastic pavement marking tape shall provide a minimum frictional resistance value of 35 British Polish Number (BPN) when tested according to ASTM E303. The surface of the Retroreflectivity Level I and DOTD Intersection Grade preformed plastic pavement marking tape shall provide a minimum frictional resistance value of 45 BPN when tested according to ASTM E303. Values for the Retroreflectivity Level I material with a raised surface pattern as defined in ASTM D4505 are calculated by averaging values taken at downweb and at a 45 degrees angle from downweb.

(d) Retroreflective Requirements: The preformed plastic pavement marking tape shall have the minimum initial specific luminance values shown in Table 1015-7 when measured in accordance with ASTM D 4061.

Table 1015-7
Specific Luminance of Preformed Plastic Tape

Type	Observation Angle, degrees	Entrance Angle, degrees	Specific Luminance (mcd/sq m/lx)	
			White	Yellow
Retroreflectivity Level I	1.05	88.76	500	300
DOTD Intersection Grade	1.05	88.76	375	250
Retroreflectivity Level II	1.05	88.76	250	175

(e) Durability Requirements: The DOTD Intersection Grade preformed plastic pavement marking tape shall show no appreciable fading, lifting or shrinkage for a least 12 months after placement when placed in accordance with the manufacturer's recommended procedures on pavement surfaces having a daily traffic count not to exceed 15,000 ADT per lane.

The Retroreflectivity Level I preformed plastic pavement marking tape shall show no appreciable fading, lifting or shrinkage for a least 4 years after placement for longitudinal lines and at least 2 years after placement for symbols and legends.

The Retroreflectivity Level I preformed plastic pavement marking tape shall also retain the following reflectance values for the time period detailed in Table 1015-8.

Table 1015-8
Retained Specific Luminance for Retroreflectivity Level I
Preformed Plastic Pavement Marking Tape

Time	Observation Angle, degrees	Entrance Angle, degrees	Specific Luminance (mcd/sq m/lx)	
			White	Yellow
1 year	1.05	88.76	400	240
4 years (2 years for symbols and legend)	1.05	88.76	100	100

(f) Plastic Pavement Marking Tape Guaranty (DOTD Intersection Grade and Retroreflectivity Level I): If the plastic pavement marking tape fails to comply with the performance and durability requirements of this subsection within 12 months for DOTD Intersection Grade and 4 years for Retroreflectivity Level I, the manufacturer shall replace the plastic pavement marking material at no cost to the Department.

SECTION 1020 – TRAFFIC SIGNALS:

Subsection 1020.01 – Traffic Signal Heads (06/07), Pages 873 – 884.

Delete the contents of Heading (a), General Requirements and substitute the following.

(a) General Requirements: Traffic signal sections, beacon sections and pedestrian signal sections shall be of the adjustable type. Materials and construction of each section shall be the same.

Signals shall be constructed for either 8 or 12-inch (200 mm or 300 mm) lens in accordance with the plans. Signal sections shall have three to five sections per face and beacon sections have only one section per face. Signal sections and associated brackets shall be finished inside and out with two coats of high grade dark olive green enamel, color number 14056 according to Federal Standard No. 595b with each coat independently baked. Visors shall be coated green on the outside and black on the inside. Edges shall be deburred and smooth with no sharp edges.

Subsection 1020.04 – Poles for Traffic Signal Systems (06/07), Pages 890 – 894.

Delete the sixth paragraph of Heading (a), Pedestal Support Signal Poles, and substitute the following.

Pedestals shall be finished with at least one coat of rustproofing primer, applied to a clean surface and one coat of dark olive green enamel, color number 14056 according to Federal Standard No. 595b.

LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SUPPLEMENTAL SPECIFICATIONS

FEMALE AND MINORITY PARTICIPATION IN CONSTRUCTION

The following notice shall be included in, and shall be a part of, all solicitations for offers and bids on all federal and federally assisted construction contracts or subcontracts in excess of $10,000 to be performed in geographical areas designated by the director of OFCCP. Execution of the contract by the successful bidder and any subsequent subcontracts will be considered the contractor's and subcontractor's commitment to the EEO provisions contained in this notice.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

2. The goals for minority and female participation, expressed in percentage terms for the contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

AREA	PARISH OR COUNTY	GOAL (%)
	FEMALE PARTICIPATION	
-	All Covered Areas	6.9
	MINORITY PARTICIPATION (UNDER NEW ORLEANS PLAN)	
-	* See Note Below	20 to 23
	MINORITY PARTICIPATION (NOT UNDER NEW ORLEANS PLAN)	
1	Jefferson LA, Orleans LA, St. Bernard LA, St. Tammany LA	31.0
2	Assumption LA, Lafourche LA, Plaquemines LA, St. Charles LA, St. James LA, St. John the Baptist LA, Tangipahoa LA, Terrebonne LA, Washington LA, Forrest MS, Lamar MS, Marion MS, Pearl River MS, Perry MS, Pike MS, Walthall MS	27.7
3	Ascension LA, East Baton Rouge LA, Livingston LA, West Baton Rouge, LA	26.1
4	Concordia LA, East Feliciana LA, Iberville, LA, Pointe Coupee LA, St. Helena LA, West Feliciana LA, Adams MS, Amite MS, Wilkinson, MS	30.4
5	Lafayette LA	20.6
6	Acadia LA, Evangeline LA, Iberia LA, St. Landry LA, St. Martin LA, St. Mary LA, Vermillion LA	24.1
7	Calcasieu LA	19.3
8	Allen LA, Beauregard LA, Cameron LA, Jefferson Davis LA, Vernon LA	17.8
9	Grant LA, Rapides LA	25.7
10	Avoyelles LA, Bienville LA, Bossier LA, Caddo LA, Claiborne LA, DeSoto LA, Natchitoches LA, Red River LA, Sabine LA, Webster LA, Winn LA	29.3
11	Ouachita LA	22.8
12	Caldwell LA, Catahoula LA, East Carroll LA, Franklin LA, Jackson LA, LaSalle LA, Lincoln LA, Madison LA, Morehouse LA, Richland LA, Tensas LA, Union LA, West Carroll LA,	27.9

*These goals apply only to those contractors signatory to the New Orleans Plan and only with respect to those trades which have unions participating in said Plan. The New Orleans Plan Covered Area is as follows: The parishes of Orleans, Jefferson, St. Bernard, St. Tammany, St. Charles, St. John the Baptist, Plaquemines, Washington, Terrebonne, Tangipahoa (that area east of the Illinois Central Railroad), Livingston (that area southeast of the line from a point off the Livingston and Tangipahoa Parish line adjacent from New Orleans and Baton Rouge), St. James (that area southeast of a line drawn from the Town of Gramercy to the point of intersection of St. James, Lafourche and Assumption Parishes), and Lafourche.

These goals are applicable to all the contractor's construction work (whether or not it is federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor is also subject to the goals for both its federally involved and non-federally involved construction.

The contractor's compliance with the Executive Order and the regulations in 41 CFR 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor, or from project to project, for the purpose of meeting the contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The contractor shall provide written notification to the Regional Administrator of the Office of Federal Contract Compliance Programs (555 Griffin Square Building, Dallas, TX 75202) within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract. The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and geographical area in which the contract is to be performed.

4. As used in this Notice and in the contract, the "covered area" is that area shown in the foregoing table in which the project is located.

The following Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246) shall be included in, and shall be a part of, all solicitations for offers and bids on all federal and federally assisted construction contracts or subcontracts in excess of $10,000. Execution of the contract by the successful bidder and any

subsequent subcontracts will be considered the contractor's and subcontractor's commitment to the EEO provisions contained in these Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246).

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)

1. As used in these specifications:
   a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
   b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
   c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U. S. Treasury Department Form 941.
   d. "Minority" includes:
      (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
      (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
      (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
      (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. If the contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, he shall include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation.

3. If the contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each contractor or subcontractor participating in an approved Plan is required to comply with his obligations under the EEO clause, and to make good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other contractor or subcontractors toward a goal in an

approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals.

4. The contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in geographical areas where they do not have a federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any OFCCP office or from federal procurement contracting officers. The contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the contractor has a collective bargaining agreement, to refer either minorities or women, shall excuse the contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the contractor during the training period, and the contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U. S. Department of Labor.

7. The contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the contractor's compliance with these specifications will be based on his effort to achieve maximum results from its actions. The contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

a. Ensure and maintain a working environment free of harassment, intimidation and coercion at all sites, and in all facilities at which the contractor's employees are assigned to work. The contractor, where possible, will assign 2 or more women to each construction project. The contractor shall ensure that all foremen, superintendents and other on-site supervisory personnel are aware of and carry out the contractor's obligation to maintain such a working environment with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to

community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the contractor by the union or, if referred, not employed by the contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the contractor has taken.

d. Provide immediate written notification to the Director when the union or unions with which the contractor has a collective bargaining agreement has not referred to the contractor a minority person or woman set by the contractor, or when the contractor has other information that the union referral process has impeded the contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the contractor's employment needs, especially those programs funded or approved by the Department of Labor. The contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the contractor in meeting his EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as superintendent, general foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the contractor's EEO policy externally by including it in ny advertising in the news media, including minority and female news media, and providing written notification to and discussing the contractor's EEO policy with other contractors and subcontractors with whom the contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the contractor's recruitment area and employment needs. Not later than 1 month prior to the date for the acceptance of

applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations such as the above describing the openings, screening procedures and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women, and where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR 60-3.

l. Conduct, at least annually, an inventory and evaluation of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling its obligations under 7a through 7p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the contractor's minority and female workforce participation, makes a good faith effort to meet his goals and timetables and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the contractor. The obligation to comply, however, is the contractor's and failure of such a group to fulfill an obligation shall not be a defense for the contractor's noncompliance.

9. A goal for minorities and a separate goal for women have been established. The contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the contractor may be in violation of the Executive Order if a group is employed

in a substantially disparate manner (for example, even though the contractor has achieved its goals for women generally, the contractor may be in violation of the Executive Order if a minority group of women in underutilized).

10. The contractor shall not use the goals or affirmative action standards to discriminate against any person because of race, color, religion, sex or national origin.

11. The contractor shall not enter into a subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The contractor, in fulfilling his obligations under these specifications, shall implement specific affirmative actions steps, at least as extensive as the standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the contractor fails to comply with the requirements of the Executive Order, the implementing regulations or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors will not be required to maintain separate records.

15. Nothing herein shall be construed as a limitation on the application of other laws which establish different standards of compliance or on the application of requirements for hiring of local or other area residents (e.g., those under the Pubic Works Employment Act of 1977 and the Community Development Block Grant Program).

16. In addition to the reporting requirements set forth elsewhere in this contract, the contractor and subcontractors holding subcontracts (not including material suppliers) in excess of $10,000

shall submit for every month of July during which work is performed, employment data as contained under Form FHWA-1391 in accordance with instructions included thereon.

LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SUPPLEMENTAL SPECIFICATIONS

SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES

1. General

a. Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal employment opportunity as required by Executive Orders 11246 and 11375 are set forth in Required Contract Provisions (Form FHWA-1273) and these Supplemental Specifications which are imposed pursuant to Section 140 of Title 23, U.S.C., as established by Section 22 of the Federal Aid Highway Act of 1968. The requirements set forth herein shall constitute the specific affirmative action requirements for project activities under this contract and supplement the EEO requirements set forth in the Required Contract Provisions.

b. The contractor shall work with the Department and the Federal Government in carrying out EEO obligations and in their review of his activities under the contract.

c. The contractor and all his subcontractors holding subcontracts not including material suppliers, of $10,000 or more, shall comply with the following minimum specific requirement activities of EEO. The EEO requirements of Executive Order 11246, as set forth in the Federal-Aid Policy Guide 23 CFR 230A, are applicable to material suppliers as well as contractors and subcontractors. The contractor shall include these requirements in every subcontract of $10,000 or more with such modification of language as necessary to make them binding on the subcontractor.

2. EEO Policy

The contractor shall accept as his operating policy the following statement which is designed to further the provision of EEO to all persons without regard to their race, color, religion, sex or national origin, and to promote the full realization of EEO through a positive continuing program:

It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color or national origin. Such action shall include employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship and on-the-job training.

3. EEO Officer

The contractor shall designate and make known to the Department an EEO Officer who shall have the responsibility for and must be capable of effectively administering and promoting an active contractor EEO program and who must be assigned adequate authority and responsibility to do so.

4. Dissemination of Policy

a. All members of the contractor's staff who are authorized to hire, supervise, promote and discharge employees, or who recommend such action, or who are substantially involved in such action, shall be made fully cognizant of and shall implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions shall be taken as a minimum:

(1) Periodic meetings of supervisory and personnel office employees shall be conducted before the start of work and then at least once every 6 months, at which time the contractor's EEO policy and its implementation shall be reviewed and explained. The meetings shall be conducted by the EEO Officer or other knowledgeable company official.

(2) All new supervisory or personnel office employees shall be given a thorough indoctrination by the EEO Officer or other knowledgeable company official covering all major aspects of the contractor's EEO obligations within 30 days after their reporting for duty with the contractor.

(3) All personnel who are engaged in direct recruitment for the project shall be instructed by the EEO Officer or appropriate company official in the contractor's procedures for locating and hiring minority group employees.

b. To make the contractor's EEO policy known to all employees, prospective employees and potential sources of employees, i.e., schools, employment agencies, labor unions (where appropriate), college placement officers, etc., the contractor shall take the following actions:

(1) Notices and posters setting forth the contractor's EEO policy shall be placed in areas readily accessible to employees, applicants for employment and potential employees.

(2) The contractor's EEO policy and the procedures to implement such policy shall be brought to the attention of employees by means of meetings, employee handbooks or other appropriate means.

5. Recruitment

a. When advertising for employees, the contractor shall include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements shall be published in newspapers or other publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

b. The contractor shall, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants, including, but not limited to, State employment agencies, schools, colleges and minority group organizations. To meet this requirement, the contractor shall, through his EEO Officer, identify sources of potential minority group employees and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

If the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with equal employment opportunity contract provisions. (The U.S. Department of Labor has held that where implementation of such agreements has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

c. The contractor shall encourage his present employees to refer minority group applicants for employment by posting appropriate notices or bulletins in areas accessible to all such employees. In addition, information and procedures with regard to referring minority group applicants shall be discussed with employees.

6. Personnel Actions

Wages, working conditions and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff and termination, shall be taken without regard to race, color, religion, sex or national origin. The following procedures shall be followed.

a. The contractor shall conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor shall periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor shall periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor shall promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor shall promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, shall attempt to resolve such complaints, and shall take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor shall inform every complainant of all of his avenues of appeal.

7. Training and Promotion

a. The contractor shall assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship and job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. If the Supplemental Specifications for Job Training are provided under this contract, this subparagraph will be superseded as indicated in Attachment 2.

c. The contractor shall advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor shall periodically review the training and promotion potential of minority group and women employees and shall encourage eligible employees to apply for such training and promotion.

8. Unions

If the contractor relies in whole or in part upon unions as a source of employees, the contractor shall use his best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent shall include the procedures set forth below:

a. The contractor shall use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

b. The contractor shall use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex or national origin.

c. The contractor shall obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the Department and shall set forth what efforts have been made to obtain such information.

d. If the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor shall, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex or national origin, making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The U.S. Department of Labor has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) If the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these specifications, such contractor shall immediately notify the Department.

9. Subcontracting

a. The contractor shall use his best efforts to solicit bids from and utilize minority group subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of minority-owned construction firms from the Department.

b. The contractor shall use his best efforts to ensure subcontractor compliance with their EEO obligations.

10. Records and Reports

a. The contractor shall keep such records as necessary to determine compliance with the contractor's EEO obligations. The records kept by the contractor shall indicate:

(1) the number of minority and nonminority group members and women employed in each work classification on the project,

(2) the progress and efforts being made in cooperation with unions to increase employment opportunities for minorities and women (applicable only to contractors who rely in whole or in part on unions as a source of their work force),

(3) the progress and efforts being made in locating, hiring, training, qualifying and upgrading minority and female employees, and

(4) the progress and efforts being made in securing the services of minority group subcontractors with meaningful minority and female representation among their employees.

b. All such records must be retained for a period of 3 years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the Department and the Federal Highway Administration.

c. The contractor shall submit an annual report to the Department each July for the duration of the project, indicating the number of minority, women and nonminority group employees currently engaged in each work classification required by the contract work. This information shall be reported on Form PR-1391. If job training is required, the contractor shall furnish Form DOTD 03-37-0014.

LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

1. These contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.

3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.

4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:

Section I, paragraph 2;
Section IV, paragraphs 1, 2, 3, 4, and 7;
Section V, paragraphs 1 and 2a through 2g.

5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employees or their representatives.

6. **Selection of Labor:** During the performance of this contract, the contractor shall not:

a. discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or

b. employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

II. NONDISCRIMINATION

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

1. **Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.

b. The contractor will accept as his operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training."

2. **EEO Officer:** The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.

3. **Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not

less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. **Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

5. **Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

6. **Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

7. **Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the SHA and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.

8. **Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.

c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.

9. **Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and

(4) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. The contractors will submit an annual report to the SHA each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data.

III. NONSEGREGATED FACILITIES

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).

c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of $10,000 or more and that it will retain such certifications in its files.

IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

1. **General:**

a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of

payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.

b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.

c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

2. **Classification:**

a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.

b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:

(1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;

(2) the additional classification is utilized in the area by the construction industry;

(3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(4) with respect to helpers, when such a classification prevails in the area in which the work is performed.

c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary

e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

3. **Payment of Fringe Benefits:**

a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.

b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

4. **Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:**

a. *Apprentices:*

(1) Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.

(2) The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not be

greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

(3) Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

(4) In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. *Trainees:*

(1) Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.

(2) The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(3) Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which case such trainees shall receive the same fringe benefits as apprentices.

(4) In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. *Helpers*:

Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV.2. Any worker listed on a payroll at a helper wage rate, who is not a helper under a approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. **Apprentices and Trainees (Programs of the U.S. DOT):**

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

6. **Withholding:**

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

7. **Overtime Requirements:**

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. **Violation:**

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of $10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. **Withholding for Unpaid Wages and Liquidated Damages:**

The SHA shall upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

V. STATEMENTS AND PAYROLLS

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

1. **Compliance with Copeland Regulations (29 CFR 3):**

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. **Payrolls and Payroll Records:**

a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.

b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices, trainees, and helpers described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period). The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;

(2) that such laborer or mechanic (including each apprentice, trainee, and helper) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;

(3) that each laborer or mechanic has been paid not less that the applicable wage rate and fringe benefits or cash equivalent for the classification of worked performed, as specified in the applicable wage determination incorporated into the contract.

e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.

f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.

g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or

to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR

1. On all Federal-aid contracts on the National Highway System, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than $1,000,000 (23 CFR 635) the contractor shall:

a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.

b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.

c. Furnish, upon the completion of the contract, to the SHA resident engineer on Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.

2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

VII. SUBLETTING OR ASSIGNING THE CONTRACT

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).

a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

Notice to all Personnel engaged on Federal-Aid Highway Projects

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined not more that $10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $100,000 or more.)

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 92-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. **Instructions for Certification - Primary Covered Transactions:** (Applicable to all Federal-aid contracts - 49 CFR 29)

a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals.

Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and

d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

2. **Instructions for Certification - Lower Tier Covered Transactions:** (Applicable to all subcontracts, purchase orders and other lower tier transactions of $25,000 or more - 49 CFR 29)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Covered Transactions:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

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

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

REQUIRED CONTRACT PROVISIONS FOR DBE PARTICIPATION IN FEDERAL AID CONSTRUCTION CONTRACTS (DBE NO GOAL PROJECT)

A. AUTHORITY AND DIRECTIVE: The Code of Federal Regulations, Title 49, Part 26 (49 CFR 26) as amended and the Louisiana Department of Transportation and Development's (DOTD) Disadvantaged Business Enterprise (DBE) Program, are hereby made a part of and incorporated by reference into this contract. Copies of these documents are available upon request, from DOTD, Compliance Programs Office, P. O. Box 94245, Baton Rouge, LA 70804-9245.

B. POLICY: It is the policy of the DOTD that it shall not discriminate on the basis of race, color, national origin, or sex in the award of any United States Department of Transportation (US DOT) financially assisted contracts or in the administration of its DBE program or the requirements of 49 CFR Part 26. The DOTD shall take all necessary and reasonable steps under 49 CFR Part 26 to ensure nondiscrimination in the award and administration of US DOT assisted contracts. The DBE program, as required by 49 CFR Part 26 and as approved by US DOT, is incorporated by reference in this agreement. Implementation of this program is a legal obligation and failure to carry out its terms shall be treated as a violation of this agreement. Upon notification of failure to carry out the approved DBE program, the US DOT may impose sanctions as provided for under 49 CFR Part 26 and may in appropriate cases, refer the matter for enforcement under 18 U.S.C. 1001 and/or the Program Fraud Civil Remedies Act of 1986 (31 U.S.C. 3801 et seq).

C. DBE OBLIGATION: The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of US DOT assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the DOTD deems appropriate.

The preceding policy and DBE obligation shall apply to this contract and shall be included in the requirements of any subcontract. Failure to carry out the requirements set forth therein shall constitute a breach of contract and, after notification by DOTD, may result in termination of the contract, a deduction from the contract funds due or to become due the contractor or other such remedy as DOTD deems appropriate. The contractor is encouraged to use the services offered by banks in the community which are owned and controlled by minorities or women when feasible and beneficial.

The term DBE is inclusive of women business enterprises (WBE) and all obligations applicable to DBE shall apply to firms certified and listed as WBE.

D. SPECIFIC CONTRACTOR REQUIREMENTS: This project has not been selected for a specific DBE goal; however, the contractor is required to meet the following obligations and by signing this bid gives the assurances that:

(1) The contractor shall not discriminate on the basis of race, color, national origin, or sex in subcontracting work on this project.

(2) The contractor shall promptly pay subcontractors and suppliers their respective subcontract amounts within 14 calendar days after the contractor receives payment from DOTD for the items of work performed by the subcontractors in accordance with Louisiana Revised Statute 9:2784. Retainage may not be withheld.

a. Delay or postponement of payment to the subcontractor may be imposed by the contractor only when there is evidence that the subcontractor has failed to pay its labor force and suppliers for materials received and used on the project. Delay or postponement must have written approval by the Project Engineer.

(3) The contractor shall submit DOTD Forms OMF-1A, Request to Sublet, and OMF-2A, Subcontractor's EEO Certification and have them approved by the DOTD prior to any subcontracting work being performed. The requirements of Subsection 108.01, Subletting of Contract, of the Project Specifications shall be met.

(4) The contractor understands that these provisions are applicable to all bidders including DBE bidders.

General Decision Number: LA080003 04/17/2009 LA3

Superseded General Decision Number: LA20070005

State: Louisiana

Construction Type: Building

Counties: Allen, Assumption, Avoyelles, Beauregard, Bienville, Caldwell, Cameron, Catahoula, Claiborne, Concordia, De Soto, East Carroll, East Feliciana, Evangeline, Franklin, Grant, Iberia, Iberville, Jackson, Jefferson Davis, La Salle, Lincoln, Madison, Morehouse, Natchitoches, Pointe Coupee, Red River, Richland, Sabine, St Helena, St Mary, Tangipahoa, Tensas, Union, Vermilion, Vernon, Washington, West Carroll, West Feliciana and Winn Counties in Louisiana.

BUILDING CONSTRUCTION PROJECTS (Does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	02/08/2008
1	03/07/2008
2	04/04/2008
3	05/09/2008
4	06/13/2008
5	07/11/2008
6	09/05/2008
7	01/16/2009
8	02/13/2009
9	03/13/2009
10	03/20/2009
11	04/17/2009

ELEC0130-001 12/01/2008

ASSUMPTION and ST. MARY (Northeast of Atchafalaya River) PARISHES

	Rates	Fringes
ELECTRICIAN (includes low voltage wiring and installation of fire alarms, security systems, telephones, computers, and temperature controls)	$ 25.00	8.33

ELEC0194-001 09/04/2008

BIENVILLE, CLAIBORNE, DE SOTO, NATCHITOCHES (Northeast of the Red River), AND RED RIVER PARISHES

	Rates	Fringes
ELECTRICIAN (includes low		

voltage wiring and
installation of fire alarms,
security systems, telephones,
computers, and temperature
controls).....$ 23.95 8.61

ELEC0446-001 03/01/2009

CALDWELL, EAST CARROLL, FRANKLIN, JACKSON, LINCOLN, MADISON, MOREHOUSE, RICHLAND, TENSAS, UNION AND WEST CARROLL PARISHES

	Rates	Fringes
ELECTRICIAN (includes low voltage wiring and installation of fire alarms, security systems, telephones, computers, and temperature controls)	$ 19.65	8.18

ELEC0576-001 03/01/2009

AVOYELLES, CATAHOULA, CONCORDIA, EVANGELINE, GRANT, LA SALLE, NATCHITOCHES (Southwest of Red River), SABINE, VERNON AND WINN PARISHES

	Rates	Fringes
ELECTRICIAN (includes low voltage wiring and installation of fire alarms, security systems, telephones, computers, and temperature controls)	$ 21.60	5.62

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* ELEC0861-001 04/01/2009

ALLEN, BEAUREGARD, CAMERON, IBERIA, JEFFERSON DAVIS, ST. MARY (Southwest of Atchafalaya River), AND VERMILION PARISHES

	Rates	Fringes
ELECTRICIAN (includes low voltage wiring and installation of fire alarms, security systems, telephones, computers, and temperature controls)	$ 23.50	9.00

ELEC0995-001 01/01/2009

EAST FELICIANA, IBERVILLE, POINTE COUPEE, ST. HELENA, AND WEST FELICIANA PARISHES

	Rates	Fringes
ELECTRICIAN (includes low		

voltage wiring and
installation of fire alarms,
security systems, telephones,
computers, and temperature
controls).....$ 21.87 7.67

ELEC1077-001 03/01/2009

TANGIPAHOA AND WASHINGTON PARISHES

	Rates	Fringes
ELECTRICIAN (includes low voltage wiring)	$ 21.50	6.26

IRON0058-001 06/01/2008

TANGIPAHOA (Southeastern Portion) AND WASHINGTON PARISHES

	Rates	Fringes
Ironworkers, Structural	$ 19.40	6.82

IRON0591-001 06/01/2008

BIENVILLE, CLAIBORNE, DESOTO, NATCHITOCHES, RED RIVER, AND SABINE PARISHES

	Rates	Fringes
IRONWORKER, STRUCTURAL	$ 19.45	6.48

IRON0623-001 06/01/2008

ASSUMPTION, AVOYELLES, CATAHOULA (Southern Tip Only), CONCORDIA (Southern Portion), EAST FELICIANA, IBERIA, IBERVILLE, POINTE COUPEE, ST. HELENA, ST. MARY, TANGIPAHOA (Northwestern Portion), AND WEST FELICIANA PARISHES

	Rates	Fringes
IRONWORKER, STRUCTURAL	$ 19.60	6.32

IRON0710-001 06/01/2008

ALLEN, BEAUREGARD, CALDWELL, CAMERON, CATAHOULA, CONCORDIA (Northern Portion), EAST CARROLL, EVANGELINE, FRANKLIN, GRANT, JACKSON, JEFFERSON DAVIS, LASALLE, LINCOLN, MADISON, MOREHOUSE, RICHLAND, TENSAS, UNION, VERMILION, VERNON, WEST CARROLL, AND WINN PARISHES

	Rates	Fringes
IRONWORKER, STRUCTURAL	$ 19.50	6.43

---

* SFLA0669-001 04/01/2009

	Rates	Fringes

SPRINKLER FITTER.....$ 25.77 11.80

SHEE0214-001 07/01/2007

Washington Parish

	Rates	Fringes
SHEET METAL WORKER (includes HVAC Duct).....	$ 22.86	8.72

SHEE0214-004 08/01/2007

Allen, Assumption, Beauregard, Cameron, East Feliciana, Evangeline, Iberia, Iberville, Jefferson Davis, Pointe Coupee, St. Helena, St. Mary, Tangipahoa, Vermilion, and West Feliciana Parishes

	Rates	Fringes
SHEET METAL WORKER (includes HVAC Duct).....	$ 23.36	8.315

SHEE0361-001 01/01/2009

AVOYELLES, BIENVILLE, CALDWELL, CATAHOULA, CLAIBORNE, CONCORDIA, DE SOTO, EAST CARROLL, FRANKLIN, GRANT, JACKSON, LA SALLE, LINCOLN, MADISON, MOREHOUSE, NATCHITOCHES, RED RIVER, RICHLAND, SABINE, TENSAS, UNION, VERNON, WEST CARROLL AND WINN PARISHES

	Rates	Fringes
Sheet Metal Worker (includes HVAC duct).....	$ 24.18	9.10

SULA2004-004 03/25/2004

	Rates	Fringes
Carpenters		
Drywall & Metal Stud Installation.....	$ 14.05	0.00
Formbuilding/Formsetting....	$ 13.31	0.00
All Other Work.....	$ 12.70	1.21
LABORER		
Common.....	$ 8.74	0.00
Grade Checker.....	$ 10.00	0.00
PAINTER		
Brush, Roller, & Spray.....	$ 10.00	0.00
PLUMBER (including HVAC pipe)....	$ 16.90	0.00
Power Equipment Operator		
Backhoe/Excavator.....	$ 13.50	0.00
Bulldozer.....	$ 14.83	1.62

Forklift	$ 14.29	0.00
Front End Loader	$ 12.88	0.00
Roller	$ 11.50	0.00
Trackhoe	$ 14.63	1.62

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor

200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

==========

END OF GENERAL DECISION

General Decision Number: LA080012 02/08/2008 LA12

Superseded General Decision Number: LA20070033

State: Louisiana

Construction Types: Highway

Counties: Allen, Assumption, Avoyelles, Beauregard, Bienville, Caldwell, Cameron, Catahoula, Claiborne, Concordia, De Soto, East Carroll, East Feliciana, Evangeline, Franklin, Grant, Iberia, Iberville, Jackson, Jefferson Davis, La Salle, Lincoln, Madison, Morehouse, Natchitoches, Pointe Coupee, Red River, Richland, Sabine, St Helena, St Mary, Tangipahoa, Tensas, Union, Vermilion, Vernon, Washington, West Carroll, West Feliciana and Winn Counties in Louisiana.

