

Contract No.:



U S DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

EASTERN FEDERAL LANDS HIGHWAY DIVISION

**PROJECT ROCR 3A5, 204(1)
ROCK CREEK AND
POTOMAC PARKWAY
PMIS # 044964**

SOLICITATION

IFB NO. DTFH71-07-B-00008

**This Contract Cites
Standard Specifications FP-96
English**

**CONTRACTOR:
ADDRESS:**

STATE: WASHINGTON DC

COUNTY:

PARK / REFUGE / NF: ROCK CREEK PARK

ROADWAYS:	STATIONS	FEET
Rock Creek/Potomac Parkway	1+29 to 42+50	4121
PROJECT LENGTH TOTAL:		4121

TYPE OF IMPROVEMENT: Rehabilitation of Rock Creek and Potomac Parkway from Virginia Avenue to P Street Bridge, milling and LMC overlay on L Street Bridge, reconstruction of access road and parking lot at the Thompson's Boat Center. Reconstruction of P Street Ramp, sidewalk, drainage, electrical, and other work.

TABLE OF CONTENTS

	<u>Page</u>
Notice to Bidders	1 through 3
Checklist for Bid Submittal	1 through 2
*SF-1442 Solicitation, Offer, and Award	A-1 through A-2
Continuation of SF 1442	A-3 through A-4
Bid Schedule Instructions	1 through 2
*Bid Schedule	B-1 through B-13
*SF-24 Bid Bond	C-1 through C-2

FEDERAL ACQUISITION REGULATION & TRANSPORTATION ACQUISITION REGULATION SOLICITATION PROVISIONS & CONTRACT CLAUSES

Index to Federal and Transportation Acquisition Regulations	1 through 6
*Representations and Certifications	D-1
Instructions to Bidders	E-1
*Socioeconomic Program Requirements	F-1 through F-4
Minimum Wage Schedule	F-5 through F-11
*General Contract Requirements	G-1 through G-2
Construction Contract Requirements	H-1

SPECIFICATIONS

Special Contract Requirements	J-1 through J-104
Permits Obtained for this Project	166 Pages
Plans	177 Pages
Hydraulics	94 Pages
Soils and Foundation Reports	128 Pages

***BOLD FACED ITEMS ARE TO BE INCLUDED WITH THE BID SUBMITTAL PACKAGE**

NOTICE TO OFFERORS

CONTRACT FORMAT:

Offerors should note that the format of this contract is in accordance with Federal Acquisition Regulations (FAR), promulgated by the General Services Administration (GSA), effective April 1, 1984, including all applicable revisions. Applicable FAR provisions and clauses are incorporated in this contract by reference or full text as indicated in the INDEX before the D-pages in this booklet. FAR provisions and clauses incorporated by reference can be accessed on the Internet on the GSA website at www.arnet.gov/far/. Offerors are encouraged to review the documents thoroughly before bidding.

PROPOSAL BOOKLET AND OFFER SUBMITTAL:

It is the responsibility of the Offeror to verify that this proposal is complete as listed in the Table of Contents. The Offeror is responsible for submitting all required forms and documents with the offer. Offerors should use the Checklist for Bid Submittal included in this booklet to check that their bids are complete.

CONSTRUCTION CONTRACTS:

As stated in FAR Clause 52.236-1, the **Contractor shall perform on the site, and with its own organization, work equivalent to at least 50%**. Additional guidance is given in FAR Subpart 35.005 where the majority of the project work is complex and specialized such as restoration work, bridge painting, and proprietary construction techniques (i.e. proprietary Cintec arch strengthening.) There are exceptions and they will be reviewed on a case-by-case basis.

HAZARDOUS MATERIALS IDENTIFICATION AND MATERIAL SAFETY DATA:

As required by FAR Clause 52.223-3, Hazardous Materials Identification and Safety Data, the apparent low Offeror must submit prior to award a Material Safety Data Sheet (MSDS's) for all hazardous materials that the Offeror identifies in paragraph (b) of this clause in the D-pages of this booklet. Failure to submit MSDS's may render the Offeror ineligible for award of contract. The apparent low Offeror should submit their MSDS's within two weeks after bid opening.

ATTENTION LARGE BUSINESSES - UTILIZATION OF SMALL BUSINESS CONCERNS:

Large business Offerors should note their responsibilities in the awarding of subcontracts in accordance with FAR Clause 52.219-8, Utilization of Small Business Concerns. The offeror, if a large business concern, should note its responsibility to establish and conduct a Subcontracting Plan in accordance with FAR Clause 52.219-9, Alternate I, Small Business Subcontracting Plan. If the apparent Low Offeror is a LARGE BUSINESS it will be required to submit a Subcontracting Plan within 2 weeks of receipt of request from the Contracting Officer. If the apparent low offeror fails to submit a subcontracting plan acceptable to the Contracting Officer within the allowable time, the offeror may be ineligible for award of the contract. PLEASE NOTE: A sample plan is included in this solicitation package for your use.

BONDING:

Small business concerns and disadvantaged business enterprises may obtain assistance in securing necessary bonding for this project by contacting the office of the Small Business Administration located in their State.

FINANCING AND BONDING ASSISTANCE: Minority, Women-owned, and Disadvantaged Business Enterprises (DBE's). The Department of Transportation (DOT) offers working capital financing and bonding assistance for transportation related contracts. DOT's Bonding Assistance Program (BAP) offers bid, performance and payment bonds on contracts up to \$1,000,000. DOT's Short-Term Lending Program (STLP) offers lines of credit to finance accounts receivable. Maximum line of credit is \$750,000 with interest at the prime rate. For further information, call (800) 532-1169. Internet address: <http://osdbuweb.dot.gov>.

NOTICE TO OFFERORS - (CONT'D.)

INTERNET BASED DATA BASES - REQUIRED INPUT:

According to the FAR Subpart 4.1102 contractors **MUST** be registered in Central Contractor Registration (CCR) **prior** to the award of any contract. Access the following web site to register: www.ccr.gov

According to the FAR Subpart 4.1201 contractors **MUST** complete their Online Annual Representations and Certifications Application (ORCA) **prior** to the closing date of the bid on line at <http://orca.bpn.gov/>.

According to the FAR Subpart 22.1302 (b) contractors and sub-contractors **MUST** complete the required Annual Vets-100 Form in order to be eligible for a contract award. It can be completed on-line at <http://vets100.