HIGHWAY CONSTRUCTION PROJECTS (does not include building structures in rest area projects)

Modification Number	Publication Date
0	02/08/2008

SULA2004-016 08/03/2004

	Rates	Fringes
Carpenter (including formbuilding/formsetting)	$ 11.55	1.85
Cement Mason/Concrete Finisher	$ 11.26	
Electrician (including traffic signal wiring and installation)	$ 12.00	
Ironworker, Reinforcing	$ 10.69	
Laborers		
Asphalt Raker	$ 8.12	
General including landscape/erosion	$ 8.07	
Guardrail	$ 8.22	
Mason Tender	$ 8.46	
Pipelayer	$ 8.19	
Striping/Pavement Marker including paint striping and attachment of reflector buttons	$ 7.91	
Traffic Control including flagger, sign placement, barricades, and cones	$ 7.95	
Piledriverman	$ 11.87	
Power Equipment Operators		
Asphalt Distributor	$ 8.84	
Asphalt Paving Machine	$ 12.23	
Asphalt Screed	$ 10.50	
Asphalt/Aggregate Spreader	$ 10.11	
Backhoe/Excavator	$ 10.96	
Bobcat/Skid Loader	$ 10.33	
Broom Sweeper	$ 8.70	
Bulldozer	$ 11.87	

Concrete Saw.....$ 12.46
Crane.....$ 13.63
Front End Loader.....$ 9.62
Grade Checker.....$ 9.00
Mechanic.....$ 13.67
Milling/Cold Planing
Machine including rotomill
and CMI cutter.....$ 11.65
Motor Grader/Blade.....$ 11.23
MTV/Shuttlebuggy.....$ 10.14
Oiler.....$ 10.20
Post Driver including
guardrails.....$ 12.21
Roller.....$ 9.68
Scraper.....$ 10.93
Stabilizer.....$ 9.85
Trackhoe.....$ 11.92
Tractor.....$ 9.49
Truck drivers
Dump (all types).....$ 8.56
Flatbed.....$ 9.86
Lowboy.....$ 11.02
Pickup including paint truck$ 9.30
Tack.....$ 9.61
Trailer.....$ 10.00
Water.....$ 9.27

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

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Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

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Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

==========

END OF GENERAL DECISION

PROJECT MANUAL

RENOVATION OF SARTO IRON BRIDGE–PHASE II

Big Bend, Louisiana

URS Project No. 19228178

June 2007
Revised March 17, 2008
Revised July 7, 2008
Revised December 16, 2008

URS CORPORATION

312 Treasure Place
Phone: (318) 253-4549

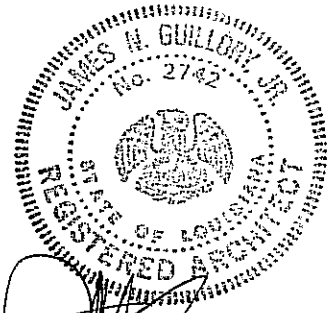
Marksville, LA 71351
Fax: (318) 253-4648

PROJECT MANUAL

PROJECT MANUAL

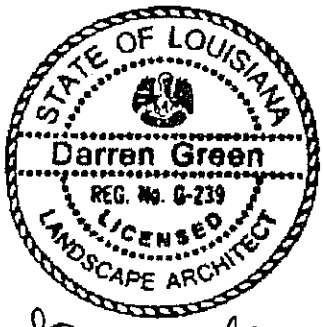
RENOVATIONS OF SARTO IRON BRIDGE – PHASE II
Big Bend, Louisiana

Divisions 1 through 14 of the Project Manual have been prepared or under the direct supervision of the licensed Architect whose seal/stamp appears below.



James Guillory, AIA Date: 1 - 15 - 09
Architect

Section 02880 of the Project Manual has been prepared by or under the direct supervision of the licensed Landscape Architect whose seal/stamp appears below.



Darren Green Date: 1-15-09
Landscape Architect

The following sections in Divisions 1 through 14 have been prepared by URS Corporation, A Professional Architectural/Engineering Corporation, by or under the direct supervision of James N. Guillory, AIA.

TABLE OF CONTENTS

DIVISION 1 – GENERAL REQUIREMENTS

DIVISION 2 – SITE WORK

SECTION 01010

SUMMARY OF WORK

PART 1 – GENERAL

1.1 REQUIREMENTS

The work to be performed under this contract shall consist of providing all plant, tools, equipment, materials, supplies, and manufactured articles and for furnishing all transportation and services, including fuel, power, water, and essential communications, and for the performance of all labor, work, or other activities required for the fulfillment of the contract in strict accordance with the specifications, schedules, drawings, and other contract documents as herein before defined, all of which are made a part hereof, and including such detail sketches as may be furnished by the engineer from time to time during construction in explanation of said contract documents. The work shall be complete, and all work, materials, and services not expressly shown or called for in the contract documents which may be necessary for the complete and proper construction of the work in good faith shall be performed, furnished, and installed by the contractor as though originally so specified or shown, at no increase in cost to the owner.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

The proposed work includes, but is not limited to base bid work; the renovation work on the bridge, east end approach and headwall, the educational kiosk, landscaping and all incidental construction as shown on the plans and as described in these specifications. In addition, proposed work to replace bearing piles supporting the existing west end approach as Additive Alternate No. 1 and the scoring and staining of the floor slab at the Interpretive Kiosk as Additive Alternate No. 2.

1.3 CONTRACT METHOD

The work specified herein shall be performed under a lump sum contract with unit prices for additional work.

1.4 WORK BY OTHERS

The contractor's attention is directed to the fact that other work may be conducted in the vicinity of the project site by others during the performance of the work of this contract. The contractor shall plan and conduct its work activities so as to cause a minimum of interference with the work of such others.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION 01010

SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 – GENERAL

Payment for work on this project shall include all compensation to be received by the contractor for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, and incidentals appurtenant to the items of work being described, as necessary to complete the various items of the work all in accordance with the requirements of the contract documents, including all appurtenances thereto, and including all costs of compliance with the regulations of public agencies having jurisdiction.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.1 GENERAL

The total bid price shall cover all work required by the contract documents. All costs in connection with the proper and successful completion of the work, including furnishing all materials, equipment, supplies, and appurtenances; providing all construction equipment, and tools; and performing all necessary labor and supervision to fully complete the work, shall be included in the base bid or additive alternates below.

3.2 MOBILIZATION/DEMOBILIZATION

Mobilization shall include:

- Preparing all necessary excavation, soil erosion control, and traffic control plans;
- Obtaining all permits, insurance, and bonds;
- Moving onto the site of all plant and equipment;
- Providing field office buildings, sanitary and potable water facilities as required for the proper performance and completion of the work.

The above referenced mobilization shall be included in the Lump Sum Base Bid for the project and shall include all labor, support, equipment and materials necessary to complete the mobilization and de-mobilization for the project.

3.3 SITE CONDITION SURVEY

The site condition survey of the project area shall be included in the lump sum base bid for the project and shall include all labor, support, equipment, and materials necessary to complete the survey.

3.4 TEMPORARY UTILITIES

The installation and maintenance of temporary utilities required for the contractor's operations shall be included in the lump sum base bid for the project and shall include all labor, equipment, and materials necessary.

3.5 CONSTRUCTION LAYOUT (FIELD ENGINEERING)

The construction layout of the project area shall be included in the lump sum base bid for the project and shall include all labor, equipment, and materials necessary to complete the establishing of baselines and any offsets required for construction.

END OF SECTION 01025

SECTION 01041

PROJECT COORDINATION

PART 1 – GENERAL

1.1 REQUIREMENTS

The contractor shall plan, schedule, and coordinate his operations in a manner that will facilitate the simultaneous progress of the work. Contractor shall plan, schedule and coordinate with all utilities in a manner conducive to timely and efficient progress in the execution of the contract.

1.2 NOTICES TO OWNERS AND AUTHORITIES

A. The contractor shall, as provided in the general conditions, notify owners of adjacent property and utilities when prosecution of the work may affect them.

When it is necessary to temporarily deny the access of owners or tenants to their property, or when any utility service connections must be interrupted, contractor shall give notices sufficiently in advance to enable the affected persons to provide for their needs. Notices shall conform to any applicable local ordinance and, whether delivered orally or in writing, shall include appropriate information concerning the interruptions and instructions on how to limit their inconvenience.

Utilities and other concerned agencies shall be contacted at least forty-eight (48) hours (unless otherwise noted) prior to cutting or closing streets or other traffic areas or excavating near underground utilities or pole lines.

1.3 TESTING LABORATORY

It shall be the contractor's responsibility to arrange for and pay for testing laboratory to determine that materials and workmanship comply with the requirements of these specifications. Such testing shall meet the requirements of all-pertinent codes and regulations and selected standards as specified elsewhere in these specifications. Testing services shall include the requirements of applicable sections of the technical specifications.

Representatives of the testing laboratory shall have access to the work at all times and facilities for such access shall be provided in order that the laboratory may perform its functions properly. The contractor shall consult the testing laboratory in advance to determine the time required to perform the tests and to issue each of the findings. The testing laboratory shall be notified by the contractor of any schedule changes. All samples, if any, shall be taken by the testing laboratory and any equipment, supplies, and the testing laboratory shall also provide delivery services that the laboratory requires.

1.4 COOPERATION WITHIN THIS CONTRACT

All firms or persons authorized to perform any work under this contract shall cooperate with the general contractor and his subcontractors or trades, and shall assist in incorporating the work of other trades where necessary or required.

Cutting and patching, drilling, and fitting shall be carried out where required by the trade or subcontractor having jurisdiction, unless otherwise indicated herein or as directed by the engineer.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION 01041

SECTION 01090

REFERENCE STANDARDS

PART 1 – GENERAL

1.5 SCOPE

This section covers reference standards required for the contract.

1.6 REFERENCE STANDARDS

Reference to standards of any technical society, organization, association or to codes of local or state authorities shall mean the latest standard, code, specification or tentative standard adopted and published at the date of receipt of bids, unless specifically stated otherwise.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION 01090

SECTION 01100

SUMMARY

PART 1 – GENERAL

1.1 PROJECT

A. Project Name: Renovation of Sarto Iron Bridge – Phase II

B. Owner's Name: Avoyelles Parish Police Jury

C. Architect's Name: URS Corporation

D. The project shall consist primarily of the structural rehabilitation of a historic swing span steel bridge (built in 1917) with other related work to make the structure accessible to the public. Below is an outline of the major components of work for this project:

1. Structural work on the bridge (two swing spans).

   a. Demolition of the existing bridge decking, stringers and transverse members supporting the stringers.

   b. Install four (4) new steel girders (2 at each span) between existing concrete support piers.

   c. Install new transverse supporting members, steel and wood stringers and wood deck.

   d. Install new guardrail panels.

2. Construct new two-span wood framed approach on the east end of the bridge.

3. Construct an interpretive kiosk on the east side of the bayou, south of the bridge.

4. Construct a winding and sloping concrete sidewalk with retaining walls to connect the new east approach to the new interpretive kiosk.

5. If Additive Alternate No. 1 is accepted, repair existing west end approach to replace the timber support bents.

6. If Additive Alternate No. 2 is accepted, score and stain interpretive kiosk concrete floor slab.

1.2 CONTRACT DESCRIPTION

A. Contract Type: An _Owner-Contractor (Lump Sum)_ contract based on a stipulated price.

1.3 OWNER OCCUPANCY

A. Cooperate with owner to minimize conflict and to facilitate owner's operations.

B. Schedule the work to accommodate owner access to site.

1.4 CONTRACTOR USE OF SITE AND PREMISES

A. Construction Operations: Limited to owner's property.

B. Arrange use of site and premises to allow:

1. Work by Others.

1.5 WORK SEQUENCE

A. Contractor will be required for work sequence, including demolition, shoring and construction on bridge.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION 01100

SECTION 01200

PRICE AND PAYMENT PROCEDURES

PART 1 – GENERAL

1.2 SECTION INCLUDES

E. Procedures for preparation and submittal of applications for progress payments.

F. Documentation of changes in contract sum and contract time.

G. Change procedures.

H. Correlation of contractor submittals based on changes.

I. Procedures for preparation and submittal of application for final payment.

1.6 SCHEDULE OF VALUES

C. Submit a printed schedule on AIA Form G703 – Application and Certificate for Payment Continuation Sheet. Standard form or electronic media printout will be considered.

D. Submit Schedule of Values in duplicate within ten (10) days after bid date.

E. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification section. Identify site mobilization and bonds and insurance.

F. Include in each line item, the amount of allowances specified in this section. For unit cost allowances, identify quantities taken from contract documents multiplied by the unit cost to achieve the total for the item.

E. Revise schedule to list approved change orders, with each application for payment.

1.7 APPLICATIONS FOR PROGRESS PAYMENTS

B. Payment Period: Submit at intervals stipulated in the agreement.

B. Present required information in typewritten form.

C. Form: AIA G702 – Application and Certificate for Payment and AIA G703 – Continuation Sheet including continuation sheets when required.

D. Execute certification by notarized signature of authorized officer.

G. Use data from approved schedule of values. Provide dollar value in each column for each line item for portion of work performed and for stored products.

F. List each authorized change order as a separate line item, listing change order number and dollar amount as for an original item of work.

G. Submit four (4) copies of each application for payment.

H. Include the following with the application:

1. Transmittal letter.

2. Construction progress schedule.

1.8 MODIFICATION PROCEDURES

A. Submit name of the individual authorized to receive change documents and who will be responsible for informing others in contractor's employ or subcontractors of changes to the work.

C. The architect will advise of minor changes in the work not involving an adjustment to contract sum or contract time as authorized by the conditions of the contract by issuing supplemental instructions on AIA Form G710.

D. Proposal Request: The architect may issue a document which includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in contract time for executing the change. Contractor shall prepare and submit a fixed price quotation within five (5) days.

D. Computation of change in contract amount:

1. For change requested by architect for work falling under a fixed price contract, the amount will be based on contractor's price quotation.

2. For change requested by contractor, the amount will be based on the contractor's request for a change order as approved by architect.

E. Substantiation of Costs: Provide full information required for evaluation. Upon request, provide the following data:

1. Quantities of products, labor and equipment.

2. Taxes, insurance and bonds.

3. Justification for any change in contract time.

4. Credit for deletions from contract, similarly documented.

F. Execution of Change Orders: Architect will issue change orders for signatures of parties as provided in the conditions of the contract on AIA G701.

G. After execution of change order, promptly revise schedule of values and application for payment forms to record each authorized change order as a separate line item and adjust the contract sum.

H. Promptly revise progress schedules to reflect any change in contract time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.

I. Promptly enter changes in project record documents.

1.9 APPLICATION FOR FINAL PAYMENT

B. Prepare application for final payment as specified for progress payments, identifying total adjusted contract sum, previous payments, and sum remaining due.

C. Application for final payment will not be considered until all closeout procedures specified in Section 01780 have been accomplished.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION 01200

SECTION 01210

PROJECT MEETINGS

PART 1 – GENERAL

1.3 REQUIREMENTS INCLUDED

J. Architect shall schedule and administer a preconstruction meeting, periodic progress meetings and specially called meetings when and as necessary throughout the progress of the work.

The architect shall:

a. Prepare agenda for meetings.

b. Distribute written notice of each meeting four (4) days in advance of meeting date.

c. Make physical arrangements for meetings.

d. Preside at meetings.

e. Record the minutes; include significant proceedings and decisions.

f. Reproduce and distribute copies of the minutes within ten (10) days after each meeting:

i. To participants of the meeting.

b. To parties affected by decisions made at the meeting.

K. Representatives of contractors, subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.

1.10 PRECONSTRUCTION MEETING

E. Schedule prior to beginning of construction.

B. Location: At project site.

L. Attendance:

a. Owner's representative.

b. Architect.

c. Resident project representative.

d. Contractor's superintendent.

e. Major subcontractors.

f. Major suppliers.

7. DOTD Construction Coordinator.

8. Others, as appropriate.

D. Suggested Agenda:

1. Distribution and discussion of:

i. List of major subcontractors and suppliers.

ii. Projected construction schedules.

2. Critical work sequencing.

3. Major material deliveries and priorities.

4. Project coordination.

5. Procedures and processing of:

a. Field decisions.

b. Proposal requests.

c. Submittals.

d. Change orders.

e. Applications for payment.

6. Adequacy of distribution of contract documents.

7. Procedures for maintaining record documents.

8. Use of premises:

a. Office, work and storage areas.

b. Owner's requirements.

9. Construction facilities, controls and construction aids.

10. Temporary utilities.

11. Safety and first-aid procedures.

12. Security procedures.

13. Housekeeping procedures.

1.11 PROGRESS MEETINGS

A. Schedule regular periodic meetings as required but not less often than monthly.

B. Hold called meetings as required by progress of work.

C. Location of the meetings: At the job site.

D. Attendance:

1. Owner's representative.

2. Engineer and his professional consultants, as needed.

3. Contractor and his subcontractors and/or suppliers, as appropriate to the agenda.

4. DOTD Construction Coordinator.

5. Others as appropriate to the agenda.

E. Suggested agenda:

1. Review approval of minutes of previous meeting.

2. Review of work progress since previous meeting.

3. Field observations, problem and/or conflicts.

4. Change orders.

5. Problems which impede construction schedule.

6. Review of off-site fabrication delivery schedules.

7. Corrective measures and procedures to regain projected schedules.

8. Revisions to construction schedule.

9. Progress schedule during succeeding work periods.

10. Coordination of schedules.

11. Review submittal schedules; expedite as required.

12. Maintenance of quality standards.

13. Pending changes and substitutions.

14. Review proposed changes for:

    a. Effect on construction schedule and completion date.

    b. Effect on other contracts of the project.

15. Other business.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION 01210

SECTION 01230

ALTERNATIVES

PART 1 GENERAL

1.4 SECTION INCLUDES

M. Alternative submission procedures.

N. Documentation of changes in contract sum and contract time.

1.12 ACCEPTANCE OF ALTERNATIVES

F. Alternatives quoted on Bid Forms will be reviewed and accepted or rejected at the Owner's option. Accepted alternatives will be identified by the Owner and Architect within sixty (60) days after executive of contract.

B. Coordinate related work and modify surrounding work to integrate the Work of each alternative.

1.13 SCHEDULE OF ADDITIVE ALTERNATIVES

A. Additive Alternate No. 1 – Repairs to west approach (replace timber bents)

G. Additive Alternate No. 2 – Score and stain interpretive kiosk concrete floor slab

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION 01230

SECTION 01340

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

PART 1 – GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

A. Type of Submittals. This section of the specifications describes the procedures for submittal requirements applicable to work-related submittals, such as shop drawings, product data, samples and miscellaneous work-related submittals. It does not include the requirements for administrative submittals which are described in other sections.

B. Individual Section Requirements. The individual submittal requirements are specified in other sections of the specifications for each unit of work.

C. Definitions. The work-related submittals of this section, in addition to the definitions of the general conditions and elsewhere in the contract documents, are further categorized for convenience as follows:

1. Shop drawings include specially prepared technical data of all forms including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form for application to more than one project.

2. Product data includes standard printed information on materials, products and systems, not specially prepared for this project, other than the designation of selections from among available choices printed therein.

3. Samples include both fabricated and unfabricated physical examples of materials, products and units of work, both as complete units and as smaller portions of units of work, either for limited visual inspection or (where indicated) for more detailed testing and analysis.

4. Miscellaneous submittals related directly to the work (non-administrative) include warranties, maintenance agreements, workmanship bonds, project photographs, survey data and reports, physical work records, statements of applicability, quality testing and certifying reports, copies of industry standards, record

drawings, field measurement data, operating and maintenance materials, overrun stock, security/ protection/safety keys and similar information, devices and materials applicable to the work and not processed as shop drawings, product data or samples. In addition to the above requirements, the contractor shall submit in writing to the engineer his proposed excavation plan prior to beginning any excavation operations.

1.2 GENERAL SUBMITTAL REQUIREMENTS

A. Scheduling. Where appropriate in various required administrative submittals (listings of products, manufacturers, suppliers and subcontractors, and in job progress schedule), show principal work-related submittal requirements and time schedules for coordination and integration of submittal activity with related work in each instance.

Within ten (10) days after the effective date of the agreement, a schedule shall be submitted of the items of materials and equipment for which shop drawings are required by the specifications. For each required shop drawing, the date shall be given for intended submission of the drawing to the engineer for review and the date required for its return to avoid delay in any activity beyond the scheduled start date.

B. Coordination of Submittal Times. Prepare and transmit each submittal to the engineer sufficiently in advance of performing related work or other applicable activities, so the installation will not be delayed or improperly sequenced by processing times, including non-approval and re-submittal (if required). Coordinate with other submittals, testing, purchasing, delivery and similar sequenced activities. No extension of time will be authorized because of contractor's failure to transmit submittals to the engineer sufficiently in advance of the work.

C. Sequencing Requirements. As applicable in each instance, contractor shall not proceed with a unit of work until all required submittals including those for related units of work, have been reviewed and approved by engineer. The timing of all submittals shall be such that no piece or unit of work will need to be later modified or rescinded by reason of a subsequent submittal which should have been processed earlier or concurrently for coordination.

D. Preparation of Submittals. Provide permanent marking on each submittal to identify project, date, contractor, subcontractor, submittal name and similar information to distinguish it from other submittals. Show contractor's executed review and approval marking and provide space for the engineer's "action" marking. Package each submittal appropriately for transmittal and handling. Submittals that are received from sources other than through the contractor's office will be returned "without action."

1.3 SPECIFIC CATEGORY REQUIREMENTS

A. General. Except as otherwise indicated in the individual work sections, comply with general requirements specified herein for each indicated category of submittal. Submittals shall contain:

1. The date of submittal and the dates of any previous submittal.

2. The Project title and number.

3. Contract identification:

4. The names of the:

   a. Contractor

   b. Supplier

   c. Manufacturer

5. Identification of the product, with the specification section number and equipment tag numbers.

6. Field dimensions, clearly identified as such.

7. Relation to adjacent or critical features of the work or materials.

8. Applicable standards, such as ASTM or federal specification numbers.

9. Notification to the engineer in writing, at time of submission, of any deviations in the submittals from requirements of the contract documents.

10. Identification of revisions on re-submittals.

11. An eight inch by three inch (8" x 3") blank space for contractor and engineer stamps.

12. Contractor's stamp, initialed or signed, certifying to review of submittal, verification of products, field measurements and field construction criteria, and coordination of the information within the submittal with requirements of the work and of contract documents. Engineer's review will not proceed unless contractor's stamp is on drawings.

13. Submittal sheets or drawings showing more than the particular item under consideration shall have all but the pertinent description of the item for which review is requested crossed out.

B. Shop Drawings. Provide newly-prepared information, on reproducible sheets, with graphic information at accurate scale (except as otherwise indicated), with name of preparer (firm name) indicated. The contract drawings shall not be traced or reproduced by any method for use as or in lieu of detail shop drawings. Show dimensions and note which are based on field measurement. Identify materials and products in the work shown. Indicate compliance with standards and special coordination requirements. Do not allow shop drawing copies without appropriate final "action" markings by the engineer to be used in connection with the work.

1. Submittal. Minimum of five (5) prints are required. Each copy shall be stamped by the contractor certifying review.

2. Submit one (1) copy for DOTD at project completion.

C. Product Data. Collect required data into one submittal for each unit of work or system, and mark each copy to show which choices and options are applicable to project. Include manufacturer's standard printed recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements which have been checked, and special coordination requirements. Maintain one (1) set of product data (for each submittal) at project site, available for reference by the engineer or others.

1. Submittals. Do not submit product data, or allow its use on the project, until compliance with requirements of contract documents has been confirmed by the contractor. Submittal is for information and record, unless otherwise indicated. Initial submittal is final submittal unless returned promptly by the engineer, marked with an "action" which indicates an observed noncompliance. Submit five (5) copies, three (3) of which will be returned. One (1) set shall be kept at job site.

2. Submit one (1) copy for DOTD at project completion.

3. Installer's Copy. Do not proceed with installation of materials, products or systems until copy of applicable product data is in possession of installer.

D. Samples. Provide units identical with final condition of proposed materials or products for the work. Include "range" samples (not less than three (3) units) where unavoidable variations must be expected, and describe or identify variations between units of each set. Provide full set of optional samples where the engineer's selection is required. Prepare samples to match the engineer's sample where so indicated. Include information with each sample to show generic description, source or product name and manufacturer, limitations, and compliance with standards. Samples are submitted for review and confirmation of color, pattern, texture and "kind" by the engineer. Engineer will not "test"

samples (except as otherwise indicated) for other requirements, which are the exclusive responsibility of the contractor.

1. Submittal. At contractor's option, provide preliminary submittal of a single set of samples for the engineer's review and "action." Otherwise, initial submittal is final submittal unless returned with "action" which requires re-submittal. Submit six (6) sets of samples in final submittal; one (1) set will be returned.

2. Quality Control Set. Maintain returned final set of samples at project site, in suitable condition and available for quality control comparisons by engineer and by others.

1.4 DISTRIBUTION

A. General Distribution. Provide additional distribution of submittals (not included in foregoing copy submittal requirements) to subcontractors, suppliers, fabricators, installers, governing authorities and others as necessary for proper performance of the work. Include such additional copies in transmittal to the engineer where required to receive "action" marking before final distribution. Show such distributions on transmittal forms.

B. Review Time. Allow a minimum of twenty-one (21) calendar days following receipt of submittals for the engineer's initial processing of each submittal requiring review and response, except allow longer periods where processing must be delayed for coordination with subsequent submittals. The engineer will advise the contractor promptly when it is determined that a submittal being processed must be delayed for coordination. Allow two (2) weeks for reprocessing each submittal. Advise the engineer on each submittal as to whether processing time is critical to progress of the work, and therefore the work would be expedited if processing time could be foreshortened.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION 01340

SECTION 01500

TEMPORARY FACILITIES AND CONTROLS

PART 1 – GENERAL

1.5 SECTION INCLUDES

O. Temporary Utilities.

P. Temporary telephone and facsimile service.

Q. Temporary sanitary facilities.

R. Temporary Controls: Barriers, enclosures, and fencing.

S. Security requirements.

T. Vehicular access and parking.

U. Waste removal facilities and services.

V. Project identification sign.

W. Field offices.

1.14 RELATED SECTIONS

H. Section 01510 – Temporary Utilities.

I. Section 01525 – Field Offices.

J. Section 01585 – Project Signs.

1.15 TEMPORARY UTILITIES – SEE SECTION 01510

A. Contractor may use, at no cost, all electrical power, lighting, water, heating and cooling, and ventilation required for construction purposes.

1.16 TELEPHONE SERVICE

A. Provide, maintain, and pay for telephone service to field office at time of project mobilization.

B. Provide, maintain and pay for telephone service to field office and architect's field office at time of project mobilization.

C. Provide, maintain and pay for facsimile service to field office at time of project mobilization.

1.17 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.

B. Use of existing facilities is not permitted.

C. New permanent facilities may not be used during construction operations.

D. Maintain daily in clean and sanitary condition.

E. At end of construction, return facilities to same or better condition as originally found.

1.18 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide barricades and covered walkways required by governing authorities for public right-of-way.

C. Provide protection for plants designated to remain. Replace damaged plants.

D. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.19 FENCING

A. Construction: Contractor's option.

1.20 EXTERIOR ENCLOSURES

A. Provide temporary weather tight closure of exterior opening to accommodate acceptable working conditions and protection for products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.21 SECURITY

A. Provide security and facilities to protect work, and owner's operations from unauthorized entry, vandalism, or theft.

B. Coordinate with owner's security program.

1.22 VEHICULAR ACCESS AND PARKING

A. Coordinate access and haul routes with governing authorities and owner.

B. Provide and maintain access to fire hydrants, free of obstructions.

C. Provide means of removing mud from vehicle wheels before entering streets.

D. Designated existing on-site roads may be used for construction traffic.

E. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

F. Do not allow vehicle parking on existing pavement.

1.23 WASTE REMOVAL

A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.

B. Provide containers with lids. Dispose of waste off-site weekly.

C. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.24 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities and materials prior to Substantial Completion Inspection.

B. Remove underground installations to a minimum depth of two feet (2'). Grade site as indicated.

C. Clean and repair damage caused by installation or use of temporary work.

D. Restore existing and permanent facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

1.25 PROJECT IDENTIFICATION

A. Provide project identification sign as required in Section 01585 – Project Signs.

B. Erect on site at location established by architect.

C. No other signs are allowed without owner permission except those required by law.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION 01500

SECTION 01600

PRODUCT REQUIREMENTS

PART 1 – GENERAL

1.6 SECTION INCLUDES

X. General product requirements.

Y. Transportation, handling, storage and protection.

Z. Product option requirements.

AA. Substitution limitations and procedures.

1.26 RELATED SECTIONS

1.27 SUBMITTALS

A. Proposed Products List: Submit list of major products proposed for use with name of manufacturer, trade name, and model number of each product.

1. Submit within fifteen (15) days after date of notice to proceed.

2. For products specified only by reference standards, list applicable reference standards.

B. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturer's standard data to provide information specific to this project.

C. Shop Drawing Submittals: Prepared specifically for this project.

D. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 – PRODUCTS

2.1 PRODUCTS

2.2 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

B. Products Specified by Naming One (1) or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

PART 3 – EXECUTION

3.1 SUBSITUTION PROCEDURES

A. Instructions to bidders specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in this section.

B. Architect will consider requests for substitutions only within fifteen (15) days after date established in notice to proceed.

C. Substitutions may be considered when a product becomes unavailable through no fault of the contractor.

D. Document each request with complete data substantiating compliance of proposed substitution with contract documents.

E. A request for substitution constitutes a representation that the submitter:

1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.

2. Will provide the same warranty for the substitution as for the specified product.

3. Will coordinate installation and make changes to other work which may be required for the work to be complete with no additional cost to owner.

4. Waives claims for additional costs or time extension which may subsequently become apparent.

F. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the contract documents.

G. Substitution Submittal Procedure:

1. Submit three (3) copies of request for substitution for consideration. Limit each request to one (1) proposed substitution.

2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof on the person submitting the proposal.

3. The architect will notify contractor in writing of decision to accept or reject request.

3.2 TRANSPORTATION AND HANDLING

A. Transport and handle products in accordance with manufacturer's instructions.

B. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling, disfiguration, or damage.

3.3 STORAGE AND PROTECTION

A. Store and protect products in accordance with manufacturer's instructions.

B. Store with seals and labels intact and legible.

C. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.

D. For exterior storage of fabricated products, place on sloped supports above ground.

E. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.

F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

G. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION 01600

SECTION 01610

MATERIAL AND EQUIPMENT

PART 1 – GENERAL

1.7 REQUIREMENTS

All materials and equipment furnished and installed under this contract shall conform to the general stipulations set forth in this section except as otherwise specified in other sections of the specifications.

1.28 WORKMANSHIP AND MATERIALS

Contractor shall guarantee all work against faulty or inadequate design, improper assembly or erection, defective workmanship or materials and leakage, breakage or other failure. Materials shall be suitable for service conditions.

Except where otherwise specified, structural and miscellaneous fabricated steel used in the work shall conform to AISC standards. All structural members shall be designed for shock or vibratory loads. Unless specified, all steel which will be submerged all or in part, during normal operation of the equipment shall be at least one-fourth inch (¼") thick.

1.29 RESPONSIBILITY FOR MATERIALS AND EQUIPMENT

Contractor shall be fully responsible for all materials and equipment which he has furnished and shall furnish necessary replacements at any time prior to expiration of the correction period.

The contractor shall stock additional supplies of material and equipment as the contractor deems necessary for timely and efficient execution of this contract.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION 01610

SECTION 01630

PRODUCT OPTIONS AND SUBSTITUTIONS

PART 1 – GENERAL

In accordance with applicable state contractor statutes, these contract documents include provisions for use of equivalent materials and equipment. Requests for review of equivalency shall be submitted in accordance with the general conditions and the submittals section.

Other manufacturer's products will be accepted provided adequate information is submitted sufficiently in advance to allow engineer to determine that the products proposed are equivalent to those named. Such items shall be submitted for review by the procedures set forth in the submittals section.

Whenever the names of proprietary products or the names of particular manufacturers or vendors are used, it shall be understood that the words "or equal" following the enumeration, if not specifically stated, are implied.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION 01630

SECTION 01700

EXECUTION REQUIREMENTS

PART 1 – GENERAL

1.8 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.

B. Pre-installation meetings.

C. Cutting and patching.

D. Surveying for laying out the work.

E. Cleaning and protection.

1.2 SUBMITTALS

K. Survey work: Submit name, address, and telephone number of surveyor before starting survey work.

1. On request, submit documentation verifying accuracy of survey work.

L. Cutting and patching: Submit written sequence of proposed operations in advance of cutting or alteration which affects:

1. Structural integrity of any element of project.

2. Visual qualities of sight exposed elements.

3. Include in request:

a. Location and description of affected work.

b. Description of proposed work (including temporary shoring and bracing) and products to be used.

c. Date and time work will be executed.

1.3 QUALIFICATIONS

A. For field engineering employ a professional engineer of the discipline required for specific service on project, licensed in the state in which the project is located.

1.4 PROJECT CONDITIONS

A. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

B. Erosion and Sediment Control: Plan and execute construction by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.

C. Pest Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.

D. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

1.5 COORDINATION

A. Coordinate scheduling, submittals, and work of the various sections of the project manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

B. Coordinate completion and clean-up of work of separate sections.

C. After owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with contract documents, to minimize disruption of owner's activities.

PART 2 – PRODUCTS

2.3 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

PART 3 – EXECUTION

3.4 EXAMINATION

F. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Beginning new work means acceptance of existing conditions.

G. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.

H. Examine and verify specific conditions described in individual specification sections.

I. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.5 PREPARATION

D. Prepare surfaces and remove surface finishes to provide for proper installation of new work and finishes.

E. Clean substrate surfaces prior to applying next material or substance.

F. Seal cracks or openings of substrate prior to applying next material or substance.

G. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.6 LAYING OUT THE WORK

A. Verify locations of survey control points prior to starting work.

B. Promptly notify architect of any discrepancies discovered.

C. Contractor shall locate and protect survey control and reference points.

D. Control datum for survey is that established by owner provided survey.

E. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

F. Utilize recognized engineering survey practices.

G. Establish a minimum of two (2) permanent bench marks on site, referenced to established control points. Record locations, with horizontal and vertical data, on project record documents.

H. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:

1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.

2. Grid or axis for structures.

3. Building foundation, column locations, and ground floor elevations.

I. Periodically verify layouts by same means.

J. Maintain a complete and accurate log of control and survey work as it progresses.

3.7 GENERAL INSTALLATION REQUIREMENTS

A. Install Products as specified in individual sections.

B. Make neat transitions. Patch work to match adjacent work in texture and appearance.

C. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to architect.

3.8 CUTTING AND PATCHING

A. Execute cutting and patching including excavation and fill to complete the work, to uncover work to install improperly sequenced work, to remove and replace defective or non-conforming work, to remove samples of installed work for testing, to provide openings in the work for penetration of mechanical and electrical work, to execute patching to complement adjacent work, and to fit products together to integrate with other work.

B. Execute work by methods to avoid damage to other work, and which will provide appropriate surfaces to receive patching and finishing.

C. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

D. Restore work with new products in accordance with requirements of contract documents.

E. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

F. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections. Repair substrate prior to patching finish. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

3.9 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Collect and remove waste materials, debris, and rubbish from site weekly and dispose off-site.

3.10 PROTECTION OF INSTALLED WORK

A. Protect installed work and provide special protection where specified in individual specification sections.

B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

C. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

D. Prohibit traffic from landscaped areas.

3.11 FINAL CLEANING

A. Execute final cleaning prior to final project assessment after substantial completion but before making final application for payment.

1. Clean areas to be occupied by owner prior to final completion before owner occupancy.

B. Clean exterior surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces.

C. Clean site; sweep paved areas, rake clean landscaped surfaces.

D. Remove waste and surplus materials, rubbish, and construction facilities from the site.

E. Clean owner occupied areas of work.

END OF SECTION 01700

SECTION 01720

PROJECT RECORD DOCUMENTS

PART 1 – GENERAL

1.1 DESCRIPTION

The contractor shall maintain at the site for the owner's permanent records one copy of:

1. Drawings.
2. Specifications.
3. Addenda.
4. Change orders and other modifications to the contract.
5. Engineer field orders or written instructions.
6. Approved shop drawings, product data.
7. Field test records.
8. Construction photographs.
9. As-built drawings

1.2 RELATED WORK SPECIFIED ELSEWHERE

Submittals

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.1 MAINTENANCE OF DOCUMENTS AND SAMPLES

A. The contractor shall store documents and samples in contractor's field office apart from documents used for construction.

B. The contractor shall provide files and racks for storage of documents.

C. The contractor shall maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.

D. The contractor shall make documents and samples available at all times for inspection by the engineer and owner.

3.2 MARKING-UP RECORD DRAWINGS

The contractor shall mark with red erasable pencil and, where necessary, use other pencil colors, as required.

3.3 RECORDING

A. Label each document (including record prints and shop drawings) "PROJECT RECORD" in neat large printed letters.

B. Record information concurrently with construction progress. Do not conceal any work until required information is recorded.

C. Drawings

Legibly mark field drawings to record actual construction:

1. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.

2. Field changes of dimensions and details.

3. Changes made by field order or by change order.

4. Details not on original contract drawings.

D. Specifications and Addenda

The contractor shall legibly mark each section to record:

1. Manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed.

2. Changes made by field order or by change order.

3.4 AS-BUILT SURVEY

The contractor shall maintain an "as-built" survey showing the precise location of the installed items and any other utilities encountered or relocated, as described in other sections of these specifications.

3.5 SUBMITTALS

A. At contract close-out, contractor shall deliver record documents to the engineer including marked-up drawings, as-built survey, specifications, addenda, change orders and other modifications to contract; engineer's field orders and written instructions, approved shop drawings, product data, field test records and any

other documents which serve as a record of actual field installation and construction different from the original contract documents. Engineer will submit them to owner.

B. Accompany submittals with transmittal letters in duplicate, containing:

1. Date

2. Project title and number

3. Contractor's name and address

4. Title and number of each record document

5. Signature of contractor or his authorized representative.

END OF SECTION 01720

SECTION 01740

WARRANTIES AND BONDS

PART 1 – GENERAL

1.1 Contractor shall maintain and keep in good repair the improvements covered by these drawings and specifications during the life of the contract.

1.2 Contractor shall indemnify the owner against any repairs which may become necessary to any part of the work performed and to items of equipment and systems procured for or furnished under this contract, arising from defective workmanship or materials used therein, for a period of one (1) year from the date of final acceptance of the work by the owner.

1.3 The contractor shall, at his own expense, furnish all labor, materials, tools and equipment required and shall make such repairs and removals or shall perform such work or reconstruction as may be made necessary by structural or functional defect or failure resulting from neglect, faulty workmanship or faulty materials, in any part of the work performed by him.

1.4 Except as noted on the drawings or as specified, all structures such as embankments and fences shall be returned to their original condition prior to the completion of the contract. Damage to facilities not designated for removal, resulting from the contractor's operations, shall be promptly repaired by contractor, at no cost to the owner.

1.5 In the event the contractor fails to proceed to remedy the defects of which he has been notified within fifteen (15) days of the date of such notice, the owner reserves the right to cause the required materials to be procured and the work to be done, as described in the drawings and specifications, and to hold the contractor and the sureties on his bond liable for the cost and expense thereof.

1.6 All warranties, bonds, insurance, etc. shall provide for thirty (30) day advance notice to the owner prior to cancellation or renewal date. No payment will be made to the contractor for any work without insurance and bonds being in effect.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION 01740

SECTION 01780

CLOSEOUT SUBMITTALS

PART 1 – GENERAL

1.9 SECTION INCLUDES

BB. Project Record Documents.

CC. Warranties and Bonds.

1.30 SUBMITTALS

E. Project Record Documents: Submit documents to architect with claim for final application for payment.

F. Warranties and Bonds:

1. Make submittals within ten (10) days after date of substantial completion, prior to final application for payment.

2. For items of work for which acceptance is delayed beyond date of substantial completion, submit within ten (10) days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.12 PROJECT RECORD DOCUMENTS

J. Maintain on site one (1) set of the following record documents; record actual revisions to the work:

a. Drawings.

b. Specifications.

c. Addenda.

d. Change Orders and other modifications to the contract.

e. Reviewed shop drawings, product data, and samples.

f. Manufacturer's instruction for assembly, installation, and adjusting.

K. Ensure entries are complete and accurate, enabling future reference by owner.

L. Store record documents separate from documents used for construction.

M. Record information concurrent with construction progress.

N. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:

a. Manufacturer's name and product model and number.

b. Product substitutions or alternates utilized.

c. Changes made by addenda and modifications.

O. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:

a. Measured depths of foundations in relation to finish main floor datum.

b. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.

c. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the work.

d. Field changes of dimension and detail.

e. Details not on original contract drawings.

3.13 OPERATION AND MAINTENANCE DATA

H. For Each Product or System: List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.

I. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

J. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use project record documents as maintenance drawings.

K. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.14 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

D. For each Product, Applied Material, and Finish:

1. Product data, with catalog number, size, composition, and color and texture designations.

2. Information for re-ordering custom manufactured products.

E. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

F. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.

G. Additional information as specified in individual product specification sections.

H. Provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

3.15 OPERATION AND MAINTENANCE MANUALS

A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

B. Prepare data in the form of an instructional manual.

C. Binders: Commercial quality, eight and one-half by eleven inch (8½" x 11") three (3) D side ring binders with durable plastic covers; two (2) inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.

D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of project; identify subject matter of contents.

E. Provide tabbed dividers for each separate product and system, with typed description of product and major component parts of equipment.

F. Text: Manufacturer's printed data, or typewritten data on twenty (20) pound paper.

G. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

H. Arrange content by systems under section numbers and sequence of Table of Contents of this project manual.

I. Contents: Prepare a Table of Contents for each volume, with each product or system description identified, in three parts as follows:

2. Part 1: Directory, listing names, addresses, and telephone numbers of architect, contractor, subcontractors, and major equipment suppliers.

3. Part 2: Project documents and certificates, including the following:

i. Shop drawings and product data.

ii. Certificates.

J. Provide a listing in Table of Contents for design data, with tabbed dividers and space for insertion of data.

K. Table of Contents: Provide title of project; names, addresses, and telephone numbers of architect, consultants, and contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.

3.16 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within ten (10) days after completion of the applicable item of work. Except for items put into use with owner's permission, leave date of beginning of time of warranty until the date of substantial completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

E. Include photocopies of each in operation and maintenance manuals, indexed separately on Table of Contents.

F. Manual: Bind in commercial quality eight and one-half by eleven inch (8½" x 11") three (3) D side ring binders with durable plastic covers.

G. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of project; name, address and telephone number of contractor and equipment supplier; and name of responsible company principal.

H. Table of Contents: Neatly type, in the sequence of the Table of Contents of the project manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.

I. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

END OF SECTION 01780

SECTION 02221

EXCAVATING, BACKFILLING, AND COMPACTION FOR STRUCTURES

PART 1 – GENERAL

1.1 DESCRIPTION.

The contractor shall furnish all work, materials, equipment and related items required to remove all earth, rock, water and other materials to the extent required for the construction of the facilities shown on the drawings, to prepare the subgrade or sub base for the foundation of the facilities, and backfill around the facilities to the lines and grades established on the drawings.

1.2 QUALITY ASSURANCE

A. The specifications of the American Society for Testing and Materials (ASTM) referred to in this section and listed below shall be considered a part of this section, the same as if fully set forth herein, to the extent applicable in each reference:

D 698 Tests for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft.3)

D 1557 Tests for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft.3)

D 4253 Maximum Index Density and Unit Weight of Soils Using a Vibratory Table

D 4254 Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density

D 4318 Test for Liquid Limit, Plastic Limit and Plasticity Index of Soils

B. Contractor shall provide certification that all materials meet the specifications.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Backfill Materials

1. Native-material backfill. Good sound earth free from waste, rubbish, objectionable organic matter, large rocks, waste concrete, or other unstable or unsuitable material. Native material used for

backfill shall have a Plasticity Index (PI) less than twenty percent (20%), a Liquid Limit (LL) less thirty-five percent (35%) and organic content less than five percent (5%).

2. Select backfill. Granular material having a maximum of ten percent (10%) passing No. 200 sieve and shall be non-plastic.

B. Foundation for Modular Concrete Retaining Wall Material

Foundation material shall be crushed Limestone. Materials shall conform to the requirements of the Louisiana Standard Specifications for Roads and Bridges, Section 1003.03(d). All material shall be from a source approved by the LADOTD.

PART 3 – EXECUTION

3.1 EXCAVATION

A. General. Excavations shall be of such dimensions as to permit the construction of the work in the manner, shape and size shown on the drawings. Excavation shall extend a sufficient distance from walls to allow for placing and removal of forms, installation of piping, mechanical compaction of backfill materials and inspection. Excavation shall not be plowed, scraped or machine dug closer than three inches (3") to the finished subgrade elevation. Remove the last layer of excavation by hand or other means approved by the engineer to the exact lines and grades shown on the drawings. The exposed surface shall be undisturbed and all loose material shall be removed from the bottom of the excavation so the foundation will be clean and firm. Final removal and replacement of the foundation material and sub base compaction to grade shall not be made until just before the concrete or masonry is placed. When any structural excavation is completed, the contractor shall notify the engineer who will make an inspection of the excavation. No concrete or masonry shall be placed until the engineer has approved the excavation.

B. Unauthorized Excavation. Whenever the excavation is carried beyond or below the lines or grades shown on the drawings due to an error by the contractor and not for the purpose of removing stumps, logs, roots, etc., refill all such excavated space below the structure foundation with structural class "C" concrete as described in the Louisiana Standard Specifications for Roads and Bridges. Also, if the bottom of the excavation is made mucky or unstable due to the contractor's operations

or carelessness, the excavation shall be deepened to undisturbed soil just before concreting operations; and the thickness of structural concrete or depth of fill material as determined by the engineer shall be increased accordingly without additional compensation to the contractor.

C. Excavation to Remove Stumps, Roots, Logs, Etc. The contractor shall probe one foot (1') below the established bottom of the excavation. If any stumps, logs or roots, etc, are discovered by this probing, the contractor shall cut them out and refill all such excavated space below the structure foundation with class "C" concrete if ordered by the engineer. This work shall be considered incidental to the construction of the project facilities.

D. Material Storage and Disposal. Contractor shall retain ownership of all excess soil and clay material arising out of the contractor's performance of the work. Contractor shall remove and dispose of all such material to a legally approved off-site area.

E. Blasting. Explosives shall not be used unless authorized by the owner in writing.

3.2 PLACING AND COMPACTING FILL

A. Areas to receive fill and backfill shall be free of roots, trash and other foreign materials.

B. After removing top soil and prior to placing any fill, the existing ground shall be proof rolled with a pneumatic roller to detect any soft spots or areas that are pumping. Any areas found shall be excavated to sound material and the excavated area shall be filled in lifts not exceeding eight inches (8") loose. The lifts shall be compacted to ninety percent (90%) standard density up to the point of the proof rolling line.

C. Compaction shall begin only after the fill or backfill has been properly placed and the materials to be compacted are at the proper moisture content. Compaction shall be performed with equipment compatible with the soil type. Fill and backfill lifts shall be uniformly compacted to the specific percentage of ninety percent (90%) and ninety-five percent (95%). Ninety percent (90%) applies where hand operated equipment is used, such as around building and equipment foundations. Ninety-five percent (95%) applies where mechanical equipment is used, such as for buildings, roads, railroads, dikes and general fill areas.

D. After compaction of the material, in place density tests shall be made as specified in section 3.4. If the material fails to meet the density specified, the course shall be reworked as necessary to obtain the specified density. The compaction method or equipment on later work may be altered to obtain the specified density.

3.3 BEDDING AND BACKFILLING FOR CONCRETE AND BRICK STRUCTURES

A. Only after concrete walls have attained the required twenty-eight (28) day compressive strength shall any backfill be placed.

B. Cast-in-place concrete base slabs shall be allowed to cure for a minimum of seven (7) days before backfill is placed into the excavation unless directed otherwise by the engineer.

C. All structural backfill operations shall consist of backfilling with select backfill material. Select fill placed against the structure shall be a minimum of three feet (3') wide from the stone bedding up to a depth of two feet (2') below final grade. Select fill shall be placed in lifts of eight inches (8") loose measure and compacted with a power tamper to a minimum density corresponding to ninety-five percent (95%) of the maximum dry density at optimum water content in accordance with ASTM D698. The final two feet (2') of select granular backfill shall be compacted to a minimum density corresponding to ninety-eight percent (98%) of the maximum dry density at optimum water content in accordance with ASTM D 1557.

D. "Native Backfill" may be used where shown on the drawings outside of the select fill areas described in section 3.2.C and shall be placed in layers not to exceed eight inches (8") deep mechanically compacted to the approximate density of the adjacent soils. In lieu of such native materials, contractor has the option of utilizing "Select Backfill" at no additional expense to the Owner.

E. Bedding material shall be crushed limestone, or crushed concrete placed and compacted as shown on the drawings. The compaction of the bedding shall consist of the placement of bedding in lifts not exceeding eight inches (8") and compacted to minimum seventy-five percent (75%) relative density as per ASTM D4253 and 4254. Geo-textile fabric shall be laid prior to placement of bedding, as shown on the drawings.

3.4 TESTING

A. One test shall be performed for each 200 – 500 cubic yards of compacted material at structures.

B. Density and moisture content can be determined by the sand-cone method or the balloon-density method according to the procedures set forth in ASTM D 1556 and ASTM D 2167, respectively. A nuclear density-moisture meter can also be used provided the unit is properly calibrated and check tests using one of the other methods are performed. Specific test procedures for nuclear density are ASTM D 2922 and ASTM D 3017.

END OF SECTION 02221

SECTION 02282

TERMITE CONTROL

PART 1 – GENERAL

1.1 SUMMARY

A. This Section includes soil treatment for termite control for interpretive kiosk including supplementary work necessary for its installation.

1.2 SUBMITTALS

A. General: Submit the following in accordance with conditions of contract and Division 1 specification sections.

1. Product data and application instructions.

2. Certification that products used complies with U.S. Environmental Protection Agency (EPA) regulations for termiticides.

1.3 QUALITY ASSURANCE

A. In addition to requirements of these specifications, comply with manufacturer's instructions and recommendations for preparing substrate and application.

B. Engage a professional pest control operator who is licensed according to regulations of governing authorities to apply soil treatment solution.

C. Use only termiticides that bear a federal registration number of the EPA and are approved by local authorities having jurisdiction.

1.4 JOB CONDITIONS

A. Restrictions: Do not apply soil treatment solution until excavating, filling, and grading operations are completed, except as otherwise required in construction operations.

B. To ensure penetration, do not apply soil treatment to frozen or excessively wet soils or during inclement weather. Comply with handling and application instructions of the soil toxicant manufacturer.

1.5 WARRANTY

A. Warranty: Furnish written warranty, executed by applicator and contractor, certifying that applied soil termiticide treatment will prevent infestation of subterranean termites. If subterranean termite activity is discovered during warranty period, contractor will re-treat soil and repair or replace damage caused by termite infestation.

B. Warranty period: Five (5) years from date of substantial completion.

C. Warranty shall not deprive owner of other rights under other provisions of the contract documents and will be in addition to and run concurrent with other warranties made by contractor under requirements of contract documents.

PART 2 – PRODUCTS

2.1 SOIL TREATMENT SOLUTION

A. Utilize only approved materials which have proven effective in termite control. Use of fuel oil will not be permitted.

B. Provide chemical and concentration, as approved by Environmental Protection Agency (EPA).

C. Dilute with water to concentration level recommended by manufacturer and approved by the EPA.

D. Use only soil treatment solutions that are not harmful to plants.

PART 3 – EXECUTION

3.1 APPLICATION

A. Remove foreign matter that could decrease treatment effectiveness on areas to be treated. Loosen, rake, and level soil to be treated, except previously compacted areas under slabs and foundations. Toxicants may be applied before placing compacted fill under slabs if recommended by toxicant manufacturer.

B. Under slab-on-grade structures, treat soil before concrete slabs are placed, using the following application rates:

1. Apply four (4) gallons of chemical solution per ten (10) linear feet to soil in critical areas under slab, including entire inside perimeter of foundation walls, along both sides of interior partition walls, around interior column footers.

2. Apply one (1) gallon of chemical solution per ten (10) square feet as overall treatment under slab and attached slab areas where fill is soil or unwashed gravel. Apply one and one-half (1½) gallons of chemical solution to areas where fill is washed gravel or other coarse absorbent material.

C. At expansion joints, control joints, and areas where slabs will be penetrated, apply at rate of four (4) gallons per ten (10) linear feet of penetration.

D. Post signs in areas of application to warn worker that soil termiticide treatment has been applied. Remove signs after areas are covered by other construction.

E. Reapply soil treatment solution to areas disturbed by subsequent excavation, landscape grading, or other construction activities following application.

END OF SECTION 02282

SECTION 02480

LANDSCAPE PLANTING

PART 1 – GENERAL

1.1 SCOPE

The work under this section of the specifications consists of furnishing all plants and related materials (including fertilizer, organic matter, herbicide, mulch, and topsoil), supervision, labor, equipment, appliances and services necessary for and incidental to completing all operations in connection with the planting of trees, shrubs, ground covers, and other such materials in strict accordance with these specifications and the applicable drawings. In general, the work shall include, but not be limited to the following.

A. Excavation as required for all planting and backfilling tree pits.

B. Minor filling and leveling as necessary to insure survival of plants in all areas.

C. Furnishing, transporting, preparing and placing of prepared for plant beds.

D. Bed preparation.

E. Furnishing and planting of tree, shrubs, ground covers and sod as indicated on drawings.

F. Staking trees.

G. Samples and analyses for approval.

H. Maintenance during period of establishment (three hundred sixty {360} days), and one (1) year guarantee.

I. Replacement of unsatisfactory plant material.

1.2 SUBMITTALS

As required and outlined below under "**PART 2 – PRODUCTS**" and paragraph "3.5 SAMPLES, TESTS AND INSPECTIONS".

1.3 APPLICABLE STANDARDS

Work shall be in strict accordance with sound nursery practice. The following documents, used as standards, are to be considered part of these specifications.

A. American Standard for Nursery Stock, latest edition, as published by the American Association of Nurserymen, Inc.

B. Standardized Plant Names, latest edition, as adopted by the American-Joint Committee on Horticultural Nomenclature.

C. Grades and Standards for Landscape Materials, latest edition, as prepared by the Louisiana Association of Nurserymen, Inc.

1.4 SPECIAL LANDSCAPE PROVISIONS

A. Definition – The term "contractor" as referred to in this section only means the landscape contractor. The landscape contractor shall be currently licensed by the Louisiana Horticulture Commission to do landscape contracting work in the State of Louisiana.

B. Water – All bed and lawn areas are not irrigated with an automatic irrigation system. It is the contractor's responsibility to insure proper scheduling and quantity of watering of all plant material. Water will be available for the work.

1. Bed areas **will require** the contractor to manually water them to insure plant survival. Each plant shall be watered once within ten (10) day intervals if no rainfall event producing precipitation amount of an inch or greater occurs, or as often as needed during periods of excessive drought.

2. Trees **will require** the contractor to manually water them to insure plant survival. Each tree shall be watered once within ten to fourteen (10-14) day intervals if no rainfall event producing precipitation amount of an inch or greater occurs, or as often as needed during periods of excessive drought.

3. New lawn areas **will require** the contractor to manually water them. Watering shall be done at a rate which allows the soil to become thoroughly saturated to a depth of six to eight (6-8) inches. Plantings adjacent to paved areas will require extra water due to heat reflection.

4. Water will be provided by the owner. Hose and other watering equipment required for the work shall be provided by the contractor. Hoses shall not be stored in public view.

C. Finished Grading – It shall be the contractor's responsibility to do whatever additional fine grading as may be required to bring areas to be planted back up to the existing finished grades or to grades specified on the drawings or these specifications. This shall also apply to existing slopes, berms, or lawn areas damaged during the work herein, and the contractor shall replace or repair and such existing area to return it to its original grade or condition.

D. Disposal of Waste Materials – Reusable items are to be removed and stored in such a manner that they may be used again. The landscape architect shall make determinations regarding the selection of salvaged equipment and materials. Any excess dirt equipment and material selected to remain the property of the owner shall be removed and delivered to a location as designated by the landscape

architect. Material not retained by the owner shall become the property of the contractor and shall be removed from the site.

E. Period of Establishment and Replacement

1. Upon the completion of planting, and providing plants are in place, living and conform to these specifications, this portion of the contract will be given provisional acceptance.

2. The contractor shall be responsible for replacing dead, damaged, or unhealthy plant materials and in general insuring proper plant growth by watering as needed for a period of establishment, which shall be three hundred sixty (360) calendar days after the provisional acceptance is made. Plant materials shall be guaranteed for a period of one (1) year after provisional acceptance.

   a. Plant materials that have partially died so that the shape, size, or symmetry has been damaged shall be considered subject to replacement. In such case, the opinion of the landscape architect shall be final.

   b. Plants used for replacement shall be of the same quantity, size, kind and quality as those originally planted, and they shall be planted as originally specified. This extra work, including materials, labor, and equipment used in replacements, shall be at no cost to the landscape architect. Replaced plants shall carry the same establishment period as the original. Damage, including ruts in lawn or bed areas, existing utilities, paving, and other improvements, incurred in making replacements shall be immediately repaired to the satisfaction of the landscape architect.

   c. At the direction of the landscape architect, plants may be replaced at the start of the next year's planting or digging season, but in such cases, dead plants shall be removed from the premises immediately.

   d. The contractor agrees that for the period of establishment, he will water the plants during dry periods.

   e. This replacement guarantee does not apply where plants die after final acceptance because of injury by acts of God.

   f. Final acceptance will be made only if all plants are in place, living, and are in conformance with the drawings and these special provisions.

F. Insurance

Contractor is to provide the owner and landscape architect with certificate(s) from his insurance agent(s) indicating the coverage.

PART 2 – PRODUCTS

2.1 PLANT MATERIAL

A. General – Plants shall be well-formed No. 1 grade or better nursery stock and shall meet the applicable standards noted herein for nursery stock and shall be subject to rejection by the landscape architect. Plants shall remain the property of the contractor until final acceptance.

B. Plant List – A plant list is shown in the bid documents.

C. Nomenclature – The scientific and common names of plants herein specified conform to the approved names given in "Standardized Plant Names". Names of varieties not included therein conform generally with names accepted in the nursery trade.

D. Inspection/Rejection – The landscape architect may inspect plants at place of growth, but such inspection does not preclude the right of rejection on site. Any materials may be rejected if, in the opinion of the landscape architect, such does not meet the requirements of the plant list, drawings, or specifications. Rejected materials shall be removed from the site by the contractor at no cost to the landscape architect.

E. Plant Material Selection – Contractor may make provisions for landscape architect approval of all plant material to be used prior to installation (except those plant materials pre-selected by landscape architect). Approval of plant material may require a site visit to nursery field where material is grown. Expense of any site visit for plant material approval/selection will be the responsibility of the contractor.

F. Quantities – Quantities necessary to complete the planting as shown and located on the drawings shall be furnished. Dimension for ground cover beds have, in all instances, been established from scaled drawings. It is the contractor's responsibility to check these dimensions on the site and allow for correct quantity of plants accordingly.

G. Quality and Size

1. Specific requirements concerning the various species, sizes, and manner in which they are to be furnished are shown on the plans and plant list.

2. Plants and trees shall equal or exceed the measurements specified in the plant list, which are minimum acceptable sizes. They shall be measured before pruning, with branches in normal position. Dimensions for height and spread as contained herein refer to the main body of the plant and not from branch tip to branch tip. No pruning of branches to obtain the

required height shall be done before the plants are delivered to the site unless so approved by the landscape architect.

3. Stock furnished in a size range specified shall be interpreted to mean that not less than fifty percent (50%) shall be of the maximum size specified.

4. The determining measurements for the trees shall be the caliper and/or height as described in the plant list. Caliper shall be taken six (6) inches above the ground when the tree is in the natural position.

5. Plants larger in size than specified in the plant list may be used if approved by the landscape architect, but the use of larger plants shall not increase the contract price. If the use of larger plants is approved, the ball of earth shall be increased in proportion to the size of the plant.

6. Plants shall have a habit of growth that is normal for the species and shall be sound, healthy, vigorous, and free from insect pests, plant diseases, injuries, and aftereffects thereof.

7. Nursery grown plants shall mean plants that are healthy, vigorous, plants, lined out in rows in a nursery and which are cultivated, sprayed, pruned, and fertilized in accordance with good horticulture practice.

8. No trees that have had their leaders cut, or have been damaged so that cutting is necessary, will be accepted.

9. Plants lacking compactness or proper proportions and plants injured by too close planting in nursery rows will not be accepted.

10. Plants shall be freshly dug or containerized; neither heeled-in plants nor plants from cold storage will be accepted. Nursery grown plants shall have been transplanted or root pruned at least once in the past three (3) years.

11. Plants designated "B&B" in the plant list shall be balled and burlapped. Requirements for the measurement, branching grading, quality, balling and burlapping of the plants generally follow the code of standards in the "American Standard of Nursery Stock". They shall be dug with firm, natural balls of earth sufficient diameter and depth to encompass the plant. Balls shall be firmly wrapped with burlap or similar material and bound with twine or cord. Any plant loose in ball or with broken ball at time of planting will be rejected.

12. The balls of "B&B" plants that cannot be planted immediately on delivery shall be covered with moist soil or mulch. Plants shall be watered as necessary by the contractor until planting.

13. Plants grown in containers shall be fully rooted throughout the earth ball within the container, but not root bound. Container plants must be acclimated to area conditions.

H. Shape and Form:

1. Plant material shall be symmetrical, typical for the variety and species, and shall conform to the measurements specified in the plant list. Plants used where symmetry is required shall be matched as nearly as possible.

2. Plants meeting the requirements specified in the plant list, but not possessing a normal balance between height and spread will be rejected.

3. No plant shall be bound with wire or rope so as to damage the bark or break the branches. After planting, wires and ropes will be removed.

I. Substitutions – Will not be permitted without approval of landscape architect. If proof is submitted that any plant specified is not reasonably obtainable, a proposal will be considered for the use of the nearest equivalent size or variety with an equitable adjustment of contract price. Notification of possible substitutions prior to award of contract will be made at least **seven (7) DAYS** prior to bid opening.

2.2 SOIL PREPARATION MATERIAL

A. Topsoil – Shall be fertile, friable soil obtained from well drained arable land. It shall be free draining, non-toxic and capable of sustaining healthy plant growth. Topsoil shall be reasonably free of calcium carbonate, subsoil, refuse, roots, and other deleterious substances. The contractor shall furnish a written soil analysis by an accredited soil analyst. The analysis shall indicate pH, total soluble salts, plasticity index, and particle size gradation. If existing soil meets these specifications, it may be used.

B. Sand – Shall be loose, granular soil containing particles smaller than gravel but coarser than silt. Sandy soil shall contain a minimum of ninety percent (90%) sand and no greater than five percent (5%) clay.

C. Organic Soil Conditioner – Shall be partially decomposed ground pine bark.

D. Commercial Fertilizer – Shall be a complete tree and shrub fertilizer conforming to all applicable state fertilizer laws, shall be delivered in original, unopened containers, each bearing the manufacturer's guaranteed analysis, and shall be uniform in composition, dry, and free flowing. Any fertilizer that becomes wet, caked, or otherwise damaged, making it unsuitable for use will not be accepted.

E. Peat Moss – Shall be imported Canadian sphagnum peat, brown in color, low in content of woody material, and free of any mineral matter harmful to plant life. It shall of mildly acid (pH from 4.0 to 6.0), and have a water absorbing capacity of 1100% to 1200% by weight.

F. Bark Mulch – Shall consist of horticultural grade shredded hardwood mulch and shall be of sufficient character as not to be easily displaced by wind or water runoff. The bark shall have no more than fifteen percent (15%) cambium content. Mulch that is excessively decomposed will be rejected. The landscape contractor shall furnish the landscape architect with a one (1) quart sample of the mulch for approval prior to placing.

G. Pine Straw – Shall be freshly harvested, uniform in color, and free of deleterious materials.

H. Pre-Emergent Herbicide – Shall be a weed poisoning or sterilizing agent. Use amounts prescribed by the manufacturer.

I. Planting Mix – The planting mix for all bed areas, shrub pits, and tree pits shall consist of:

a. Four (4) part(s) topsoil (imported or existing soil)

b. One (1) part(s) sand

c. Two (2) part(s) organic soil conditioner

d. Six (6) cubic feet of peat moss per seventy (70) cubit feet of planting mix, or per one hundred (100) square feet of prepared bed area.

2.3 ACCESSORY MATERIALS

A. Staking

1. Stakes – Shall be as indicated on planting details.

2. Guying Material – Shall be as indicated on planting details.

3. Hose – Shall be as indicated on planting details.

PART 3 – EXECUTION

3.1 GENERAL

A. Cooperate with other contractors and trades working; in and adjacent to the landscape work areas. No portion of the work specified in this section shall proceed in areas where work of other crafts or contractors is to occur, until that work has been completed or until authorized to do so by the landscape architect.

B. Proceed with and complete the landscaping work as rapidly as portions of the site become available.

C. Determine location of underground utilities or other obstructions and perform work in a manner that will avoid possible damage. Hand excavate, as required to minimize possibility of damage.

D. Maintain grade stakes, forms, or work done by others until removal is agreed upon by all parties concerned.

E. No plant materials shall be delivered until site conditions are ready for planting, unless storage on site is approved by landscape architect.

3.2 DIGGING PREPARATION AND HANDLING

Digging Balled Plants – Plants designated "B&B", balled and burlapped, in the plant list shall be adequately balled with firm, natural balls wrapped in burlap. Balls shall be lifted from the bottom only, not by stems or trunks. Retain as many fibrous roots as possible. No "B&B" plant shall be shipped or planted if the ball is cracked or broken, or dug while wet.

A. Container Grown Plants – Plants designated in various size and type containers in the plant list shall be of a reasonable age and state of development as specified herein under "PLANT MATERIAL" and shall be stacked carefully during shipment to avoid damage. Plants dislodged from containers or dropped in shipment will be rejected.

B. Preparation – Prepare plants for shipment in a manner that will prevent any damage to the branches, shape, or future development of the plants. The contractor shall, in loading, unloading or handling plants, exercise the utmost care to prevent injuries to trunks, limbs, branches, and roots.

C. Protection – Plants shall be handled in such a manner as to avoid unnecessary damages of any kind. Handle plants so that roots, stems, and branches are adequately protected at all times from drying out before and during the planting process. If not immediately planted upon delivery, the balls of balled plants shall be covered with moist soil or mulch, or other protection to keep roots moist. Locate these and container plants located in flats, pots or other containers in a sheltered area protected from the sun, wind, and mechanical damage. Plants shall be watered as necessary until planted.

D. Shipment and Delivery

1. When shipment is made by truck, plant material shall be packed to provide adequate protection against climatic and breakage injuries during transit. The tops shall be securely covered to minimize wind shipping and drying.

2. A suitable method of handling shall be employed to insure the careful, workmanlike delivery of balled plants to preclude cracked or

"mushroomed" plant balls at the point of delivery. Under no circumstances shall be balled plants be dropped from trucks to ground.

3. The contractor shall notify the landscape architect in advance, of the time and manner of delivery of plants, and shall furnish an itemized list in duplicate of the actual quantity of plant materials in each delivery in order to expedite the required inspection at point of delivery.

3.3 PLANTING AND BED PREPARATION

A. General

1. Time and Planting – Planting operations shall be conducted under favorable weather conditions during the seasons that are normal for such work as determined by accepted practice in the locality.

2. Preparation of Planting Operations – Before planting operations are begun, existing turf areas which are to be trucked over or upon which soil is to be temporarily stacked pending its reuse or removal, or turf areas which may be subject to abuse of any other kind, shall be covered in a manner which will satisfactorily protect such areas from damage.

3. Plant Material Locations – As shown on the drawings are diagrammatic, and the exact locations shall be approved by the landscape architect. Shade and ornamental trees shall be located with stakes according to the plan. Shrubs, vines, and ground cover shall be positioned on prepared bed areas as shown on the drawings in their original containers. After quantity, staking, and spacing has been adjusted, if necessary, and approved by the landscape architect, plant where located.

4. Obstructions or Unsuitable Conditions Below Grade – Any rock over ¾" diameter, concrete, or other underground obstruction or unsuitable planting soil shall be removed to the depth necessary to permit proper planting. If underground construction, utilities, unusually large rock, other serious obstructions or unsuitable soil conditions are encountered in planting areas, other locations for the planting may be selected by the landscape architect.

B. Excavation for Planting

1. Pits – Shall be circular in outline with vertical, scarified sides and flat bottoms. Mechanical digging of pits may be approved by the landscape architect. Pits shall be at least two (2) feet greater in diameter than the diameter of the ball. Pits for trees and shrubs shall be of sufficient depth to allow a six-inch (6") layer of planting soil spread around the ball while resting on scarified subgrade when they are set to grade.

2. Planting Beds – Shall be stripped of any grass and weeds and shrub beds shall be tilled to a depth of nine inches (9").

C. Soil Preparation

1. General – Bed areas shall have nine inches (9") minimum of planting soil prepared as specified under "2.2 SOIL PREPARATION MATERIAL". Treat bed areas with a pre-emergent herbicide at the manufacturers recommended rates.

2. Tree Pits – Planting soil for backfill shall be prepared as specified under "2.2 SOIL PREPARATION MATERIAL".

3. Raised Planters – Planting soil for backfill shall be prepared as specified under "2.2 SOIL PREPARATION MATERIAL".

D. Setting Plants

1. General – Plants, excepting ground cover plants, shall be set approximately one and one-half to two inches (1½" - 2") above existing grade so that after settlement they will bear the same relationship to the finished grade of the surrounding soil that they bore to the grade of the soil from which they were dug.

2 Balled Plants – After pits have been dug as specified previously, set plants straight and plumb in pits and remove burlap from sides and tops of balls, but no burlap shall be pulled from underneath. Place prepared planting soil around the ball to two-thirds (2/3) depth of the pit. Firmly tap and compact carefully to avoid injury to roots and to fill voids. Add water and allow it to soak away, and fill the pit to finished grade with soil. After the ground settles, additional soil shall be filled in to the level of the finished grade.

3. Plants in Beds – Carefully insert plants into prepared topsoil at slightly above finished grade. When plants are in place, rake the entire bed area smooth, water and allow to soak in. After settlement, add soil as necessary to finished grade and water again.

E. Forming Saucers – After planting has been completed, form a "saucer" or "bowl" of soil around each plant. Bowl shall extend to the limits of the plant pit for trees and shrubs. No bowls are required in areas of bed preparation, and shrubs in lines may share a common bowl around their perimeter.

F. Fertilizing of Planting

1. Rates – Use a complete fertilizer as specified and apply at the manufacturer's recommended rates:

2. Placement – Place fertilizer uniformly around and within the diameter of the plant saucer and work into the upper layer of planting soil, except in bed areas where fertilizer is worked into the soil. Fertilizer used in backfilling planting soil shall be mixed with excavated soil prior to backfilling operations.

G. Mulching – Upon completion of planting trees and shrubs, bed areas shall be mulched with a four-inch (4") layer of **pine straw** entirely covering the area around each plant. In case of bed areas, the area between the plants is to be so treated, regardless of plant spacing. Trees shall be mulched entirely covering the tree pit area and the saucer. Alternative mulching materials will be considered by the landscape architect.

3.4 PRUNING AND STAKING

A. Pruning

1. Each tree shall be pruned by an experienced plants man to preserve the natural shape and character of the tree immediately upon acceptance by the landscape architect. Method of pruning shall be demonstrated for landscape architect's approval before beginning pruning process.

2. Prune any broken branches, thin small branches, soft wood, or sucker growth, and tip back main branches (except main leaders). Additional, pruning may be required by landscape architect after planting is completed.

3. Pruning cuts shall be sharp and clean. Pruning cuts over three-fourths inch (¾") in diameter shall be painted with an approved tree surgery paint or sealer, applied to all cambium and other open living tissue immediately after cuts are made.

B. Staking

1. Trees over one inch (1") caliper shall be securely staked as indicated on planting details and shall be accomplished immediately after planting.

3.5 SAMPLES, TESTS AND INSPECTIONS

A. Submit samples called for in these specifications. These samples, if approved shall be maintained as representative examples for future use of these materials.

B. The contractor shall be responsible for certificates of inspection of plant materials that may be required by federal, state or other authorities to accompany shipments

of plants. Inspection of plants to be balled and burlapped may be made at the place of growth by the landscape architect. Plants may be inspected and approved before they are planted. Inspection and approval by landscape architect of plants at the place of growth or upon delivery shall be of quality, size and vitality only and shall not in any way impair the right of rejection for failure to meet other requirements during progress of work.

C. Analyses and test of materials, if required, such as fertilizers, mulch, peat moss, insecticides, and topsoil shall be made in accordance with the current methods of the Association of Official Agricultural Chemists and shall be bade at the contractor's expense before delivery to the site. Packaged and sealed standard products accompanied by manufacturer or vendor's analyses, complying with specified requirements will be acceptable.

D. The contractor, at his own expense, if required by the landscape architect, shall have the topsoil analyzed to determine the type of fertilizer required and rates of application of fertilizer. The analyses shall be made by an approved laboratory or government agency using samples taken and submitted by the contractor according to laboratory or agency instructions. The samples tested shall consist of a representative mixture from each source.

E. Approval of materials shall not be construed as final acceptance and the landscape architect reserves the right to analyze, for comparison with specification requirements, any materials delivered for use in work under this section. The cost of such tests will be borne by the landscape architect. Should these tests indicate noncompliance with specification requirements; the landscape architect will charge the entire costs of such tests to the contractor. Rejected materials shall be removed from the site and replaced with acceptable material.

3.6 CLEAN UP

As planting operations proceed, rope, wire, burlap, empty containers, rocks, clods and other debris left by the contractor shall be removed daily and not allowed to accumulate, and the site shall be kept as tidy as possible at all times. Excess excavated topsoil or rich loam shall be placed where and as directed by landscape architect. After planting operations are finished, paved areas which have become dirty or strewn with other materials shall be thoroughly cleaned by sweeping and washing.

3.7 SUBSTANTIAL COMPLETION

An inspection of the project will be made by the landscape architect at project completion. Once the entire project is approved, substantial completion will be granted by the landscape architect. From the date of this inspection, the maintenance and guarantee periods will begin.

3.8 MAINTENANCE

A. Maintenance shall begin immediately after each portion of the project is completed and shall continue through the end of construction and then for a period of three hundred sixty (360) days past the date of substantial completion.

B. Contractor shall maintain materials by pruning, cultivating, watering, weeding, fertilizing, restoring planting saucers, tightening and repairing stakes and guy supports, and resetting to proper grades or vertical position, as required to establish healthy, viable plantings. Treat as required to keep trees free of insects and disease. Inspect plants at least once a week and perform maintenance promptly.

C. The cost of maintenance shall be included in the bid price. Areas damaged by tree and shrub replacement operations shall be fully restored to their original condition. Maintenance performed must be acceptable to the landscape architect.

3.9 FINAL INSPECTION AND ACCEPTANCE

A. Inspection of the work to determine completion, exclusive of the possible replacement of plants, for provisional acceptance and beginning the period of establishment will be made by the landscape architect upon written notice by the contract requesting such inspection provided all plants are in place, living, and conform to these specifications. The notice shall be submitted to the landscape architect at least ten (10) days prior to the anticipated date when the work is to be completed.

B. After inspection, if the work is acceptable, the contractor will be notified in writing by the landscape architect of provisional acceptance and the beginning of the period of establishment. The contractor will also be notified of any deficiencies in the requirements for receiving provisional acceptance. Work remaining to be done shall be subject to re-inspection before acceptance.

C. Corrections and replacements for final acceptance will be made only under the conditions of period of establishment and replacements under section 1.4 "SPECIAL LANDSCAPE PROVISIONS". Contractor will be notified in writing by the landscape architect of any deficiencies of the requirements for completion of the work prior to the end of the period of establishment or of final acceptance of the work.

3.10 PAYMENT

Contractor shall submit requests for progress payments at regular intervals during the project as a percentage complete of the amount of values identified in the schedule. After inspection by landscape architect to determine if all plants are in place, living and conform to these specifications, payment will be authorized. A ten percent (10%) retainer will be held by the owner from each progress payment until final payment is authorized. At this time, the remaining balance and retainers may be applied for.

END OF SECTION 02480

SECTION 02510

PORTLAND CEMENT CONCRETE PAVEMENT

PART 1 – GENERAL

1.1 DESCRIPTION

The contractor shall furnish all material, labor, tools, equipment and related items to provide concrete sidewalks as required in these specifications or on the project drawings.

1.2 SUBMITTALS

The contractor shall submit to the engineer for review and approval the following items:

1. Concrete Mix Design

PART 2 – PRODUCTS

2.1 GENERAL

Materials, equipment details, testing and construction methods used during construction of sidewalks, except as otherwise specified herein, shall comply with the requirements set forth in sections pertaining to "Portland Cement Concrete Pavement".

2.2 CONCRETE

A. Concrete sidewalks shall be constructed using a four-inch (4") concrete pavement as described herein and shown on the drawings. Concrete shall be of 3,000 psi strength with expansion joints spaced at thirty feet (30') intervals and contraction joints spaced at four feet (4') maximum centers.

1. 5 1/4 sack mix per cubic yard
2. 5" maximum slump
3. Compressive strength: 3,000 psi @ 28 days
4. Air Content = 5% + 1%

PART 3 – EXECUTION

3.1 CONCRETE

A. Transverse (expansion or contraction), longitudinal and construction joints shall all be installed in accordance with the drawings. Include the minimum number and spacing of expansion joints shown in the drawings. Driveways shall have an additional tooled joint at ten feet (10') o.c. Sidewalks shall be scored at four feet (4') maximum o.c.

B. Density tests shall be required for all roadway base materials where required in the contract. The contractor shall not be allowed to restore the roadway until all density tests have been completed and the results meet the specifications.

C. Contractor is required to extend sand base/sub-base minimum of two feet (2') beyond the edge of concrete pavement.

END OF SECTION 02510

SECTION 03100

CONCRETE FORMWORK

PART 1 – GENERAL

1.1 DESCRIPTION

Contractor shall furnish all materials, labor, tools, equipment and related items required to provide forms for cast-in-place concrete as specified herein.

1.2 QUALITY ASSURANCE

A. The following current edition publications of the American Concrete Institute shall become a part of this specification to the extent applicable in each reference thereto:

ACI 347 Guide to Formwork for Concrete

ACI 301 Specifications for Structural Concrete for Buildings

ACI 318 Building Code Requirements for Structural Concrete

B. Design Criteria

1. Design formwork for loads and lateral pressures outlined in ACI 347, wind loads as specified by the controlling local building code, and such other loads to which the forms may be subjected. Comply with the requirements of all state and federal safety standards.

2. Details of formwork shall comply with ACI 347.

3. Earth cuts shall not be used as forms for vertical surfaces, unless indicated on the drawings and/or approved by engineer.

4. The requirement for facing materials shall be compatible with finish requirements specified in Section 03300 – Cast-In-Place Concrete.

C. Tolerances

1. The maximum deflection of facing materials reflected in concrete surfaces exposed to view shall be 1/240 of the span between structural members.

2. Formwork shall be constructed to ensure that the concrete surfaces will comply with tolerances in ACI 301.

PART 2 – PRODUCTS

2.1 Plywood used for forms shall be Exterior-Type APA Class 1 as graded by the American Plywood Association.

2.2 Steel forms shall be free of dents and other defects which would make them susceptible to leakage or disfigurement of the finished concrete surface.

2.3 Form oil shall be a non-staining paraffin-base oil having a specific gravity of between 0.8 and 0.9.

2.4 All release agents used shall be non-staining.

PART 3 – EXECUTION

Form construction, preparation of form surfaces, removal of forms and reshoring shall comply with ACI Standard 347: "Guide to Formwork for Concrete" current edition.

END OF SECTION 03100

SECTION 03200

CONCRETE REINFORCEMENT

PART 1 – GENERAL

1.1 DESCRIPTION

Contractor shall furnish all materials, labor, tools, equipment and related items required to provide and place all concrete reinforcing as specified herein.

1.2 QUALITY ASSURANCE

A. The specifications of the American Society for Testing and Materials (ASTM) current edition referred to below shall be considered a part of this Section the same as if fully set forth herein, to the extent applicable in each reference:

A-615 for Standard Specification for Deformed and Plain Billet Steel Bars Concrete Reinforcement

B. The following current edition publications of the American Concrete Institute (ACI) and the Concrete Reinforcing Steel Institute (CRSI) shall become a part of this specification to the extent applicable in each reference thereto:

ACI 315 Details and Detailing of Concrete Reinforcement

ACI 318 Building Code Requirements for Structural Concrete

CRSI Manual of Standard Practice

1.4 SUBMITTALS

Submit detail and placing drawings complying with the recommendations in ACI 315. Submittals shall comply with the requirements of Section 01340 – Shop Drawings, Product Data, and Samples.

1.5 STORAGE

Steel reinforcing bars shall be stored in such a manner as to prevent any direct contact with the ground or existing structures.

PART 2 – PRODUCTS

2.1 REINFORCING STEEL

A. Reinforcing bars shall comply with ASTM A-615, Grade 60.

B. Welded wire fabric shall comply with ASTM A-185.

2.2 BAR SUPPORTS AND SPACERS

A. Manufacture wire supports to comply with "Manual of Standard Practice, CRSI."

B. Manual of standard practice for detailing reinforced concrete structures.

PART 3 – EXECUTION

3.1 CONCRETE PROTECTION FOR REINFORCEMENT

A. Place and secure steel reinforcement in position so the concrete cover, as measured from the surface of the bar, will be the following, except as otherwise specified or indicated on the drawings:

1. Cast-in-place concrete (nonprestressed). The following minimum concrete cover shall be provided for reinforcement:

		Minimum Cover (inches)
a.	Concrete cast against and permanently exposed to earth	3"
b.	Concrete exposed to earth or weather:	
	#6 through #18 bars ...	2"
	#5 bar, W31 or D31 wire, and smaller ...	1½"
c.	Concrete not exposed to weather or in contact with ground: slabs, walls, joists:	
	#14 and #18 bars ...	1½"
	#11 bar and smaller ...	¾"
d.	Beams, columns: Primary reinforcement, ties, stirrups, spirals ...	1½"

2. Precast concrete (manufactured under plant control conditions)

The following minimum concrete cover shall be provided for reinforcement:

a. Concrete exposed to earth or

weather wall panels:	
#14 and #18 bars ...	1½"
#11 bar and smaller ...	¾"
Other Members:	
#14 and #18 bars ...	2"
#6 through #11 bars ...	1½"
#5 bar, W31 or D31 wire, and smaller ...	1¼"

b. Concrete not exposed to weather or in contact with ground:

Slabs, walls, joists:	
#14 and #18 bars ...	1¼"
#11 bar and smaller ...	$^5/_8$"
Beams, columns: Primary reinforcement. d_b Nominal Diameter of Bar, Wire or Strand but not less than $^5/_8$ and not larger than 1½	
Ties, stirrups, spirals ...	$^3/_8$"

3.2 PLACING

A. Support and wire all reinforcing bars together to prevent displacement by construction loads or the placing of concrete beyond the tolerances specified. Use supporting concrete blocks on ground surfaces. Use concrete, metal, or plastic bar chairs over forms. The portion of all accessories in contact with the formwork shall be plastic, galvanized or plastic coated where the concrete surface will be exposed to the weather in the finished structure, or where rust would impair architectural finishes.

B. Furnish and set templates for all column dowels to insure proper placement.

C. Splices, when approved by the engineer, may be used at locations not shown on the drawings. All splices shall comply with standard structural details.

D. Reinforcement shall not be bent after being embedded in hardened concrete unless approved by the engineer.

E. Bars may be moved as necessary to avoid interference with other reinforcing steel, conduits, or embedded items. If bars are moved more than one bar diameter, or enough to exceed the above tolerances, the resulting arrangement of bars shall be subject to approval by the engineer.

3.3 FIELD QUALITY CONTROL

A. Physical properties of reinforcing steel are subject to testing by an independent laboratory for compliance with ASTM A-615. The contractor shall furnish all samples required for such testing.

B. The contractor shall give the engineer twenty-four (24) hour notice of the completion of reinforcing steel setting, and sufficient time before the start of concrete placement to inspect the layout and for contractor to make any required corrections.

END OF SECTION 03200

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

1.1 SCOPE OF WORK

The contractor shall furnish all labor, materials, equipment and incidentals required to install cast-in place concrete, including formwork, reinforcement, concrete materials, mix design, placement procedures, and finishes.

1.2 RELATED SPECIFICATIONS

A. Section 03100 - Concrete Formwork

B. Section 03200 - Concrete Reinforcement

1.3 SUBMITTALS

Submittals shall be in accordance with Section 01340 - Shop Drawings, Product Data, and Samples and include:

A. Product Data: For each type of manufactured material and product indicated.

B. Design Mixes: For each concrete mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.

1. Indicate amounts of mix water to be withheld for later addition at project site.

C. Steel Reinforcement Shop Drawings: Details of fabrication, bending, and placement, prepared according to ACI 315, "Details and Detailing of Concrete Reinforcement." Include material, grade, bar schedules, stirrup spacing, bent bar diagrams, arrangement, and supports of concrete reinforcement. Include special reinforcement required for openings through concrete structures

D. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork. Design and engineering of formwork are contractor's responsibility.

1. Shoring and Re-shoring: Indicate proposed schedule and sequence of stripping formwork, shoring removal, and installing and removing re-shoring.

E. Material Certificates: Signed by manufacturers certifying that the following complies with requirements:

1. Concrete Mix Design.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, each aggregate from one source, and each admixture from the same manufacturer.

B. ACI Publications: Comply with the following, unless more stringent provisions are indicated:

1. ACI 301, "Specification for Structural Concrete."

2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

C. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Meetings."

Before submitting design mixes, review concrete mix design and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:

1. Contractor's superintendent.

2. Independent testing agency responsible for concrete design mixes.

3. Ready-mix concrete producer.

4. Concrete subcontractor.

1.5 DELIVERY, STORAGE, AND HANDLING

Deliver, store, and handle steel reinforcement to prevent bending and damage.

PART 2 – PRODUCTS

2.1 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest

practicable sizes to minimize number of joints. Panels shall be plywood, metal, or other approved panel materials.

B. Chamfer Strips: Wood, metal, PVC, or rubber strips, ¾ x ¾ inch, minimum.

C. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

D. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spilling of concrete on removal.

1. Furnish units that will leave no corrodible metal closer than 1 inch (1") to the plane of the exposed concrete surface.

2. Furnish ties that, when removed, will leave holes not larger than 1 inch (1") in diameter in concrete surface.

2.2 STEEL REINFORCEMENT

Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.

2.3 REINFORCEMENT ACCESSORIES

A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or pre-cast concrete or fiber-reinforced concrete of greater compressive strength than concrete, and as follows:

1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected or CRSI Class 2 stainless-steel bar supports.

2.4 CONCRETE MATERIALS

A. Portland Cement: ASTM C 150, Type II or Type V, including Table 2 optional requirements.

B. Normal-Weight Aggregate: ASTM C 33, uniformly graded, and as follows:

1. Class: Moderate weathering region, but not less than 3M.

2. Nominal Maximum Aggregate Size: One and one-half inches (1½").

C. Water: Potable and complying with ASTM C 94.

2.5 ADMIXTURES

A. General: Admixtures certified by manufacturer to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material and to be compatible with other admixtures and cementitious materials. Do not use admixtures containing calcium chloride.

B. Air-Entraining Admixture: ASTM C 260.

C. Water-Reducing Admixture: ASTM C 494, Type A.

D. Water-Reducing and Accelerating Admixture: ASTM C 494, Type E.

E. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.

2.6 VAPOR RETARDERS

A. Vapor Retarder: ASTM E 1745, Class C, of one of the following materials; or polyethylene sheet, ASTM D 4397, not less than ten (10) mils thick:

1. Nonwoven, polyester-reinforced, polyethylene coated sheet; ten (10) mils thick.

2. Three-ply, nylon- or polyester-cord-reinforced, laminated, high-density polyethylene sheet; 7.8 mils thick.

2.7 FLOOR AND SLAB TREATMENTS

For finish see Section 3.10.

2.8 CURING MATERIALS

A. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

B. Water: Potable.

2.9 RELATED MATERIALS

A. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

B. Epoxy Joint Filler: Two-component, semi rigid, one hundred percent (100%) solids, epoxy resin with a Shore A hardness of eighty (80) per ASTM D 2240.

C. Bonding Agent: ASTM C 1059, Type II, non re-dispersible, acrylic emulsion or styrene butadiene.

D. Epoxy-Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class and grade to suit requirements, and as follows:

1. Type II, non-load bearing, for bonding freshly mixed concrete to hardened concrete.

2. Types I and II, non-load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

3. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2.10 CONCRETE MIXES

A. Prepare design mixes for each type and strength of concrete determined by either laboratory trial mix or field test data bases, as follows:

1. Proportion normal-weight concrete according to ACI 211.1 and ACI 301.

B. Interpretive Kiosk: Proportion normal-weight concrete mix as follows:

1. Compressive Strength (28 Days, 90 Days if pozzolans are used): 4,000 psi.

2. Maximum Slump: 4 inches.

3. Maximum Water/Cement Ratio: 0.45

C. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

D. Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

2. Use water-reducing admixture in pumped concrete.

2.11 FABRICATING REINFORCEMENT

Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.12 CONCRETE MIXING

Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94.

PART 3 – EXECUTION

3.1 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until concrete structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:

1. Exposed Surfaces: Class A, 1/8 inch.

2. Unexposed Surfaces: Class D, ½ inch.

D. Construct forms tight enough to prevent loss of concrete mortar.

E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical. Kerf wood inserts for forming keyways, recesses, and the like, for easy removal.

G. Do not use rust-stained steel form-facing material.

H. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

I. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

J. Chamfer exterior corners and edges of permanently exposed concrete.

K. Form openings, chases, offsets, sinkages, keyways, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

L. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

M. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

N. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use Setting Drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

B. Install anchor bolts, accurately located, to elevations required.

3.3 REMOVING AND REUSING FORMS

A. General: Formwork, for sides of beams, walls, columns, and similar parts of the Work, that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete provided concrete is hard enough to not be damaged by form-removal operations and provided curing and protection operations are maintained.

B. Leave formwork, for beam soffits, joists, slabs, and other structural elements, that supports weight of concrete in place until concrete has achieved the following:

1. At least 70 percent of 28-day design compressive strength.

C. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

D. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by engineer.

3.4 SHORES AND RESHORES

Comply with ACI 318, ACI 301, and recommendations in ACI 347R for design, installation, and removal of shoring and reshoring.

3.5 VAPOR RETARDERS

Vapor Retarder: Place, protect, and repair vapor-retarder sheets according to ASTM E 1643 and manufacturer's written instructions.

3.6 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.

3.7 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Engineer.

1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.

2. Form from preformed galvanized steel, plastic keyway-section forms, or bulkhead forms with keys, unless otherwise indicated. Embed keys at least 1-1/2 inches into concrete.

3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.

4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.

5. Space vertical joints in walls as indicated.

6. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

3.8 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Do not add water to concrete during delivery, at Project site, or during placement.

C. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Deposit concrete to avoid segregation.

D. Deposit concrete in forms in horizontal layers no deeper than 24 inches and in a manner to avoid inclined construction joints. Place each layer while preceding layer is still plastic, to avoid cold joints.

1. Consolidate placed concrete with mechanical vibrating equipment. Use equipment and procedures for consolidating concrete recommended by ACI 309R.

2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations no farther than the visible effectiveness of the vibrator. Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mix constituents to segregate.

E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.

2. Maintain reinforcement in position on chairs during concrete placement.

3. Screed slab surfaces with a straightedge and strike off to correct elevations.

4. Slope surfaces uniformly to drains where required.

5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, free of humps or hollows, before excess moisture or bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.

2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix designs.

G. Hot-Weather Placement: Place concrete according to recommendations in ACI 305R and as follows, when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.

2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.

3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.9 FINISHING FORMED SURFACES

A. Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defective areas repaired and patched. Remove fins and other projections exceeding ACI 347R limits for class of surface specified.

1. Apply to concrete surfaces exposed to public view or to be covered with a coating or covering material applied directly to concrete, such as waterproofing, dampproofing, veneer plaster, or painting.

B. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.10 FINISHING FLOORS AND SLABS

A. General: Comply with recommendations in ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.

1. Apply float finish to surfaces indicated, to surfaces to receive trowel finish, and to floor and slab surfaces to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sand-bed terrazzo.

C. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Engineer before application.

3.11 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete work.

3.12 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-

weather protection and with recommendations in ACI 305R for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing by one or a combination of the following methods:

D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces, by one or a combination of the following methods:

1. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3.13 FIELD QUALITY CONTROL

A. Testing Agency: Contractor will engage a qualified independent testing and inspecting agency to sample materials, perform tests, and submit test reports during concrete placement. Sampling and testing for quality control may include those specified in this Article.

B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mix exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.

2. Slump: ASTM C 143; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.

3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; ASTM C 173, volumetric method, for structural

lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.

4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.

5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of four standard cylinder specimens for each composite sample.

6. Compressive-Strength Tests: ASTM C 39; test two (2) laboratory-cured specimens at seven (7) days and two (2) at twenty-eight (28) days.

a. Test two (2) field-cured specimens at seven (7) days and two (2) at twenty-eight (28) days.

b. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at age indicated.

C. Strength of each concrete mix will be satisfactory if every average of any three (3) consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.

D. Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within forty-eight (48) hours of testing. Reports of compressive-strength tests shall contain project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in work, design compressive strength at twenty-eight (28) days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-and 28-day tests.

E. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by engineer but will not be used as sole basis for approval or rejection of concrete.

F. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by engineer. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42 or by other methods as directed by engineer.

END OF SECTION 03300

SECTION 04220

CONCRETE MASONRY UNITS

PART 1 – GENERAL

1.1 SCOPE OF WORK

The contractor shall furnish all labor, materials, equipment and incidentals necessary to complete all concrete masonry unit work as shown on the drawings and/or specified herein. Work shall be performed with adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and methods needed for proper performance of the work in this section.

1.2 REFERENCES

Concrete masonry unit work shall comply with the most recent standards or tentative standards as published at the date of the contract and as listed in this specification using the abbreviation shown.

1. American Society for Testing and Materials (ASTM):

A 82 Standard Specification for Steel Wire, Plain, for Concrete Reinforcement

A 641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire

C 5 Standard Specification for Quicklime for Structural Purposes

C 90 Standard Specification for Loadbearing Concrete Masonry Units

C 144 Standard Specification for Aggregate for Masonry Mortar

C 150 Standard Specification for Portland Cement

C 207 Standard Specification for Hydrated Lime for Masonry

C 270 Standard Specification for Mortar for Unit Masonry

C 476 Standard Specification for Grout for Masonry

2. Concrete Reinforcing Steel Institute (CRSI):

Manual of Standard Practices

1.3 DEFINITIONS

Fluid Consistency: Interpreted as meaning as fluid as possible for pouring the grout intimately in place without segregation.

1.4 SUBMITTALS

Within thirty (30) calendar days after the contractor has received the owner's notice to proceed, the contractor shall submit:

1. List of items proposed to be provided under this Section.

2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

3. Samples of materials showing color and texture for review and selection by owner.

1.5 TRANSPORTATION, STORAGE AND HANDLING

Transportation and handling of all material pertinent to this section shall be in accordance with Section 01600. Storage and protection of all material shall be in accordance with Section 01600.

PART 2 – MATERIALS

2.1 CONCRETE MASONRY UNITS

A. Type

Concrete masonry units shall be normal smooth faced and split face normal weight, hollow non load-bearing type complying with ASTM C 90, Grade N, Type I, in color "natural gray."

B. Dimensions

The contractor shall:

1. Provide units of the dimensions shown on the plans.

2. Where dimensions are not shown on the plans, all units shall have nominal dimensions sixteen inches (16") by eight inches (8") by eight inches (8").

C. Accessory Shapes

Accessory shapes shall be provided as indicated on the plans or otherwise required.

2.2 REINFORCEMENT AND ACCESSORIES

A. Wall Horizontal Reinforcing

Horizontal reinforcing shall be "single truss" type, with side rods of 3/16 inch minimum diameter and diagonal cross rods of nine (9) gauge minimum diameter. Reinforcing shall have a forty (40) ounce zinc coating, specified by ASTM A 641, Class I. Wire shall conform with ASTM A 82.

B. Wall Vertical Bars and All Other Reinforcing

Fabricate reinforcement in accordance with recommendations contained in CRSI "Manual of Standard Practices" and as shown on the plans.

2.3 PORTLAND CEMENT

Cement shall be domestic Portland cement conforming to ASTM Designation C-150, Type II.

2.4 LIME

A. Hydrated Lime

Lime for mortar shall be hydrated, conforming to ASTM Designation C-207 Type S.

B. Quicklime

Material shall comply with ASTM C 5. When Quicklime is used, slake and then screen through a 16-inch (16") mesh sieve. After slaking and screening, but before using, store and protect for not less than ten (10) days.

2.5 AGGREGATE

Sand shall be clean, hard, sharp, durable particles, preferably siliceous, and with not more than five percent (5%) in volume of loam, mica, clay, or other deleterious substances, and free from injurious amounts of organic matter. The sand shall be graded from fine to coarse so that, when tested dry, it will conform to the limits of ASTM Specification for Aggregate for Masonry mortar C-144.

2.6 WATER

Water shall be of potable quality, free from injurious amounts of oils, acids, alkalis or organic matter, and shall be clean and fresh.

2.7 ADMIXTURES

Admixtures shall not be used unless specifically approved in advance by the engineer.

PART 3 – EXECUTION

3.1 ENVIRONMENTAL CONDITIONS

Masonry units shall not be placed when air temperature is below forty (40) degrees F. Masonry construction shall be protected from direct exposure to wind and sun when erected in ambient air temperature of ninety-nine (99) degrees F in the shade and with relative humidity less than 50 percent (50%).

3.2 MORTAR

Mortar shall comply with the following:

1. Provide mortar type "S," unless otherwise directed by the engineer, and in accordance with ASTM C 207.

2. Proportions: For type "S" mortar, provide one (1) part portland cement to one-half (½) part hydrated lime and four and one-half (4½) parts of sand by volume.

3. Mechanically mix in a batch mixer for not less than three (3) minutes, using only sufficient water to produce a mortar which is spreadable and of workable consistency.

4. Retemper mortar with water as required to maintain high plasticity.

5. On mortar boards, retemper only by adding water within a basin formed with mortar, and by working the mortar into the water.

6. Discard and do not use mortar which is unused after one and one-half (1½) hours following initial mixing.

3.3 GROUT

Grout shall comply with the following:

1. Provide "fine grout" as designated on the plans or otherwise directed by the engineer, and in accordance with ASTM C 476.

2. When the minimum grout compressive strength is required to be more than 2000 psi, provide laboratory design mix prepared as required for design mixes of concrete in accordance with Section 03300 – Cast-In-Place Concrete.

3. Proportions: For "fine grout," provide one (1) part portland cement to two and one-fourth (2¼) parts minimum to three (3) parts maximum of damp loose sand, with sufficient water to achieve fluid consistency.

3.4 INSTALLATION

A Installation shall comply with the following:

1. Do not commence installation of the work of this section until horizontal and vertical alignment of foundation is within one inch (1") of plumb and the lines shown on the plans.

2. Lay only dry masonry units.

3. Use masonry saws to cut and fit masonry units.

4. Set units plumb, true to line, and with level courses accurately spaced.

5. Clean the top surface of foundation free from dirt, debris, and laitance, and exposure to aggregate prior to start of installing first course.

6. Accurately fit the units to plumbing, ducts, openings, and other interfaces, neatly patching all holes.

7. Keep the walls continually clean, preventing grout and mortar stains. If grout does run over, clean immediately.

B. Vertical Joints

Unless otherwise shown on the plans, provide running bond with vertical joints located at center of masonry units in the alternate course below.

C. Damaged Material

Do not use chipped or broken units. If such units are discovered in the finished wall, the engineer may require their immediate removal and replacement with new units at no additional cost to the owner.

D. Laying Up

Place units in mortar with full shoved bed and head joints. Align vertical cells of hollow units to maintain a clear and unobstructed system of flues. Hold racking to an absolute minimum.

E. Tooling

Tool joints to a dense, smooth surface. Provide joints of "concave" pattern throughout, on both exposed faces of all concrete masonry units. When tooling split face or textured units, finish joints to match adjacent recesses in block.

F. Reinforcement

Provide reinforcement as shown on the plans, fully embedded in mortar joints.

3.5 GROUT

Grouting shall be performed in strict accordance with the provisions of the governing building code.

Solidly fill vertical cells containing reinforcement. Consolidate grout at time of pour by puddling with a mechanical vibrator, filling all cells of the masonry, and then reconsolidating later by puddling before the plasticity is lost.

3.6 CLEANING

Clean surfaces of masonry as required for proper application of the specified finishes.

3.7 INSPECTION AND ADJUSTMENT

Upon completion of the work of this Section, make a thorough inspection of installed masonry and verify that units have been installed in accordance with the provisions of this Section.

END OF SECTION 04220

SECTION 05120

STRUCTURAL STEEL

PART 1 – GENERAL

1.1 SUMMARY

A. This Section includes structural steel.

1.2 SUBMITTALS

Submittal shall be in accordance with Section 01340 "Shop Drawings, Product Data, and Samples" and include:

Product Data: For each type of product indicated.

Shop Drawings: Show fabrication of structural-steel components.

Welding certificates.

Mill test reports.

Source quality-control test reports.

1.3 QUALITY ASSURANCE

A. Welding: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code--Steel."

B. Comply with applicable provisions of AISC's "Code of Standard Practice for Steel Buildings and Bridges."

PART 2 – PRODUCTS

2.1 STRUCTURAL-STEEL MATERIALS

A. W-Shapes: ASTM A 572, Grade 50.

B. Channels, Angles-Shapes: ASTM A 572, Grade 50.

C. Plate and Bar: ASTM A 572/A 572M, Grade 50.

D. Cold-Formed Hollow Structural Sections: ASTM A 500, Grade B, structural tubing.

E. Steel Pipe: ASTM A 53/A 53M, Type E or S, Grade B.

F. Welding Electrodes: Comply with AWS requirements.

2.2 BOLTS, CONNECTORS, AND ANCHORS

A. High-Strength Bolts, Nuts, and Washers: ASTM A 325, Type 1, heavy hex steel structural bolts; ASTM A 563 heavy hex carbon-steel nuts; and ASTM F 436 hardened carbon-steel washers.

1. Finish: Plain.

B. Threaded Rods: ASTM A 193, or ASTM A 36

2.3 PRIMER

A. Primer: SSPC-Paint 25, Type II, iron oxide, zinc oxide, raw linseed oil, and alkyd.

B. Primer: Fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer.

2.4 FABRICATION

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate according to AISC's "Code of Standard Practice for Steel Buildings and Bridges" and AISC's "Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design."

2.5 SHOP CONNECTIONS

A. High-Strength Bolts: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 Bolts" for type of bolt and type of joint specified.

1. Joint Type: Slip critical.

B. Weld Connections: Comply with AWS D1.1 for welding procedure specifications, tolerances, appearance, and quality of welds and for methods used in correcting welding work.

2.6 SHOP PRIMING

A. Shop prime steel surfaces except the following:

1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches.

2. Surfaces to be field welded.

3. Surfaces to be high-strength bolted with slip-critical connections.

4. Surfaces to receive sprayed fire-resistive materials.

5. Galvanized surfaces.

B. Surface Preparation: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards:

1. SSPC-SP 2, "Hand Tool Cleaning."

C. Priming: Immediately after surface preparation, apply primer according to manufacturer's written instructions and at rate recommended by SSPC to provide a dry film thickness of not less than 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.

PART 3 – EXECUTION

3.1 ERECTION

A. Examination: Verify elevations of concrete-bearing surfaces and locations of anchor rods, bearing plates, and other embedments, with steel erector present, for compliance with requirements.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

B. Set structural steel accurately in locations and to elevations indicated and according to AISC's "Code of Standard Practice for Steel Buildings and Bridges" and "Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design."

C. Base Plates: Clean concrete-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting base plates. Clean bottom surface of base plates.

1. Set base plates for structural members on wedges, shims, or setting nuts as required.

2. Weld plate washers to top of base plate.
3. Pretension anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of base plate before packing with grout.

4. Promptly pack grout solidly between bearing surfaces and base plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow curing. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.

D. Maintain erection tolerances of structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges."

3.2 FIELD CONNECTIONS

A. High-Strength Bolts: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 Bolts" for type of bolt and type of joint specified.

1. Joint Type: Slip critical.

B. Weld Connections: Comply with AWS D1.1 for welding procedure specifications, tolerances, appearance, and quality of welds and for methods used in correcting welding work.

1. Comply with AISC's "Code of Standard Practice for Steel Buildings and Bridges" and "Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design " for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.

3.3 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to inspect field welds and high-strength bolted connections.

B. Bolted Connections: Shop-bolted connections will be inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

C. Welded Connections: Field welds will be visually inspected according to AWS D1.1.

1. In addition to visual inspection, field welds will be tested according to AWS D1.1 and the following inspection procedures, at testing agency's option:

a. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.

b. Ultrasonic Inspection: ASTM E 164.

D. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

END OF SECTION 05120

SECTION 05400

COLD-FORMED METAL FRAMING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including general and supplementary conditions and division 01 specification sections, apply to this section.

1.2 SUMMARY

A. This section includes the following:

1. Exterior load-bearing framing.

2. Roof trusses.

3. Roof purlin framing.

1.3 PERFORMANCE REQUIREMENTS

A. Cold-Formed Steel Framing, General: Design according to AISI's "Standard for Cold-Formed Steel Framing – General Provisions".

1. Headers: Design according to AISI's "Standard for Cold-Formed Steel Framing – Header Design".

2. Design exterior non-load-bearing wall framing to accommodate horizontal deflection without regard for contribution of sheathing materials.

3. Roof Trusses: Design according to AISI's "Standard for Cold-Formed Steel Framing – Truss Design".

1.4 SUBMITTALS

A. Product Data: For each type of cold-formed metal framing product and accessory indicated.

B. Shop Drawings: Show layout, spacings, sizes, thicknesses and types of cold-formed metal framing, fabrication, fastening and anchorage details including mechanical fasteners. Show reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details and attachment to adjoining work.

1. For cold-formed metal framing indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

C. Welding certificates.

D. Product Test Reports: Form a qualified testing agency, unless otherwise stated, indicating that each of the following complies with requirements, based on evaluation of comprehensive tests for current products:

1. Steel sheet.

2. Mechanical fasteners.

3. Miscellaneous structural clips and accessories.

E. Research/Evaluation Reports: For cold-formed metal framing.

1.5 QUALITY ASSURANCE

A. Product Tests: Mill certificates or data from a qualified independent testing agency indicating steel sheet complies with requirements, including base-metal thickness, yield strength, tensile strength, total elongation, chemical requirements, ductility, and metallic-coating thickness.

B. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code – Steel" and AWS D1.3, "Structural Welding Code – Sheet Steel".

C. Fire-Test-Response Characteristics: Where indicated, provide cold-formed metal framing identical to that of assemblies tested for fire resistance per ASTM E 119 by a testing and inspecting agency acceptable to authorities having jurisdiction.

D. AISI Specifications and Standards: Comply with AISI's "North American Specification of the Design of Cold-Formed Steel Structural Members" and its "Standard for Cold-Formed Steel Framing – General Provisions".

1. Comply with AISI's "Standard for Cold-Formed Steel Framing – Truss Design".

2. Comply with AISI's "Standard for Cold-Formed Steel Framing – Header Design".

E. Comply with AISI's "Standard for Cold-Formed Steel Framing – Prescriptive Method for One and Two Family Dwellings".

1.6 DELIVERY, STORAGE AND HANDLING

A. Protect cold-formed metal framing from corrosion, deformation, and other damage during delivery, storage and handling.

B. Store cold-formed metal framing, protect with a waterproof covering, and ventilate to avoid condensation.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Available Manufactures: Subject to compliance with requirements, manufacturers offering cold-formed metal framing that may be incorporated into the work include, but are not limited to the following:

B. Manufacturers: Subject to compliance with requirements, provide cold-formed metal framing by one of the following:

1. Allied Studco.
2. AllSteel Products, Inc.
3. California Expanded Metal Products Company.
4. Clark Steel Framing.
5. Consolidated Fabricators Corp.; Building Products Division.
6. Craco Metals Manufacturing, LLC.
7. Custom Stud, Inc.
8. Dale/Incor.
9. Design Shapes in Steel.
10. Dietrich Metal Framing; a Worthington Industries Company.
11. The Formetal Company, Inc.
12. Innovative Steel Systems.
13. MarinoWare; a division of Ware Industries.
14. Quail Run Building Materials, Inc.
15. SCAFCO Corporation.
16. Southeastern Stud & Components, Inc.
17. Steel Construction Systems.
18. Steeler, Inc.

19. Super Stud Building Products, Inc.

20. United Metal Products, Inc.

21. Approved Equal.

2.2 MATERIALS

A. Steel Sheet: ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of grade and coating weight as follows:

1. Grade: ST33H (ST230H) As required by structural performance.

2. Coating: G60 (Z180), A60 (ZF180) or equivalent.

B. Steel Sheet for Vertical Deflection & Drift Clips: ASTM A 653/A 653M, structural steel, zinc coated, of grade and coating as follows:

1. Grade: As required by structural performance.

2. Coating: G90 (Z275).

2.3 ROOF PURLINS

A. Roof Purlin Members: Manufacturer's standard C-shaped steel sections of web depths indicated, unpunched with stiffened flanges.

1. Minimum Base-Metal Thickness: 16 Gauge.

2. Flange Width: 2 inches (51 mm) minimum.

2.4 FRAMING ACCESSORIES

A. Fabricate steel-framing accessories from steel sheet, ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of same grade and coating weight used for framing members.

B. Provide accessories of manufacturer's standard thickness and configuration, unless otherwise indicated as follows:

1. Web stiffeners.

2. Anchor clips.

3. End clips.

4. Joist hangers and end closures.

5. Hole reinforcing plates.

6. Backer plates.

2.5 ANCHORS, CLIPS AND FASTENERS

A. Steel Shapes and Clips: ASTM A 36/A 36M, zinc coated by hot-dip process according to ASTM A 123/A 123M.

B. Mechanical Fasteners: ASTM C 1513, corrosion-resistant-coated, self-drilling, self-tapping steel drill screws.

1. Head Type: Low-profile head beneath sheathing, manufacturer's standard elsewhere.

C. Welding Electrodes: Comply with AWS standards.

2.6 MISCELLANEOUS MATERIALS

A. Shims: Load bearing, high-density multimonomer plastic, nonleaching.

B. Sealer Gaskets: Closed-cell neoprene foam, ¼ inch (6.4 mm) thick, selected from manufacturer's standard widths to match width of bottom track or rim track members.

2.7 FABRICATION

A. Fabricate cold-formed metal framing and accessories plumb, square, and true to line, and with connections securely fastened, according to referenced AISI's specifications and standards, manufacturer's written instructions, and requirements in this section.

1. Fabricate framing assemblies using jigs or templates.

2. Cut framing members by sawing or shearing; do not torch cut.
3. Fasten cold-formed metal framing members by welding, screw fastening, clinch fastening, or riveting as standard with fabricator. Wire tying of framing members is not permitted.

a. Comply with AWS D1.3 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.

b. Locate mechanical fasteners and install according to shop drawings, with screw penetrating jointed members by not less than three (3) exposed screw threads.

4. Fasten other materials to cold-formed metal framing by welding, bolting, or screw fastening, according to shop drawings.

B. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift fabricated assemblies to prevent damage or permanent distortion.

C. Fabrication Tolerances: Fabricate assemblies level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in ten feet (1:960) and as follows:

1. Spacing: Space individual framing members no more than plus or minus 1/8 inch (3 mm) from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

2. Squareness: Fabricate each cold-formed metal framing assembly to a maximum out-of-square tolerance of 1/8 inch (3 mm).

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine supporting substrates and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Cold-formed metal framing may be shop or field fabricated for installation, or it may be field assembled.

B. Install cold-formed metal framing according to AISI's "Standard for Cold-Formed Steel Framing – General Provisions" and to manufacturer's written instructions unless more stringent requirements are indicated.

C. Install shop- or field-fabricated, cold-formed framing and securely anchor to supporting structure.

1. Screw, bolt, or weld wall panels at horizontal and vertical junctures to produce flush, even, true-to-lines joints with maximum variation in plan and true position between fabricated panels not exceeding 1/16 inch (1.6 mm).

D. Install cold-formed metal framing and accessories plumb, square, and true to line, and with connections securely fastened.

1. Cut framing members by sawing or shearing; do not torch cut.

2. Fasten cold-formed metal framing members by welding, screw fastening, clinch fastening, or riveting. Wire tying of framing member is not permitted.

a. Comply with AWS D1.3 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.

b. Locate mechanical fasteners and install according to shop drawings, and complying with requirements for spacing, edge distances, and screw penetration.

E. Install framing members in one-piece lengths unless splice connections are indicated for track or tension members.

F. Install temporary bracing and supports to secure framing and support loads comparable in intensity to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.

G. Do not bridge building expansion and control joints with cold-formed metal framing. Independently frame both sides of joints.

H. Fasten hole reinforcing plate over web penetrations that exceed size of manufacturer's standard punched openings.

I. Erection Tolerances: Install cold-formed metal framing level, plumb, and true to line to a maximum allowable tolerance of 1/8 inch in 10 feet (1:960).

3.3 PURLIN INSTALLATION

A. Install perimeter joist track sized to match purlins. Align and securely anchor or fasten track to supporting structure at corners, ends, and spacings indicated on shop drawings.

B. Install purlins bearing on supporting frame, level, straight, and plumb; adjust to final position, brace, and reinforce. Fasten purlins to both flanges of joist track.

1. Install purlins over supporting frame with a minimum end bearing of 1½ inches (38 mm).

2. Reinforce ends and bearing points of joists with web stiffeners, end clips, joist hangers, steel clip angles, or steel-stud sections as indicated on shop drawings.

C. Space purlins as indicated on drawings.

D. Install bridging at intervals indicated on shop drawings. Fasten bridging at each joist intersection as follows:

1. Bridging: Joist-track solid blocking of width and thickness indicated, secured to purlin webs.

E. Install miscellaneous purlin framing and connections, including web stiffeners, closure pieces, clip angles, continuous angles, hold-down angles, anchors, and fasteners to provide a complete and stable framing assembly.

3.4 REPAIRS AND PROTECTION

A. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and installer, that ensure that cold-formed metal framing is without damage or deterioration at time of substantial completion.

END OF SECTION 05400

SECTION 05521

PIPE AND TUBE RAILINGS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including general and supplementary conditions and division 01 specification sections, apply to this section.

1.2 SUMMARY

A. This section includes the following:

1. Steel tube railings.

1.3 PERFORMANCE REQUIREMENTS

A. General: In engineering railings to withstand structural loads indicated, determine allowable design working stresses of railing materials based on the following:

1. Steel: Seventy-two percent (72%) of minimum yield strength.

B. Structural Performance: Provide railings capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Top Rails of Guards:

a. Uniform load of [50 lbf/ ft. (0.73 kN/m) applied in any direction] [50 lbf/ ft. (0.73 kN/m) applied horizontally and concurrently with 100 lbf/ ft. (1.46 kN/m) applied vertically downward].

b. Concentrated load of 200 lbf (0.89 kN) applied in any direction.

c. Uniform and concentrated loads need not be assumed to act concurrently.

C. Thermal Movements: Provide exterior railings that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

D. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

1.4 SUBMITTALS

A. Shop Drawings: Include plans, elevations, sections, details and attachments to other work.

1. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain each type of railing through one (1) source from a single manufacturer.

B. Welding: Qualify procedures and personnel according to the following:

1. AWS D1.1, "Structural Welding Code – Steel".

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of walls and other construction contiguous with railings by field measurements before fabrication and indicate measurements on shop drawings.

1. Established Dimensions: Where field measurements cannot be made without delaying the work, establish dimensions and proceed with fabricating railings without field measurements. Coordinate wall and other contiguous construction to ensure that actual dimensions correspond to established dimensions.

2. Provide allowance for trimming and fitting at site.

1.7 COORDINATION AND SCHEDULING

A. Coordinate installation of anchorages for railings. Furnish setting drawings, templates and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts and items with integral anchors that are to be embedded in concrete or masonry. Deliver such items to project site in time for installation.

B. Schedule installation so wall attachments are made only to completed walls. Do not support railings temporarily by any means that do not satisfy structural performance requirements.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Available Manufactures: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements.

2.2 METALS, GENERAL

A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations or blemishes.

B. Brackets, Flanges and Anchors: Formed metal of same type of material and finish as support rails, unless otherwise indicated.

2.3 STEEL

A. Tubing: ASTM A 500 cold formed.

B. Plates, Shapes and Bars: ASTM A 36/A 36M.

C. Woven-Wire Mesh: Intermediate-crimp, square pattern, two-inch (2") [50-mm] woven-wire mesh, made from 0.135-inch (0.135") [3.5-mm] nominal diameter wire complying with ASTM A 510 (ASTM A 510M).

2.4 FASTENERS

A. General: Provide the following:

1. Steel Railings: Plated steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating.

B. Fasteners for Anchoring Railings to Other Construction: Select fasteners of type, grade and class required to produce connections suitable for anchoring railings to other types of construction indicated and capable of withstanding design loads.

2.5 MISCELLANEOUS MATERIALS

A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

1. For aluminum railings, provide type and alloy as recommended by producer of metal to be welded and as required for color match, strength and compatibility in fabricated items.

B. Shop Primer for Galvanized Steel: Zinc-dust, zinc-oxide primer formulated for priming zinc-coated steel and for compatibility with finish paint systems indicated and complying with SSPC-Paint 5.

C. Galvanizing Repair Paint: High-zinc-dust-content paint for re-galvanizing welds in steel complying with SSPC-Paint 20.

2.6 FABRICATION

A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish and anchorage, but not less than that required to support structural loads.

B. Assemble railings in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.

C. Cut, drill and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm), unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

D. Form work true to line and level with accurate angles and surfaces.

E. Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

F. Cut, reinforce, drill and tap as indicated to receive finish hardware, screws and similar items.

G. Close exposed ends of railing members.

H. Brackets, Flanges, Fittings and Anchors: Provide wall brackets, flanges, miscellaneous fittings and anchors to interconnect railing members to other work, unless otherwise indicated.

I. For railing posts set in concrete, provide steel sleeves not less than 6 inches (150 mm) long with inside dimensions not less than ½ inch (13 mm) greater than outside dimensions of post, with steel plate forming bottom closure.

2.7 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half (½) of the range of approved samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved samples and are assembled or installed to minimize contrast.

D. Provide exposed fasteners with finish matching appearance, including color and texture of railings.

2.8 STEEL

A. Galvanized Railings:

1. Hot-dip galvanize indicated steel railings, including hardware, after fabrication.

B. Fill vent and drain holes that will be exposed in the finished work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.

C. For galvanized railings, provide hot-dip galvanized fittings, brackets, fasteners, sleeves and other ferrous components.

PART 3 – EXECUTION

3.1 INSTALLATION, GENERAL

A. Fit exposed connections together to form tight, hairline joints.

B. Perform cutting, drilling and fitting required for installing railings. Set railings accurately in location, alignment and elevation; measured from established lines and levels and free of rack.

1. Do not weld, cut or abrade surfaces of railing components that have been coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.

2. Set posts plumb within a tolerance of 1/16 inch in 3 feet (2 mm in 1 m).

3. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed ¼ inch in 12 feet (5 mm in 3 m).

C. Adjust railings before anchoring to ensure matching alignment at abutting joints.

D. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing railings and for properly transferring loads to in-place construction.

3.2 RAILING CONNECTIONS

A. Non-welded Connections: Use mechanical or adhesive joints for permanently connecting railing components. Use wood blocks and padding to prevent damage to railing members and fittings. Seal recessed holes of exposed locking screws using plastic cement filler colored to match finish of railings.

3.3 ADJUSTING AND CLEANING

A. Galvanized Surfaces: Clean field welds, bolted connections and abraded areas and repair galvanizing to comply with ASTM A 780.

3.4 PROTECTION

A. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of substantial completion.

B. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION 05521

SECTION 06100

ROUGH CARPENTRY

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including general and supplementary conditions and division 01 specification sections, apply to this section.

1.2 SUMMARY

A. This Section includes the following:

1. Framing with dimension lumber.

2. Framing with timber.

3. Wood decking.

1.3 DEFINITIONS

A. Exposed Framing: Framing not concealed by other construction.

B. Dimension Lumber: Lumber of two inches (2") nominal or greater but less than five inches (5") nominal in least dimension.

C. Timber: Lumber of five inches (5") nominal or greater in least dimension.

D. Lumber grading agencies, and the abbreviations used to reference them, include the following:

1. NeLMA: Northeastern Lumber Manufacturers' Association.

2. NLGA: National Lumber Grades Authority.

3. RIS: Redwood Inspection Service.

4. SPIB: The Southern Pine Inspection Bureau.

5. WCLIB: West Coast Lumber Inspection Bureau.

6. WWPA: Western Wood Products Association.

1.4 SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.

2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to project site.

3. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

B. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.

C. Research/Evaluation Reports: For the following, showing compliance with building code in effect for Project:

1. Wood-preservative-treated wood.

1.5 QUALITY ASSURANCE

A. Source Limitations for Engineered Wood Products: Obtain each type of engineered wood product through one source from a single manufacturer.

B. Forest Certification: For the following wood products, provide materials produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship":

1. Dimension lumber framing.

1.6 DELIVERY, STORAGE AND HANDLING

A. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PART 2 – PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review.

Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.

2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.

3. Provide dressed lumber, S4S, unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

A. Preservative Treatment by Pressure Process: AWPA C2.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.

2. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.

B. Kiln-dry lumber after treatment to a maximum moisture content of nineteen percent (19%). Do not use material that is warped or does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

1. For exposed lumber indicated to receive a stained or natural finish, omit marking and provide certificates of treatment compliance issued by inspection agency.

2.3 MISCELLANEOUS MATERIALS

A. Water-Repellent Preservative: NWWDA-tested and accepted formulation containing 3-iodo-2-propynyl butyl carbamate, combined with an insecticide containing chloropyrifos as its active ingredient.

PART 3 – EXECUTION

3.1 INSTALLATION, GENERAL

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as

needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction," unless otherwise indicated.

C. Metal Framing Anchors: Install metal framing to comply with manufacturer's written instructions.

D. Do not splice structural members between supports, unless otherwise indicated.

E. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

F. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

1. Use copper naphthenate for items not continuously protected from liquid water.

G. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. NES NER-272 for power-driven fasteners.

2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.

3. Table 23-II-B-1, "Nailing Schedule," and Table 23-II-B-2, "Wood Structural Panel Roof Sheathing Nailing Schedule," in ICBO's Uniform Building Code.

4. Table 2305.2, "Fastening Schedule," in BOCA's BOCA National Building Code.

5. Table 2306.1, "Fastening Schedule," in SBCCI's Standard Building Code.

6. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.

7. Table 602.3(1), "Fastener Schedule for Structural Members," and Table 602.3(2), "Alternate Attachments," in ICC's International One- and Two-Family Dwelling Code.

H. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or

will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated.

I. For exposed work, arrange fasteners in straight rows parallel with edges of members, with fasteners evenly spaced, and with adjacent rows staggered.

END OF SECTION 06100

SECTION 06200

TREATED WOOD PILES

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 within the text by the basic designation only.

AMERICAN WOOD-PRESERVERS' ASSOCIATION (AWPA)

AWPA	A1	(1998) Standard Methods for Analysis of Creosote and Oil-Type Preservatives
AWPA	A4	(2003) Standard Methods for Sampling Wood Preservatives
AWPA	A5	(2005) Standard Methods for Analysis of Oil-Borne Preservatives
AWPA	A6	(2001) Method for the Determination of Oil-Type Preservatives and Water in Wood
AWPA	A8	(1990) Qualitative Recovery of Creosote or Creosote Solution from Freshly Treated Piles, Poles, or Timber (Squeeze Method)
AWPA	A9	(2001) Standard Method for Analysis of Treated Wood and Treating Solutions by X-Ray Spectroscopy
AWPA	C1	(2003) All Timber Products – Preservative Treatment by Pressure Processes
AWPA	C3	(2003) Piles – Preservative Treatment by Pressure Processes
AWPA	M2	(2001) Standard for Inspection of Treated Wood Products
AWPA	M4	(2002) Standard for the Care of Preservative-Treated Wood Products
AWPA	M6	(1996) Brands Used on Forest Products

ASTM INTERNATIONAL (ASTM)

ASTM	D 1143	(2007) Piles Under Static Axial Compressive Load

ASTM	D 25	(1999; R 2005) Round Timber Piles
ASTM	D 390	(1992; R 1999) Coal-Tar Creosote for the Preservative Treatment of Piles, Poles and Timbers for Marine, Land and Fresh Water Use
ASTM	D 450	(2007) Coal-Tar Pitch Used in Roofing, Damp-Proofing, and Waterproofing

WESTERN WOOD PRESERVERS INSTITUTE (WWPI)

WWPI Mgt Practices	(1996) Best Management Practices for the Use of Treated Wood in Aquatic Environments

1.2 SUBMITTALS

A. SD-03 Product Data

1. Piles

2. Pile driving equipment

a. Submit complete descriptions of pile driving equipment, including hammers, leads, driving helmets, cushion blocks, driving blocks, collars, extractors, and other appurtenances for approval prior to commencement of work.

b. A certified test assay analysis from an approved testing organization attesting that the piles to be used in the work have been given the preservative treatment required by these specifications shall be submitted prior to commencement of the work.

B. SD-07 Certificates

1. MSDS and CIS

C. SD-11 Closeout Submittals

1. Job Piles Driving Records: Submit pile driving records within fifteen (15) calendar days after completion of driving.

1.3 QUALITY ASSURANCE

A. Preservative Treated Piles – Timber: The contractor shall be responsible for the quality of treated wood products. The contractor shall provide the engineer with the inspection report of an independent inspection agency that offered products comply with applicable AWPA standards. Identify treatment on each piece by the

quality mark of an agency accredited by the Board of Review of the American Lumber Standard Committee. Inspect all preservative-treated wood visually to ensure there are no excessive residual materials or preservative deposits. Materials shall be clean and dry or it will be rejected because of environmental concerns.

B. MSDS and CIS: Provide Materials and Safety Data Sheets (MSDS) and Consumer Information Sheets (CIS) associated with timber pile preservative treatment. Contractor shall comply with all safety precautions indicated on MSDS and CIS.

1.4 DELVERY AND STORAGE

A. Handle and store piles in accordance with AWPA M4. Comply with paragraph entitled "MSDS and CIS". Special care shall be taken in supporting piles to prevent the including of excessive bending stresses in the piles. Piles shall be carefully handled without dropping, breaking of outer fibers, and penetrating the surface with tools. Peaveys, cant hooks, pikes, and other pointed tools shall not be used in handling treated piles.

1.5 BASIS OF BIDS FOR BEARING PILES

A. The base bid shall be based on the number, diameter and length of piles from tip to cutoff as indicated on the drawings. Should the total number of piles or number of each length vary from that specified as the basis for bidding, the contract price will be adjusted in accordance with the contract clause entitled "Changes". Adjustment in contract price will not be made for cutting off piles, for any portion of a pile remaining above the cutoff elevation, or for broken, damaged or rejected piles.

B. Additive Alternate No. 1 shall include the pilings for west approach as a Lump Sum Price. The price shall be based on the number, diameter, and length of piles from tip to cutoff as indicated on the drawings.

C. Payment will be at the contract lump sum for furnishing labor, materials, tools, equipment and incidentals required for furnishings and driving piles. Work includes furnishing and driving piles including re-driving and removal and placement of damaged, misplaced or otherwise rejected piles.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Piles: Provide Douglas Fir or Southern Pine clean-peeled treated piles conforming to ASTM D 25 and other requirements as specified. Piles shall be in one (1) piece of the length(s) as shown. Splices will not be permitted. Each treated pile shall be branded by the producer, in accordance with AWPA M6. Pile circumferences shall be as follows:

1. Bearing Piles: Minimum butt circumference measured at three feet (3') from the butt end (tip circumference) shall be twelve inches (12").

B. Timber Braces, Stringers and Planks: Provide three inch by eight inch (3" x 8") timber in Douglas Fir or Southern Pine creosote treated conforming to ASTM D 25 and other requirements as specified. Timbers and planks shall be in one (1) piece with no splices permitted.

C. Preservation Treatment: Treat piles by the full-cell pressure process in accordance with AWPA C1 and AWPA C3 to the retention and penetration for marine piling and produce in accordance with WWPI Mgt Practices, as follows:

1. Bearing Piles: Dual treatment of creosote or creosote solution plus waterborne preservative for marine piles.

D. Creosote: Creosote for brush treatment of piles shall conform to ASTM D 390.

E. Coal-Tar Pitch: Coal-tar pitch for brush treatment of piles shall conform to ASTM D 450, Type A.

2.2 TESTS, INSPECTIONS AND VERIFICATIONS

A. Inspection of Piles: Piles to be preservative treated will be inspected prior to treatment. Piles will be inspected at the work site. Piles damaged after inspection may be subsequently rejected if damage is deemed sufficient for rejection. All rejected piles shall be removed as directed.

B. Testing: Creosote and creosote solutions, waterborne preservatives, and oil-borne preservatives shall be tested for conformance to AWPA A1, AWPA A9 and AWPA A5, respectively. The net retention and the penetration of preservatives in piles shall be determined as specified in AWPA M2 and the additional requirements listed. The determination of the net retention of waterborne preservatives in piles which have received the dual treatment of waterborne preservatives and creosote or creosote solutions shall be made after the extraction of the creosote or creosote solutions.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Pile driving equipment shall meet the following requirements.

1. Pile Driving Hammers: Pile driving hammers shall be steam, air or diesel drip, single-action, double-acting, differential-acting or vibratory type. The use of vibratory hammers is dependent upon satisfactory driving and load testing of piles. The size or capacity of hammers shall be as recommended by the manufacturer for the pile weights and solid formation to be penetrated. The pile hammer shall be of sufficient weight

and energy to be conditions. recommended by the Sufficient pressure to install the specified pile without damage into the soils expected encountered. The maximum driving energy of hammers shall be appropriate for the piles indicated for this project and site Diesel powered hammers shall be operated at the rate manufacturer throughout the entire driving period. shall be maintained at the hammer so that:

a. For double-acting hammers, the number of blows per minute during and at the completion of driving of a pile is equal approximately to that at which the hammer is rated;

b. For single-acting hammers, there is a full upward stroke of the ram; and,

c. For differential-type hammers, there is a slight rise of the hammer base during each upward stroke.

B. Leads are required and shall be fixed at the top and adjustable at the bottom. Swinging leads may be allowed if site conditions merit their use and are approved.

C. Bearing Piles: Inspect piles when delivered and when in the leads immediately before driving. Cut piles at cutoff grade with pneumatic tools by sawing or other approved method.

D. Driving Piles: No piling shall be driven within one hundred feet (100') of concrete which is less than seven (7) days old unless otherwise authorized. A complete and accurate record of the driving of piles shall be compiled by the contractor for submission to the engineer. When driving long piles of high slenderness ratio, special precautions shall be taken to ensure against overstressing and leading away from a plumb or true position. During driving, pile driving hammers shall be operated at all times at the rate and conditions recommended by the hammer manufacturer. Each pile shall be driven continuously and without interruption to the indicated tip elevation. After driving is completed, all piles shall be "headed" or cut off normal at the cutoff elevation. Headed treated piles, shall be given two (2) heavy coats of hot creosote, and followed by the application of a heavy coat of coal-tar pitch.

E. Tolerances in Driving Bearing Piles

1. Piles shall be accurately placed in the correct location and alignments both laterally and longitudinally and to the vertical lines as shown. At cutoff elevation, butts shall be within four inches (4") laterally of the location indicated. Manipulation to move piles into position will be permitted only within the aforementioned tolerance to return the pile to the design location. A variation of not more than 21 mm per 0.25 inch per foot of pile length from the vertical for plumb piles or more than 42 mm per 0.50 inch per foot

of pile length from the required angle for batter piles will be permitted. The correct relative position of group piles shall be maintained by the use of templates or by other approved means. In addition to complying with the tolerances stated herein or otherwise specified, clear distance between heads of piles and edges of caps shall be not less than five inches (5"). With prior approval of the engineer, the contractor may provide additional concrete and reinforcement to maintain the required minimum clear distance. Redesign of pile caps or additional work required due to improper location of piles will be the responsibility of the contractor. Inspect piles for heave.

2. Piles shall be driven to the depths shown. Re-drive heaved piles to the required tip elevation. Remove and replace with new piles those damaged, misplaced, driven below the design cutoff, or driving out of alignment.

F. Records: Keep a complete and accurate driving record of each pile driven. Indicate pile location, deviations from design location, diameter, original length, mud line elevation, tip elevation, cutoff elevation, penetration in blows per foot for entire length of penetration for test piles, penetration in blows per foot for the last ten feet (10') for job piles, hammer data including rate of operation, make, and size, and unusual pile behavior or circumstances experienced during driving such as re-driving, heaving weaving, obstructions, and unanticipated interruptions. Preprinted forms for recording pile driving data are attached at the end of this section. Make pile driving records available to the engineer at the job site, a minimum of twenty-four (24) hours after each day of pile driving. Include in the construction records the wood species, preservation type, retention, and producer of installed treated timber.

G. Lengths of Job Piles: The estimated quantities of piles for the base bid are as shown in the drawings. In addition, the estimated quantities of piles as to be furnished by the contractor are given for bidding purposes only. To provide for "heading" or cutting off normal after driving, piles shall be furnished in lengths of at least one foot (1') greater than the lengths specified to be below the cutoff elevations.

H. Fastening: Use washers of the size and type specified under bolt heads and nuts which would otherwise come in contact with wood.

I. Protection of Piles: Square the heads and tips of piles to the driving axis. Laterally support piles during driving, but do not unduly restrain piles from rotation in the leads. Handle, protect, and field treat piles in accordance with AWPA M4.

J. Damaged Piles: Driving of piles shall not subject them to damage. Piles which are damaged, split, broomed, or broken by reason of internal defects or by improper driving below cutoff elevation so as to impair them for the purpose

intended shall be removed and replaced; a second pile may be driven adjacent thereto at the contractor's expense. Minor damaged areas of treated piles shall be brush-coated with creosote or the same preservative used to treat the piles.

K. On Site Application of Wood Preservatives: All on site application of wood preservatives must be performed by a person certified through an EPA approved training program for the application of wood treatment products in accordance with 40 CFR 171, regulated under 7 U.S.C.A. Sections 136 to 136y, Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). On site treatment shall also be in accordance with AWPA M4, Sections 1.5, 2.2, 2.3, and 3.1.

END OF SECTION 06200

SECTION 07611

SHEET METAL ROOFING

PART 1 – GENERAL

1.1 SUMMARY

The contractor shall furnish and install the factory-formed sheet metal roofing, including flashings and trim.

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM A653/A653M standard specification for steel sheets, zinc-coated (galvanized) or zinc-iron alloy-coated (galvanized) by the hot-dip process.

2. ASTM A792/A792M standard specification for steel sheet, 55% aluminum-zinc alloy coated by the hot dip process.

3. ASTM B209 standard specification for aluminum and aluminum-alloy sheet and plate.

4. ASTM D2247 standard practice for testing water resistance of coatings in 100% relative humidity.

5. ASTM E1680 standard test method for determining the rate of air leakage through exterior windows, curtain walls and doors under specified pressure differences across the specimen.

6. ASTM E1646 standard test method for water penetration of exterior windows, curtain walls and doors by uniform air pressure difference.

7. ASTM G90 standard practice for performing accelerated outdoor weathering of non-metallic materials using concentrated natural sunlight.

1.3 SYSTEM DESCRIPTION

A. Performance Requirements: Provide sheet metal roofing which has been manufactured, fabricated and installed to withstand structural and thermal movement, wind loading and weather exposure to meet all local building codes and maintain manufacturer's performance criteria without defects, damage, failure or infiltration of water.

1. Air Infiltration: Maximum 0.06 cfm per linear foot (0.33 m3/hr per linear meter) of seam at static pressure of 6.24 psf (3.0 kPa) when tested per ASTM E1680.

2. Water Penetration:

a. No uncontrolled water penetration through the joints when tested in accordance with AAMA 501.2.

b. No uncontrolled water penetration through the joints at a static pressure of 6.24 psf (3.0 kPa) when tested in accordance with ASTM E1646.

B. Finish Performance Requirements:

1. Color change and fade resistance: No cracking, peeling, blistering or loss of adhesion when tested in accordance with ASTM G90; color change after removal of surface deposits such as dirt or chalk, maximum 5 NBS units.

2. Humidity resistance: No blistering, peeling or loss of adhesion after 1,000 hours testing in accordance with ASTM D2247.

1.4 SUBMITTALS

A. General: Submit listed submittals in accordance with section 01340 "Shop Drawings, Product Data and Samples".

B. Product Data: Submit product data, including manufacturer's SPEC-DATA[a] product sheet, for specified products.

C. Samples: The owner shall select all colors and finishes used. The contractor shall provide samples of finishes, colors and textures to the owner for selection.

1. Selection Samples: For each product requiring color selection, two (2) sets of manufacturer's sample chips representing full range of colors and finishes available.

2. Verification Samples: For each color and finish selected, two (2) chips indicating match to selected color and finish.

D. Closeout Submittals: Submit the following:

1. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with division 1 closeout submittals, maintenance data and operation data section. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance.

2. Warranty: Warranty documents specified herein.

3. Record Documents: Project record documents for installed materials in accordance with division 1 closeout submittals (project record documents) section.

1.5 QUALITY ASSURANCE

A. Sheet Metal Industry Standard: Comply with Sheet Metal and Air Conditioning Contractors National Association (SMACNA) Architectural Sheet Metal Manual.

1.6 DELIVERY, STORAGE AND HANDLING

A. General: Comply with Division 1 Product Requirements Sections.

1. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact. Identify fabricated components with UL 90 label where appropriate.

C. Packing, Shipping, Handling and Unloading:

1. Bundle roofing panels in waterproof wrapping paper.

2. Package trim and accessories in waterproof wrapping paper.

D. Storage and Protection: Store materials protected from exposure to harmful conditions. Store material in a dry, above-ground location.

1. Stack pre-finished material to prevent twisting, bending, abrasion, scratching and denting. Elevate one (1) end of each skid to allow for moisture runoff.

2. Store products of this section in manufacturer's unopened packaging until installation of products.

3. Maintain dry, heated storage area for products of this section until installation of products.

1.7 PROJECT CONDITIONS

A. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements, fabrication schedule with construction progress to avoid construction delays.

1.8 WARRANTY

A. Project Warranty: Refer to conditions of the contract for project warranty provisions.

B. Manufacturer's Warranty: Submit, for owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition do, and not a limitation of, other rights owner may have under the contract documents.

PART 2 – PRODUCTS

2.1 SHEET METAL ROOFING MANUFACTURERS

Sheet metal roofing manufacturers shall be one (1) of the following:

A. McElroy Metal

B. Ceco Building Systems

C. Varco Pruden

D. Approved Equal

2.2 MANUFACTURED UNITS

The following sheet metal roof model description is for McElroy products. Approved equal products from other approved manufacturers will be allowed.

A. McElroy "R" Panel:

1. Profile: Exposed fastener panel with four (4) prominent ribs and minor intermediate ribs.

2. Size: 36" cover width, lengths indicated on drawings.

3. Material: Galvalume steel sheet conforming to ASTM A792, AZ55 coating; 26 gauge sheet thickness.

4. Finish: Polyvinylidene fluoride color coat, minimum fifty percent (50%) polyvinylidene fluoride resin content, applied to sight-exposed face of sheet after pretreatment and priming in accordance with coating manufacturer's recommendations. Color shall be selected by owner.

B. Fasteners: Supply items required for installation of panels in accordance with manufacturer's installation instructions and other indicated items; supply color coordinated fasteners to match the roof color.

2.3 MATERIALS

A. Galvanized Steel Sheet: ASTM A653, G90 steel sheet, zinc coated (galvanized) by hot dip process, structural quality.

2.4 SOURCE QUALITY

Source Quality: Obtain metal panel products from a single manufacturer.

PART 3 – EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

A. Compliance: Comply with manufacturer's product data, recommendations and installation instructions for substrate verification, preparation requirements and installation.

1. Strippable Film: Remove manufacturer's protective film, if any, from surfaces of roofing panels.

3.2 EXAMINATION

A. Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.

1. Verification of Conditions:

a. Panel support systems are ready for construction activities of this section and within specified tolerances.

2. Installer's Examination:

a. Have installer of this section examine conditions under which construction activities of this section are to be performed, then submit written notification if such conditions are unacceptable.

b. Delay construction activities of this section until unacceptable conditions have been corrected.

c. Beginning construction activities of this section indicates installer's acceptance of conditions.

3.3 PREPARATION

A. Coordination: Coordinate metal roofing with other work, drainage, flashing, trim and other adjoining work to provide a non-corrosive and leak-proof installation.

B. Dissimilar Metals: Prevent galvanic action of dissimilar metals.

3.4 INSTALLATION

A. General: Install metal roofing panels to profiles, patterns and drainage indicated and required for leak-proof installation.

B. Roofing Installation:

1. Install roofing plumb, true and in correct alignment with structural framing, in accordance with manufacturer's printed installation instructions.

2. Install roofing using manufacturer's non-corroding fasteners color-matched to panel.

3. Install trim using concealed fasteners where possible; sight-exposed non-corroding fasteners color-matched to trim are permitted on vertical surfaces only.

C. Installation Tolerances:

1. Variation from Plumb: Maximum 1/8" (3.2 mm).

2. Variation from Level: Maximum 1/8" (3.2 mm).

3. Variation from True Plane: Maximum 1/8" (3.2 mm).

4. Variation from True Position: Maximum ¼" (6.4 mm).

5. Variation of Member from Plane: Maximum 1/8" (3.2 mm).

3.6 CLEANING

A. Cleaning: Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to owner's acceptance. Remove construction debris from project site and legally dispose of debris.

1. Remove strippable coating and perform dry wipe-down cleaning of panels as erected.

3.7 PROTECTION

A. Protection: Protect installed product's finish surfaces from damage during construction:

1. Protect installed products from damage by subsequent construction activities.

2. Replace products having damage other than minor finish damage.

3. Repair products having minor damage to finish in accordance with panel manufacturer's recommendations.

4. Architect shall be sole judge of acceptability of repair to damaged finishes; replace products having rejected repairs.

END OF SECTION 07611

SECTION 07620

SHEET METAL FLASHING AND TRIM

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including general and supplementary conditions and division 01 specification sections, apply to this section.

1.2 SUMMARY

A. Section Includes:

1. Formed Products:

a. Formed steep-slope roof sheet metal fabrications.

1.3 PERFORMANCE REQUIREMENTS

A. General: Sheet metal flashing and trim assemblies as indicated shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

B. Fabricate and install roof edge flashing capable of resisting the following forces according to recommendations in FMG loss prevention data sheet 1-49:

1. Wind Zone One (1): For velocity pressures of 21 to 30 lbf/sq. ft.: 60-lbf/sq. ft. perimeter uplift force, 90-lbf/sq. ft. corner uplift force, and 30-lbf/sq. ft. outward force.

C. Thermal Movements: Provide sheet metal flashing and trim that allows for thermal movements from ambient and surface temperature changes.

1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C) material surfaces.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.

B. Shop Drawings: Show fabrication and installation layouts of sheet metal flashing and trim, including plans, elevations, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled work. Include the following:

1. Identification of material, thickness, weight, and finish for each item and location in project.

2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.

C. Samples for Initial Selection: For each type of sheet metal flashing, trim, and accessory indicated with factory-applied color finishes involving color selection.

1.5 QUALITY ASSURANCE

A. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" unless more stringent requirements are specified or shown on Drawings.

1.6 DELIVERY, STORAGE AND HANDLING

A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.

B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to the extent necessary for the period of sheet metal flashing and trim installation.

1.7 WARRANTY

A. Special Warranty on Finishes: Manufacturer's standard form in which manufacturer agrees to repair, finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.

1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:

a. Color fading more than five (5) Hunter units when tested according to ASTM D 2244.

b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.

c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period: Twenty (20) years from date of Substantial Completion.

PART 2 – PRODUCTS

2.1 SHEET METALS

A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying a strippable, temporary protective film before shipping.

1. Exposed Coil-Coated Finishes:

a. Two-Coat Fluoropolymer: AAMA 620. Fluoropolymer finish containing not less than seventy percent (70%) PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

2. Color: As selected by Architect from manufacturer's full range.

3. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil (0.013 mm).

2.2 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and recommended by manufacturer of primary sheet metal unless otherwise indicated.

B. Fasteners: Wood screws, annular threaded nails, and self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal.

1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.

a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating.

b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.

c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.

C. Sealant Tape: Pressure-sensitive, one hundred percent (100%) solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape one-half inch (½") wide and one-eighth inch (1/8") thick.

D. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

2.3 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, geometry, metal thickness, and other characteristics of item indicated. Fabricate items at the shop to greatest extent possible.

1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.

2. Obtain field measurements for accurate fit before shop fabrication.

3. Form sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.

4. Conceal fasteners and expansion provisions where possible.

B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

C. Sealed Joints: Form non-expansion but movable joints in metal to accommodate elastomeric sealant.

D. Fabricate cleats and attachment devices of sizes and recommended by SMACNA's "Architectural Sheet Metal Manual" for application, but not less than thickness of metal being secured.

2.4 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

A. Roof-Edge Flashing: Fabricate in minimum 96-inch-long, but not exceeding 10-foot-long, sections.

1. Joint Style: Lap, four inches (4") wide.

2. Fabricate from the following materials:

a. Aluminum-Zinc Alloy-Coated Steel: 0.028 inch thick.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with installer present, to verify actual locations, dimensions and other conditions affecting performance of the work.

1. Verify compliance with requirements for installation tolerances of substrates.

2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.

B. For the record, prepare written report, endorsed by installer, listing conditions detrimental to performance of the work.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. General: Anchor sheet metal flashing and trim and other components of the work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

1. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.

2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

3. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.

4. Install sealant tape where indicated.

5. Torch cutting of sheet metal flashing and trim is not permitted.

6. Do not use graphite pencils to mark metal surfaces.

B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by SMACNA.

C. Fastener Sizes: Use fasteners of sizes that will penetrate metal purlins not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.

D. Seal joints as shown and as required for watertight construction.

1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between forty (40) and seventy (70) deg F, set joint members for fifty percent (50%) movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below forty (40) deg F.

2. Prepare joints and apply sealants to comply with requirements in division 07 section "Joint Sealants."

E. Rivets: Rivet joints in trim where indicated and where necessary for strength.

3.3 ROOF FLASHING INSTALLATION

A. General: Install sheet metal flashing and trim to comply with performance requirements (sheet metal manufacturer's written installation instructions) and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.

B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in SMACNA's "Architectural Sheet Metal Manual" and as indicated.

3.4 ERECTION TOLERANCES

A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of one-fourth inch (¼") in twenty feet (20') on slope and location lines as indicated and within one-eighth inch (1/8") offset of adjoining faces and of alignment of matching profiles.

B. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

3.5 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean off excess sealants.

C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instruction. On completion of installation, remove unused materials and clean finished surfaces. Maintain in a clean condition during construction.

D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 07620

SECTION 09900

PAINTING AND COATINGS

PART 1 – GENERAL

1.1 SCOPE OF WORK

A. The contractor shall furnish all labor, materials, equipment and incidentals required to provide painting, as specified herein, to include, but not be limited to, preparation of surfaces, shop painting of items furnished, field painting of structures, piping, conduit, ducts and equipment, and marking of piping and electrical conduit.

B. Painting shall be provided where shown on the contract drawings, specified in the detailed specifications, or as required for a complete installation.

C. Work Included:

1. Exterior concrete masonry walls, steel columns and beams. Stained concrete floors shall be included if Additive Alternate No. 2 is accepted.

2. All exposed ferrous or galvanized metal accessories, unless factory color finished. Items furnished with prime coats shall have compatible field coatings.

1.2 REFERENCES

A. Codes and standards referred to in this Section shall be as follows:

1. SSPC – Steel Structures Painting Council Manual

a. SSPC-SP1

b. SSPC-SP6

c. SSPC-SP10

d. SSPC-2

2. Fed. Spec. – Federal Specifications and Standards of the General Services Administration

a. TT-C-542F

b. TT-650D
c. TT-P-1511B

d. TT-P-96D

3. Mil. Specs. – Specifications and Standards of the Department of Defense of the United States Government

   a. MIL-C-22750F

   b. MIL-P-23377G

   c. MIL-C-22750F

   d. MIL-P-26915C

4. ASTM – American Society for Testing Materials

   a. ASTM D3359 – Measuring Adhesion by Tape Test

1.3 SUBMITTALS

A. The contractor shall prepare and submit for approval catalog cuts and reference materials in accordance with the general conditions.

1. Color Chart: The contractor shall submit the manufacturer's standard color chart for color selection.

2. Paint Samples: The contractor shall submit two (2) one-quart samples of each required kind of paint material, or the ingredients thereof which are to be mixed on the job. Samples shall include the certificate of the manufacturer stating the actual percentages by weight and volume of all ingredients entering into the mixture. Upon request, further samples shall be provided as the work progresses. Painting materials shall not be applied without written approval of samples by the engineer.

3. Painted Surface Samples: Upon request, duplicate samples of the results obtained by painting and finishing various materials on the work shall be submitted. Such samples, and the approved paint applied thereto, shall be applied in strict conformance with these specifications. Finished areas shall be considered adequate for the purpose of determining the quality of the work. All painting work shall be performed in a quality equal to the approved samples. Where equipment is customarily shipped with a standard finish, samples of the proposed color and finish shall be submitted for approval prior to shipping.

4. Test Panels: Test panels of coatings and coating systems equal to those specified shall be submitted at the beginning of the work and before final approval of the coating. Test panels shall be exposed to conditions of use similar to those expected in the work. Pertinent records of reports on the behavior of coatings in the test environment shall be submitted with the test panels.

5. Certification: The contractor shall furnish affidavits from the manufacturer certifying that materials furnished conform to the requirements specified and that paint products have been checked for compatibility.

6. Immersion Certification: The contractor shall furnish affidavits from the manufacturer certifying that coatings in immersion service contain no water soluble solvents or corrosion inhibitive (active) pigments with slight water solubility.

7. Supplementary Schedule: The contractor shall submit a supplementary schedule of paint products with mil thickness and solids by volume, including all paint applied in the shop and in the field. The schedule shall be in accordance with the recommendations of the paint manufacturer.

1.4 QUALITY ASSURANCE

A. Paint Quality Assurance Records: The following information shall be recorded for every paint project:

1. Date

2. Shift

3. Part Temperature

4. Dew Point

5. Paint Batch Number(s)

6. Mixing Time for Each Part and the Combined Parts of a Paint System

7. Pot Life

8. Curing Time of Primer and Finish Layers

9. Holiday Test Results and Repair Data

10. Peel Test Results and Repair Data

11. Foreman or Supervisor's Signature

1.5 TEST SURFACES

A. The contractor shall paint certain areas of concrete and other surfaces, where directed, using approved coatings for use by the engineer for comparisons with coating systems applied during the progress of the work.

1. Such coated areas shall not be subsequently painted during the entire period of construction or during the period one (1) year after the date of final acceptance.

2. At or about one (1) year after final acceptance the test surfaces shall be inspected by the owner for any deterioration such as cracks, blisters, flakes and excessive chalking.

3. The contractor shall supply all material and labor and shall perform any remedial work on all such deteriorated surfaces using the coating system represented by the test surface at no additional cost to the owner.

1.6 SAFETY REQUIREMENTS

A. All painting materials specified herein, and ingredients of coatings containing substances that are potentially toxic or hazardous shall be shipped with warning labels. These products shall be applied in strict conformance with the safety requirements of the following:

1. The Manufacturer

2. The National Paint and Coatings Association (NPCA)

3. The Society of the Plastics Industry (SPI)

4. The Manufacturing Chemist Association (MCA)

5. The Steel Structures Painting Council (SSPC)

6. The United States Government Occupational Safety and Health Act (OSHA)

1.7 PAINTING REQUIREMENTS

A. General

The detailed specifications do not specify the surface treatment for every individual part of the work, however this contract shall be provided with a complete painting job throughout the work as specified herein. All items customarily or specified to be shop painted shall be primed and finished in the shop. Field painting will not be allowed unless requested in writing to the engineer, and written consent is given by the engineer. In general, only areas that are to be field welded are not to be painted until field erected.

B. Manufacturer's Standard Finished Items

The following items shall be furnished with the manufacturer's standard prime and finish coats applied in the shop: pumps, motors, gears, gear housings, air compressors, wall fans, temperature control and instrument panels, process air blowers, engines, filters, strainers, air dryers, meters, generators, panel boards, transformers, air conditioning and dehumidification units, convector cabinets, unit heaters, enclosures for finned tube radiators, cabinet heaters, boilers, wood seats, lockers, metal toilet partitions, metal urinal screens, aluminum fascia, motor control centers, aluminum light standards, and hoisting equipment. Steel reinforcing bars for concrete shall be coated in accordance with the detailed specifications.

C. Unpainted Items

The following items shall not be painted, unless otherwise specified: registers, grilles, dampers and linkage, fire sprinklers, name and identification plates and tags, floor gratings, brass pipe and fittings, brass valves, stainless steel, chrome work, door hardware, fixtures, rubber, building insulation, acoustical ceilings, spray-on fireproofing steel to receive spray-on fireproofing, surfaces to receive field welding, and faying surfaces of high strength bolted connections.

1.8 DELIVERY, STORAGE AND HANDLING

A. Delivery and Storage: All paint materials delivered and stored at the site shall be from the approved manufacturer only.

B. Packaging and Labeling: Paints, stains, varnish or ingredients of paints to be used on the job shall be properly prepared, packed, and labeled. All material shall be delivered to the site in original, unbroken containers bearing the manufacturer's printed labels, which shall specify the following:

1. Project and Contract No.
2. Name of Manufacturer
3. Address of Manufacturer
4. Generic Name of Paint or Ingredients
5. Brand and Trade Mark
6. Schedule Letter as Listed Herein
7. Percent Solids by Volume

8. Net Quantity

9. Date of Manufacturer

10. Date Packed

C. Storage: Painting materials shall be stored at the site in manner and place which shall be in accordance with applicable codes and regulations, and in accordance with manufacturer's instructions. The storage space shall be kept clean at all times. Every precaution shall be exercised to eliminate fire hazards.

PART 2 – PRODUCTS

2.1 GENERAL

A. Before starting with any painting, contractor shall furnish a complete list of materials he proposes to use and shall not proceed until approvals are obtained.

B. All colors shall be selected by the owner. The contractor shall supply color samples from the paint manufacturer to the owner prior to starting any painting. The contractor should not assume that the color of floors, walls and ceiling will all be the same color.

C. Finished samples at least four inches (4") by twenty-four inches (24") of each color on masonry shall be submitted to owner for approval at least ten (10) days before starting such work.

2.2 MANUFACTURERS

A. Standards of Quality: Proprietary protective coatings included herein by brand name or trade mark are given solely as standards of quality and for bidding purposes and do not preclude the use of an approved equivalent.

B. Latest Products: Unless specified otherwise, the proprietary protective coatings of the manufacturer's latest products in regular production on the date of receipt of order shall be provided.

C. No substitution will be considered unless the engineer has received a written request for approval at least ten (10) working days prior to the bid date for receipt of bids. Each request shall include the name of the specified material for which a substitute is being requested; name of the proposed substitute material; and a complete description of the proposed substitute including performance & test data, cure times, recoat windows, and generic composition. No request for substitution will be considered that would decrease film thickness, offer a change in the generic type of coating specified or fail to meet the performance of the specified materials. The decision of the engineer regarding approval or disapproval of the proposed substitution shall be final.

D. Equivalents: Equivalent products shall be of a standard, regularly produced product of a manufacturer. Equivalent products shall be submitted on their

applicable published printed literature that states the generic type, instructions for use, solids by volume, application rates, and chemical components of vehicles and solids. Equivalent products shall be accompanied by a list of projects where each of the coatings has been used on new construction and has rendered satisfactory service for at least three (3) years. Should the manufacturer's literature of the product being offered call for higher film thickness, the greater film thickness shall be applied, and the submitted schedule shall so state.

E. Approved Painting Manufacturers:

Tnemec Company, Inc

Dupont

2.3 MATERIALS

A. General: Paint and other materials shall be furnished which are of the type and quality of the manufacturer on which the painting schedule specified herein is based.

1. Compatible shop and field coats shall be provided.

2. All coats of paint for any particular surface shall be from the same manufacturer.

3. Paint shall be of approved color as selected from the manufacturer's standard range of colors.

4. The contractor shall submit proposed modifications to the specified painting systems for the engineer's approval prior to use.

5. Paints containing lead or manganese driers shall not be submitted.

B. Ingredients of paints, and other protective mixtures including, but not limited to, urethanes, epoxies, powder coatings and moisture-cured urethanes shall, unless proprietary coatings are specified, conform to the latest editions of the following:

1. Federal Specifications and Standards of the General Services Administration of the United States Government ("Fed. Spec.")

2. Specifications and Standards of the Department of Defense of the United States Government ("Mil. Specs.")

2.4 SCHEDULE

All materials shall be painted in accordance with the following schedule. The number of coats shall not be less than the number shown on the schedule. Coating numbers are Tnemec. Equal products, as approved, will be acceptable. Colors are to be selected by the Architect.

NOTE: Incorporate Tnemec's Series 44-600 UV Blocker into Series 1074 for added color and gloss retention.

A. Steel- Exterior Exposed

1. Primer: Series 1 Purple Prime, 2.5-3.5 dry mils

2. Intermediate Coat: Series 66 High-Build Epoxoline, 3.0-5.0 dry mils

3. Finish Coat: Series 1074 Endura-Shield II, 3.0-5.0 mils

B. Steel Submerged

Surface Preparation: SSPC-SP10 Near White Metal Blast with minimum three (3) mil anchor profile

1. Primer: Series 435 Perma-Glaze, 12-15 dry mils

2. Topcoat: Series 435 Perma-Glaze, 12-15 dry mils

C. Steel- Interior Exposed

1. Primer: Series 1 Purple Prime, 2.5-3.5 dry mils

2. Finish Coat: Series 66 High-Build Epoxoline, 4.0-6.0 dry mils

D. Metal Doors and Frames, Accessories, Fixtures (Shop Primed) - Exterior Exposed

1. Touch up shop prime coat

2. Intermediate Coat: Series 27 Typoxy, 2.0- 3.0 dry mils

3. Finish Coat: Series 1074 Endura-Shield II, 2.0-3.0 dry mils

E. Metal Doors and Frames, Accessories, Fixtures (Shop Primed) - Interior Exposed

1. Touch up shop prime coat

2. Intermediate Coat: Series 27 Typoxy, 2.0-3.0 dry mils

3. Finish Coat: Series 66 High-Build Epoxoline, 2.0-3.0 dry mils

F. Pipe and Misc. Fabrications, Galvanized Steel and Non Ferrous Metal- Exterior Exposed

1. Primer Coat: Series 66 High-Build Epoxoline, 2.0-3.0 dry mils

2. Finish Coat: Series 1074 Endura-Shield II, 2.0-3.0 dry mils

G. Pipe and Misc. Fabrications, Galvanized Steel and Non Ferrous Metal- Interior Exposed

1. Primer Coat: Series 66 High-Build Epoxoline, 2.0-3.0 dry mils

2. Finish Coat: Series 66 High-Build Epoxoline, 2.0-3.0 dry mils

H. Ductile Iron- Exterior Exposed

1. Primer: Series 66 Hi-Build Epoxoline, 5.0-6.0 dry mils

2. Intermediate Coat: Series 66 High-Build Epoxoline, 5.0-6.0 dry mils

3. Finish Coat: Series 1074 Endura-Shield, 3.0-5.0 dry mils

I. Ductile Iron- Interior Exposed

1. Primer: Series 66 High-Build Epoxoline, 5.0-6.0 dry mils

2. Finish Coat: Series 66 High-Build Epoxoline, 5.0-6.0 dry mils

J. Ductile Iron- Below Ground

1. Coal Tar Epoxy: Series 46H-413 Hi-Build Tneme-Tar, 16.0-20.0 dry mils

K. PVC- Exterior Exposed

1. Primer: Series 66 High-Build Epoxoline, 2.0-3.0 dry mils

2. Finish Coat: Series 1074 Endura-Shield, 2.0-3.0 dry mils

L. PVC- Interior Exposed

1. Primer: Series 66 High-Build Epoxoline, 3.0 dry mils

2. Finish Coat: Series 66 High-Build Epoxoline, 3.0 dry mils

M. Concrete (Precast, Poured-in-Place, & Dense CMU) - Exterior Exposed
Tnemec Series 130 Envirofill 80-115 ft.2/gal for CMU only

1. Primer: Series 156 Enviro-Crete, 6.0-8.0 dry mils

2. Finish Coat: Series 156 Enviro-Crete, 6.0-8.0 dry mils

N. Concrete (Precast, Poured-in-Place, & Dense CMU) - Interior Exposed

1. Primer: Series 113 H.B. Tneme-Tufcoat, 4.0-6.0 dry mils

2. Finish Coat: Series 113 H.B. Tneme-Tufcoat, 4.0-6.0 dry mils

O. Concrete (Poured-in-Place) - Buried

Large voids are to be filled with Tnemec Series 218 Mortarclad.

1. Primer: Series 46-465. Tneme-Col, 8.0-10.0 dry mils

2. Finish Coat: Series 46-465. Tneme-Col, 8.0-10.0 dry mils

P. Concrete (Pre-cast) – Buried

NOTE: Xypex concrete additive may be used in lieu of the scheduled coatings.

1. Primer: Series 46-465. Tneme-Col, 8.0-10.0 dry mils

2. Finish Coat: Series 46-465. Tneme-Col, 8.0-10.0 dry mils

Q. Concrete Floors

1. Primer: Series 280 Tneme-Glaze, 6.0-8.0 dry mils

2. Finish Coat: 280 Tneme-Glaze, 6.0-8.0 dry mils

Uniformly broadcast 30-50 silica mesh to achieve desired level of skid resistance.

R. Concrete and Masonry (Porous CMU and Concrete) – Exterior

1. H & C Shield Plus Ultra Concrete Stain (one even & semi-transparent coat)

2. Finish Coat: H & C Block Shield Basement & Masonry Waterproofer.

S. Concrete and Masonry (Porous CMU and Concrete) - Interior Exposed

1. Primer: 130 Envirofill, 60 ft. 2/gal.

2. Intermediate Coat: Series 113 H.B. Tneme-Tufcoat, 2.0-3.0 dry mils

3. Finish Coat: Series 113 H.B. Tneme-Tufcoat, 2.0-3.0 dry mils

T. Plaster and Gypsum Wallboard

1. Primer: Series 51-792 PVA Sealer, 1.0-2.0 dry mils (for gypboard only)

2. Intermediate Coat: Series 113 H.B. Tneme-Tufcoat, 2.0-3.0 dry mils

3. Finish Coat: Series 113 H.B. Tneme-Tufcoat, 2.0-3.0 dry mils

U. Wood

1. Primer: Series 36 Undercoat, 2.0-3.0 dry mils

2. Finish Coat: Series 23 Enduratone, 2.0-3.0 dry mils

NOTE: Incorporate Tnemec's Series 44-600 UV Blocker into Series 1074 for added color and gloss retention.

V. Concrete Acid-Stain (To be included if Additive Alternate No. 2 is accepted)

1. Kemiko Stone Tone Stain – spray/brush apply

2.5 STENCILING

A. General

All equipment and process piping shall be labeled with stenciling. Nomenclature shall match the nomenclature given on the drawings.

Stenciling shall vary in height from one inch (1") to three inches (3") as needed for easily read identification.

Stenciling color shall be black or white as appropriate for the background color for legibility.

B. Piping

Piping shall be stenciled with lettering to indicate the pipe contents and arrows to indicate the direction of flow.

Stencils shall be located at changes in direction, valves, fitting and at not more than 10'-0" intervals in straight runs.

PART 3 – EXECUTION

3.1 PREPARATION

A. Surface Preparation: Prior to painting, surface preparation shall be in accordance with the following schedule and as recommended by the painting material manufacturer.

SURFACE PREPARATION SCHEDULE	
Class of Work	**Preparation of Surface Prior to Painting**

SURFACE PREPARATION SCHEDULE	
Class of Work	**Preparation of Surface Prior to Painting**
Carbon Steel, Non-submerged or Not Buried and Steel Encased in Concrete, Masonry or Fireproofing	All visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products and other foreign matter shall be removed by compressed air nozzle blasting, centrifugal wheels or other specified method in accordance with SSPC-SP6.
Buried or Submerged Carbon Steel (other than structural, encased or galvanized)	All visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products and other foreign matter shall be removed by compressed air nozzle blasting, centrifugal wheels or other specified method in accordance with Steel Structures Painting Council SSPC-SP10.
Ductile Iron Piping	Remove all oil, dirt, grease and all other soluble surface contaminants. Abrasive blast all surfaces to be coated to remove all annealing oxides, rust, and all other surface contaminants and to achieve a uniformly profiled surface with a minimum of 1.5 mil anchor profile. Do not over blast the surface.
Galvanized Steel and Other Metals	All welds, beads, blisters or protuberances, other than identification markings shall be smooth, and other imperfections shall be removed. All nonferrous metals and galvanized steel, whether shop primed or field primed, shall be solvent cleaned in accordance with Steel Structures Painting Council SSPC-SP1 and uniformly brush-blasted to remove all soluble surface contaminants and to achieve a uniformly roughened surface.
Gypsum Wallboard and Plastered Surfaces	Gypsum wallboard shall be prepared as recommended by the wallboard manufacturer. Allow new plaster to cure a minimum of twenty-eight (28) days. Plaster surfaces shall be dry. Scratches, cracks, holes and other defects shall be filled flush with adjoining surfaces by approved methods, sandpapered smooth, and brushed clean.
Concrete and Masonry Surfaces (Interior and Exterior Exposed Walls)	Concrete and masonry shall be cured for a minimum of twenty-eight (28) days and then the dry concrete and masonry shall be brushed and washed to remove all loose dirt, dust, free lime and other deleterious substances by approved methods. Protruding fins and other adhering matter shall be removed or ground until a smooth, even finish is obtained. Concrete surfaces to be painted shall be acid etched as recommended by the manufacturer of the coating to be applied, to produce a slightly granular surface required for adherence of coating to the concrete, unless otherwise indicated.

SURFACE PREPARATION SCHEDULE	
Class of Work	**Preparation of Surface Prior to Painting**
Concrete and Masonry Surfaces (Buried Walls)	Concrete and masonry shall be cured for a minimum of twenty-eight (28) days. The cured concrete shall be brush blasted to remove all form oils, curing compounds, laitance and all other surface contaminants and to uniformly profile the concrete.
Concrete and Masonry Surfaces (Floors)	Concrete and masonry shall be cured for a minimum of twenty-eight (28) days. Surfaces to be coated shall be brush blasted to remove all curing compounds, laitance, loose concrete and other surface contaminants and to achieve a uniformly profiled surface equivalent to ICRI CSP 3.
PVC	All adhering debris shall be removed and surface shall be roughened using sandpaper.

3.2 INSTALLATION

A. General: All painting and coatings shall be applied in accordance with the manufacturer's recommendations and approved submittals. A representative of the paint manufacturer shall inspect the surfaces to be painted and shall advise on the proper application. The paint manufacturer representative shall periodically be consulted regarding ambient temperature and humidity conditions.

B. Shop Painting: The following items shall be provided with shop coats of primer and finish coats as herein specified before exposure to the weather:

1. Metals:

   a. Structural steel

   b. Miscellaneous steel and wrought iron

   c. Ornamental wrought and light iron

   d. Iron castings

2. Machinery and Equipment:

   Mechanical and electrical equipment

3. Pipe:

   All piping except galvanized iron, stainless steel, aluminum, copper, brass and bronze piping.

C. Field Painting: All painting at the site of the project is hereby designated as field painting for those items that can not be shop painted or are touched up due to minor damage to the painted surface.

1. Repair and Repainting: Field coatings shall not be applied until all damaged or failed surfaces have been repaired or repainted. All damaged areas shall be prepared as originally specified (Minimum SSPC-SP6 or SSPC-SP11) and touched up with the originally specified primer. The failed areas shall be feather-edged prior to touch-up to create a smooth transition. Shop coated surfaces shall be thoroughly cleaned prior to top coating.

2. Unpainted Materials: Do not paint or finish copper, bronze, chromium plate, nickel, stainless steel, aluminum (except ducts and conduit adjacent to finish painted surfaces), metal, lead, lead coated copper and brass, except as otherwise indicated.

3. Items to Receive Coating: All ferrous metals and insulated surfaces shall be provided with a protective coating. Interior surfaces, exposed masonry walls and concrete walls, floors and ceilings shall be provided with protective coatings as indicated on the drawings and specified.

4. Surface Condition: Only surfaces that are dry and free from dust, grease or other undesirable or interfering substances shall receive coatings. Coatings shall be as specified in the Painting Schedule.

5. Application: Finish coats shall be applied after all adjacent work has been completed. Successive coats shall have different shades or tints of color wherever possible. Colors shall be as selected and approved by the Owner. Prime and successive finish coats shall be cleaned, sand papered, or otherwise treated before the next coat is applied, in accordance with the recommendations of the coating manufacturer, and as approved by the Engineer. All coats shall be inspected and approved by the Engineer, before application of any succeeding coats. All coats shall be applied to the dry film thickness (dft) specified. Coatings shall be applied by skilled personnel under adequate illumination. All painted surfaces shall be left in a clean, orderly and acceptable condition.

6. Surface and Atmospheric Conditions: Paints shall not be applied when the surface temperature is less than forty (40) degrees F, when the surface temperature is less than five (5) degrees above the dew point, when the relative humidity exceeds eighty-five percent (85%), or when the surface to be painted is wet or damp, unless more stringent requirements are called for by the paint manufacturer.

D. Field Painting Operations: Surfaces to be given protective coating shall be thoroughly cleaned. Scratches and abrasions on equipment which has been shop coated shall be refinished and all surfaces to be field painted shall be approved by the Engineer before proceeding with painting. Painting shall be performed in a

continuous and orderly operation to facilitate adequate inspection, however material subject to weathering or corrosion shall be given prime coats as quickly as practicable.

1. Method of Application: All paint material shall be applied by brush or roller. Spray painting will be permitted only with the specific approval of the Engineer. Surfaces which are so close together as to prevent the insertion of a standard size roller or brush shall be painted thoroughly with the prescribed number of coats by using special narrow rollers or brushes.

2. Adjacent Areas: Areas under and adjacent to painted surfaces shall be fully protected at all times. Dripped or spattered paint shall be promptly removed and any adjacent surfaces that have been damaged or discolored by overspray shall be repaired, refinished, and repainted.

3. Tinting: Successive coats of paint shall be tinted to make the various coats easily distinguishable. Undercoats of paint shall be tinted to the approximate shade of the final coat of paint. Final coats of paint shall not be applied until all other work has been completed, the dirt and rubbish removed and the surfaces suitably prepared. Paint to be applied shall be at room temperature.

4. Conditions for Application: Each coat of paint shall be given sufficient time to cure per the manufacturer's recommendation before application of the succeeding coat. Each succeeding coat shall be applied within the recoat time specified by the manufacturer; otherwise the painted surface shall be prepared per the manufacturer's recommendation before it is recoated. Exterior painting will not be allowed in dust laden air, during damp or threatening weather, or on moist or wet surfaces, or when the surface temperature is below forty (40) degrees F on a falling thermometer or under fifty (50) degrees for catalyzed epoxy material; it will not be allowed in extreme heat or when metal is hot enough to cause the paint to blister and produce a porous film. Do not apply interior painting until the building is thoroughly dry. If the temperature in the interior of the building, in the opinion of the engineer, is too low painting will be stopped until the building is heated. Proper ventilation and sufficient heat shall be maintained to permit the paint to dry. The building shall be maintained to be free from dust.

5. Remedial Work: Any paint found defective shall be removed. Touch-up and remedial painting shall be provided as directed and as required until completion and acceptance of final work. If damage to the painted surface is excessive, as determined by the Engineer, that item shall be rejected and shipped back, at Contractor's expense, to be properly recoated before it can be accepted.

6. Application: All products are to applied in accordance with manufacturer's instructions

7. Thinning: If the paint material must be diluted for application by spray gun, the coating shall be built up to the same film thickness achieved with undiluted material (i.e., one gallon of paint as originally furnished must not cover a greater surface area when sprayed than when applied unthinned by brush). Where thinning is necessary, only the products of the manufacturer furnishing the paint shall be used for the particular purpose, and thinning shall be done with the manufacturer's knowledge, in accordance with his printed instructions.

8. Thickness and Adhesion Testing: Dry film thickness of each coat shall be as specified herein. Dry film thickness will be checked by the Engineer or a representative with a magnetic gauge for ferrous metal in accordance with SSPC 2 or Tooke gauge destructive test for concrete. Film thickness of shop coats or other previously applied coating shall be checked by the Engineer or a representative and recorded before painting in order to determine thickness of field coats. Dry film thicknesses for concrete surfaces shall be determined by measuring with a wet-film gauge and by material consumption. Paint adhesion shall be tested by the peel method in accordance with ASTM D 3359.

9. Inaccessible Items: Exposed members which will be inaccessible after erection shall be painted and cleaned prior to erection.

10. Coverage: All surfaces to be painted shall be completely covered. When color on undercoats shows through the final coat of paint, surfaces shall be covered by additional coats until paint is of uniform color and appearance and coverage is complete.

11. Safe Atmosphere: The Contractor shall provide sufficient temporary ventilation during painting operations in enclosed areas to remove moisture and solvents, and to keep the atmosphere safe from harmful or dangerous fumes and dust levels for personnel.

E. Workmanship: Only skilled painters shall perform the work and specialists shall be employed where required. Finished surface shall not show brush marks or other irregularities. Top and bottom edges of doors shall be painted as required for the adjacent surfaces. Undercoats on hollow metal shall be thoroughly and uniformly sanded with No. 00 sandpaper, or equal abrasive, to remove all surface defects and provide a smooth, even surface.

F. Mixing: All paints and coatings shall be mixed in accordance with the manufacturer's instructions on the printed label. The Contractor shall provide galvanized iron pans of sufficient size to contain all mixing pails and mix all paints and ingredients therein.

G. Rates of Application: Paints shall be applied so as to give coverage per gallon not greater than that recommended by the manufacturer. Quantities of paint used for successive coats on the various parts of the work shall be recorded in a manner satisfactory to the Engineer.

H. Touch-Up of Shop-Primed and Finished Items: Touch-up of any and all damaged portions and imperfections in shop-primed and finished items shall be accomplished using the same paint as used for the shop prime and finish. Surface shall be prepared prior to touch-up as originally specified (minimum SSPC-SP6 or SSPC-SP11) and feather-edged to remove rust, scale and loose paint.

I. Concealed Surfaces: All wall surfaces which will be concealed by equipment shall be painted before equipment installation.

3.3 CLEANING AND REPAINTING

A. The Contractor shall touch up and restore any finish damaged. Paint or other finishes spilled, splashed or splattered shall be removed from all surfaces using care so as not to mar any surface or item being cleaned.

B. The Contractor shall rectify any failures or breakdowns, loosening of the paint or coatings within a year after acceptance of work, regardless of the paint systems used. This will require removal of the entire coating where failure occurs and repainting with the coating system previously specified. Patching will not be allowed.

END OF SECTION 09900

SECTION 10110

VISUAL DISPLAY SURFACES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including general and supplementary conditions and division 01 specification sections, apply to this section.

1.2 SUMMARY

A. Section Includes:

1. Markerboards

1.3 DEFINITIONS

A. Visual Display Board Assembly: Visual display surface that is factory fabricated into composite panel form, either with or without a perimeter frame; includes chalkboards, markerboards, and tackboards.

B. Visual Display Surface: Surfaces that are used to convey information visually, including surfaces of chalkboards, markerboards, tackboards, and surfacing materials that are not fabricated into composite panel form but are applied directly to walls.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples for Initial Selection: For each type of visual display surface indicated, for units with factory-applied color finishes, and as follows::

1. Actual Sections of Porcelain-enamel face sheet.

C. Product Schedule: For visual display surfaces. See drawings for markerboard.

D. Qualification Data: For qualified Installer.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver factory-built visual display surfaces completely assembled in one piece without joints, where possible. If dimensions exceed maximum manufactured panel size, provide two or more pieces of equal length as acceptable to Architect. When overall dimensions require delivery in separate units, prefit components at the factory, disassemble for delivery, and make final joints at the site.

B. Store visual display surfaces vertically with packing materials between each unit.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install visual display surfaces until spaces are enclosed and weathertight, wet work in spaces is complete and dry, work above ceilings is complete, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

B. Field Measurements: Verify actual dimensions of construction contiguous with visual display surfaces by field measurements before fabrication.

1. Allow for trimming and fitting where taking field measurements before fabrication might delay the Work.

1.7 WARRANTY

A. Special Warranty for Porcelain-Enamel Face Sheets: Manufacturer's standard form in which manufacturer agrees to repair or replace porcelain-enamel face sheets that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Surfaces lose original writing and erasing qualities.

b. Surfaces exhibit crazing, cracking, or flaking.

2. Warranty Period: Fifty (50) years from date of Substantial Completion.

PART 2 – PRODUCTS

2.1 MATERIALS, GENERAL

A. Porcelain-Enamel Face Sheet: ASTM A 424, enameling-grade steel, uncoated thickness indicated; with exposed face and edges coated with primer, 1.7 – 2.5 mil thick ground coat, and color cover coat; and with concealed face coated with primer and 1.7 – 2.5 mil thick ground coat.

2.2 MARKERBOARD ASSEMBLIES

A. Porcelain-Enamel Markerboards: Balanced, high-pressure, factory-laminated markerboard assembly of three-ply construction consisting of backing sheet, core material, and 0.021-inch thick porcelain-enamel face sheet with low-gloss finish.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

   a. AARCO Products, Inc.

   b. ADP Lemco, Inc.

   c. Aywon.

   d. Bangor Cork Company, Inc.

   e. Best-Rite Manufacturing.

   f. Claridge Products and Equipment, Inc.

   g. Egan Visual Inc.

   h. Ghent Manufacturing, Inc.

   i. Marsh Industries, Inc.; Visual Products Group.

   j. Platinum Visual Systems; a division of ABC School Equipment, Inc.

   k. PolyVision Corporation; a Steelcase Company.

   l. Tri-Best Visual Display Products.

2. Manufacturer's Standard Core: Minimum one-fourth inch (¼") thick, with manufacturer's standard moisture-barrier backing.

3. Laminating Adhesive: Manufacturer's standard, moisture-resistant thermoplastic type.

2.3 FABRICATION

A. Porcelain-Enamel Visual Display Assemblies: Laminate porcelain-enamel face sheet and backing sheet to core material under heat and pressure with manufacturer's standard flexible, waterproof adhesive.

2.4 GENERAL FINISH REQUIREMENTS

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.5 VISUAL DISPLAY SURFACE SCHEDULE

A. Visual Display Board: Factory assembled.

1. Markerboard: Porcelain-enamel markerboard assembly.

a. Color: As selected by Architect from full range of industry colors.

2. Corners: Square.

3. Width: As indicated on Drawings.

4. Height: As indicated on Drawings.

5. Mounting: Wall.

6. Mounting Height: As indicated on Drawings.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine walls and partitions for proper preparation and backing for visual display surfaces.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. General: Install visual display surfaces in locations and at mounting heights indicated on drawings. Keep perimeter lines straight, level, and plumb. Provide grounds, clips, backing materials, adhesives, brackets, anchors, trim, and accessories necessary for complete installation.

3.3 CLEANING AND PROTECTION

A. Clean visual display surfaces according to manufacturer's written instructions. Attach one (1) cleaning label to visual display surface in each room.

B. Touch up factory-applied finishes to restore damaged or soiled areas.

C. Cover and protect visual display surfaces after installation and cleaning.

END OF SECTION 10110

SECTION 10441

PLASTIC SIGNS

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Etched and bonded fiberglass signs.

1.2 SUBMITTALS

A. Submit shop drawings under provisions of Section 01340.

B. Submit shop drawings listing sign styles, lettering and locations, and overall dimensions of each engraved sign.

C. Submit samples illustrating full size sample sign, of type, style and color specified including method of attachment.

1.3 DELIVERY, STORAGE AND HANDLING

A. Deliver products to site under provisions of Section 01600.

B. Store and protect products under provisions of Section 01600

C. Package signs, labeled in name groups.

D. Store adhesive tape at ambient room temperatures.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Wilderness Graphics, Inc.

B. Exhibits Etc. – Scott, Louisiana (337) 233-7048

C. Substitutions: Under provisions of Section 01600.

2.2 SIGN TYPES

A. Environmental Signs: Etched and bonded fiberglass signs, approximately three feet (3') by three feet (3').

2.3 SIGN INSTALLATION

A. Environmental: These signs will be mounted in an upright frame as indicated on the drawings.

2.4 ACCESSORIES

A. Mounting Hardware: Stainless steel one-way screws.

B. Mounting Hardware: Manufacturer's standard holes and screws.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify that surfaces are ready to receive work.

B. Beginning of installation means installer accepts existing surfaces.

3.2 TEXT AND GRAPHICS

Text and graphics will be provided to the sign manufacturer by the owner.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install signs after surfaces are finished, in locations as directed.

C. Center sign on surface level.

D. Clean and polish.

END OF SECTION 10441

SECTION 11120

PARKING CONTROL EQUIPMENT

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including general and supplementary conditions and division 01 specification sections, apply to this section.

1.2 SUMMARY

A. Section Includes:

1. Removable Round Post Bollards

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for parking control equipment. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

PART 2 – PRODUCTS

2.1 REMOVABLE ROUND POST BOLLARDS

A. Round Post Internal Key Dead Bolt Lock Bollard with three inches 3" (3.5 OD), .216 Wall thirty-six inches (36") tall with welded flange, galvanized ground sleeve with welded in place stop pins, and hot dipped galvanized ground sleeve plug. Furnished with two (2) keys. Post weight 29#

B. Acceptable Products: Model RP3503F by Traffic Guard Direct (877) 727-7347 or approved equal.

C. Accessories: Storage racks not required.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions for compliance with requirements for installation tolerances, including equipment bases; accurate placement, pattern, and orientation of anchor bolts; critical dimensions; and other conditions affecting performance of the work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install as per the details on the drawings.

3.3 ADJUSTING

A. Adjust to function smoothly and lubricate as recommended by manufacturer.

B. Confirm that locks engage accurately and securely without forcing or binding.

C. After completing installation, inspect exposed finishes and repair damaged finishes.

END OF SECTION 11120

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

CONSTRUCTION PROPOSAL INFORMATION FOR

AVOYELLES PARISH POLICE JURY

FEDERAL AID PROJECT

STATE PROJECT NO. 744-05-0015
RENOVATION OF SARTO IRON BRIDGE, PHASE II
ROUTE LA 451
AVOYELLES PARISH

BID BOND

A Bid Bond is required when the bidder's total bid amount as calculated by the Department in accordance with Subsection 103.01 is greater than $50,000. *(See Section 102 of the Project Specifications)*

_____, as Principal
(Bidder)
and
_____, as Surety,
are bound unto, **AVOYELLES PARISH POLICE JURY**, (hereinafter called the Contracting Agency) in the sum of five percent (5 %) of the bidder's total bid amount as calculated by the Department for payment, of which the Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, as solidary obligors.

Signed and sealed this _____ day of _____, 20_____.

The condition of this obligation is such that, whereas the Principal has submitted a bid to the Contracting Agency on a contract for the construction of **STATE PROJECT NO. 744-05-0015, FEDERAL AID PROJECT NO. 0502(510), RENOVATION OF SARTO IRON BRIDGE, PHASE II, located in AVOYELLES PARISH, ROUTE LA 451,** if the bid is accepted and the Principal, within the specified time, enters into the contract in writing and gives bond with Surety acceptable to the Contracting Agency for payment and performance of said contract, this obligation shall be void; otherwise to remain in effect.

_____	_____
Principal (Bidder or First Partner to Joint Venture)	If a Joint Venture, Second Partner
By _____	By _____
Authorized Officer-Owner-Partner	Authorized Officer-Owner-Partner
_____	_____
Typed or Printed Name	Typed or Printed Name

_____
Surety

By _____ (Seal)
Agent or Attorney-in-Fact

_____
Typed or Printed Name

To receive a copy of the contract and subsequent correspondence / communication from LA DOTD or the contracting agency, with respect to the bid bonds, the following information must be provided:

_____	_____
Bonding Agency or Company Name	Address
_____	_____
Agent or Representative	Phone Number / Fax Number

07/07
Form AC-2A

Louisiana Department of Transportation and Development

Proposal Schedule of Items

Contract ID: 744-05-0015 **Project(s):** 744-05-0015

SECTION: 1 General Items

Proposal Line Number	Item ID	Description Unit Price (In Words, Ink or Typed)	Approximate Quantity	Unit of Measure
0001	NS-ENH-02120	Building Complete and Installed		LUMP SUM
		_____ Dollars		
		_____ Cents		
0002	NS-ENH-03080	Concrete (Decorative Surface Treatment) Interpretive Kiosk Concrete Floor Slab		LUMP SUM
		_____ Dollars		
		_____ Cents		
0003	NS-ENH-18100	Repairs to Approach Replace Timber Bents		LUMP SUM
		_____ Dollars		
		_____ Cents		

Section: 1 **Total:** _____.__

Total Bid: _____.__

CONSTRUCTION PROPOSAL SIGNATURE AND EXECUTION FORM

THIS FORM, THE SCHEDULE OF ITEMS, AND THE PROPOSAL GUARANTY MUST BE COMPLETED AS INDICATED AND SUBMITTED TO THE LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT (DOTD) TO CONSTITUTE A VALID BID

STATE PROJECT NO. **744-05-0015**

FEDERAL AID PROJECT NO. **0502(510)**

NAME OF PROJECT **RENOVATIONS OF SARTO IRON BRIDGE, PHASE II**

I (WE) HEREBY CERTIFY THAT I (WE) HAVE CAREFULLY EXAMINED THE PROPOSAL, PLANS AND SPECIFICATIONS, INCLUDING ANY AND ALL ADDENDA, AND THE SITE OF THE ABOVE PROJECT AND AM (ARE) FULLY COGNIZANT OF ALL PROPOSAL DOCUMENTS, THE MASTER COPY OF WHICH IS ON FILE AT DOTD HEADQUARTERS IN BATON ROUGE, LA., AND ALL WORK, MATERIALS AND LABOR REQUIRED THEREIN, AND AGREE TO PERFORM ALL WORK, AND SUPPLY ALL NECESSARY MATERIALS AND LABOR REQUIRED FOR SUCCESSFUL AND TIMELY COMPLETION OF THE ABOVE PROJECT AND TO ACCEPT THE SUMMATION OF THE PRODUCTS OF THE UNIT PRICES BID ON THE SCHEDULE OF ITEMS ATTACHED HERETO AND MADE A PART HEREOF MULTIPLIED BY THE ACTUAL QUANTITY OF UNIT OF MEASURE PERFORMED FOR EACH ITEM, AS AUDITED BY DOTD, AS FULL AND FINAL PAYMENT FOR ALL WORK, LABOR AND MATERIALS NECESSARY TO COMPLETE THE ABOVE PROJECT, SUBJECT TO INCREASE ONLY FOR PLAN CHANGES (CHANGE ORDERS) APPROVED BY THE DOTD CHIEF ENGINEER OR HIS DESIGNEE. THIS BID IS SUBMITTED IN ACCORDANCE WITH THE GENERAL BIDDING REQUIREMENTS IN THE CONSTRUCTION PROPOSAL AND ALL SPECIAL PROVISIONS, PLANS, SUPPLEMENTAL SPECIFICATIONS, AND THE LOUISIANA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES (2006 EDITION). I (WE) UNDERSTAND THAT THE SUMMATION OF THE PRODUCTS OF THE UNIT PRICES BID ON THE SCHEDULE OF ITEMS MULTIPLIED BY THE ESTIMATED QUANTITY OF UNIT OF MEASURE FOR EACH ITEM, ALONG WITH ANY OTHER FACTORS SPECIFIED TO BE APPLICABLE SUCH AS CONSTRUCTION TIME AND/OR LANE RENTAL, SHALL BE THE BASIS FOR THE COMPARISON OF BIDS. I (WE) UNDERSTAND THAT THE SCHEDULE OF ITEMS MUST CONTAIN UNIT PRICES WRITTEN OUT IN WORDS AND THAT THE SCHEDULE OF ITEMS SUBMITTED AS PART OF THIS BID IS ON THE FORM SUPPLIED BY DOTD IN THE BID PROPOSAL. MY (OUR) PROPOSAL GUARANTY IN THE AMOUNT SPECIFIED FOR THE PROJECT IS ATTACHED HERETO AS EVIDENCE OF MY (OUR) GOOD FAITH TO BE FORFEITED IF THIS BID IS ACCEPTED BY DOTD AND I (WE) FAIL TO COMPLY WITH ANY REQUIREMENT NECESSARY FOR AWARD AND EXECUTION OF THE CONTRACT, AS WELL AS, SIGN AND DELIVER THE CONTRACT AND PAYMENT/PERFORMANCE/RETAINAGE BOND AS REQUIRED IN THE SPECIFICATIONS.

NONCOLLUSION DECLARATION (APPLICABLE TO FEDERAL-AID PROJECTS)

I (WE) DECLARE UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE UNITED STATES AND THE STATE OF LOUISIANA THAT I (WE) HAVE NOT DIRECTLY OR INDIRECTLY, ENTERED INTO ANY AGREEMENT, PARTICIPATED IN ANY COLLUSION, OR OTHERWISE TAKEN ANY ACTION IN RESTRAINT OF FREE COMPETITIVE BIDDING IN CONNECTION WITH THE CONTRACT FOR THIS PROJECT NOR VIOLATED LA. R.S. 48:254.

BIDDER'S DBE GOAL STATEMENT (APPLICABLE TO DBE GOAL PROJECTS)

IF THIS PROJECT IS DESIGNATED BY SPECIAL PROVISION AS A DISADVANTAGED BUSINESS ENTERPRISE (DBE) GOAL PROJECT IN ACCORDANCE WITH THE DBE PROVISIONS OF THIS CONTRACT, THE BIDDER ASSURES DOTD THAT HE/SHE WILL MEET OR EXCEED THE DBE CONTRACT GOAL, OR IF THE BIDDER CANNOT MEET THE REQUIRED DBE GOAL, THE BIDDER ASSURES DOTD THAT HE/SHE HAS MADE AND CAN DOCUMENT GOOD FAITH EFFORTS MADE TOWARDS MEETING THE GOAL REQUIREMENT IN ACCORDANCE WITH THE CONTRACT AND DBE PROGRAM MANUAL INCORPORATED HEREIN BY REFERENCE.

THE APPARENT LOW BIDDER SHALL COMPLETE AND SUBMIT TO THE DOTD COMPLIANCE PROGRAMS OFFICE, FORM CS-6AAA AND ATTACHMENT(S) AND, IF NECESSARY, DOCUMENTATION OF GOOD FAITH EFFORTS MADE BY THE BIDDER TOWARD MEETING THE GOAL, WITHIN TEN BUSINESS DAYS AFTER THE OPENING OF BIDS FOR THIS PROJECT. RESPONSIVENESS OF INFORMATION SUPPLIED IN THIS SECTION OF THIS CONSTRUCTION PROPOSAL SIGNATURE AND EXECUTION FORM IS GOVERNED BY THE DBE REQUIREMENTS INCLUDED WITHIN THE SPECIFICATIONS AND DBE PROGRAM MANUAL.

CERTIFICATION OF EMPLOYMENT OF LOUISIANA RESIDENTS TRANSPORTATION INFRASTRUCTURE MODEL FOR ECONOMIC DEVELOPMENT (TIME) PROJECTS (APPLICABLE TO TIME PROJECTS)

IF THIS PROJECT IS DESIGNATED BY SPECIAL PROVISION AS A TRANSPORTATION INFRASTRUCTURE MODEL FOR ECONOMIC DEVELOPMENT (TIME) PROJECT AS DEFINED IN ACT NO. 16 OF THE 1989 FIRST EXTRAORDINARY SESSION OF THE LEGISLATURE WHICH ENACTED PART V OF CHAPTER 7 OF SUBTITLE II OF TITLE 47 OF THE LOUISIANA REVISED STATUTES OF 1950, COMPRISED OF R.S. 47:820.1 THROUGH 820.6.

THE BIDDER CERTIFIES THAT AT LEAST 80 PERCENT OF THE EMPLOYEES EMPLOYED ON THIS TIME PROJECT WILL BE LOUISIANA RESIDENTS IN ACCORDANCE WITH LOUISIANA R.S. 47:820.3.

NON PARTICIPATION IN PAYMENT ADJUSTMENT (ASPHALT CEMENT AND FUELS) STATEMENT

IF THIS PROJECT IS DESIGNATED BY SPECIAL PROVISION AS BEING SUBJECT TO PAYMENT ADJUSTMENT FOR ASPHALT CEMENT AND/OR FUELS, THE BIDDER HAS THE OPTION OF REQUESTING EXCLUSION FROM SAID PAYMENT ADJUSTMENT PROVISIONS THAT ARE ESTABLISHED BY SPECIAL PROVISION ELSEWHERE HEREIN.

IF THE BIDDER DESIRES TO BE EXCLUDED FROM THESE PAYMENT ADJUSTMENT PROVISIONS,

THE BIDDER IS REQUIRED TO MARK HERE ☐

FAILURE TO MARK THIS BOX PRIOR TO BID OPENING WILL CONSTITUTE FORFEITURE OF THE BIDDER'S OPTION TO REQUEST EXCLUSION.

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08/06

STATE PROJECT NO. **744-05-0015**

BIDDER SIGNATURE REQUIREMENTS (APPLICABLE TO ALL PROJECTS)

THIS BID FOR THE CAPTIONED PROJECT IS SUBMITTED BY:

Name of Principal (Individual, Firm, Corporation, or Joint Venture)

If Joint Venture, Name of First Partner

(Louisiana Contractor's License Number of Bidder or First Partner to Joint Venture)

(Business Street Address)

(Business Mailing Address, if different)

(Area Code and Telephone Number of Business)

(Telephone Number and Name of Contact Person)

(Telecopier Number, if any)

If Joint Venture, Name of Second Partner

(Louisiana Contractor's License Number of Second Partner to Joint Venture)

(Business Street Address)

(Business Mailing Address, if different)

(Area Code and Telephone Number of Business)

(Telephone Number and Name of Contact Person)

(Telecopier Number, if any)

ACTING ON BEHALF OF THE BIDDER, THIS IS TO ATTEST THAT THE UNDERSIGNED DULY AUTHORIZED REPRESENTATIVE OF THE ABOVE CAPTIONED FIRM, CORPORATION OR BUSINESS, BY SUBMISSION OF THIS BID, AGREES AND CERTIFIES THE TRUTH AND ACCURACY OF ALL PROVISIONS OF THIS PROPOSAL, INCLUSIVE OF THE REQUIREMENTS, STATEMENTS, DECLARATIONS AND CERTIFICATIONS ABOVE AND IN THE SCHEDULE OF ITEMS AND PROPOSAL GUARANTY. EXECUTION AND SIGNATURE OF THIS FORM AND SUBMISSION OF THE SCHEDULE OF ITEMS AND PROPOSAL GUARANTY SHALL CONSTITUTE AN IRREVOCABLE AND LEGALLY BINDING OFFER BY THE BIDDER.

(Signature)

(Printed Name)

(Title)

(Date of Signature)

(Signature)

(Printed Name)

(Title)

(Date of Signature)

CONTRACTOR'S TOTAL BASE BID $ _____

IT IS AGREED THAT THIS TOTAL, DETERMINED BY THE BIDDER, IS FOR PURPOSES OF OPENING AND READING BIDS ONLY, AND THAT THE LOW BID FOR THIS PROJECT WILL BE DETERMINED FROM THE EXTENSION AND TOTAL OF THE BID ITEMS BY DOTD

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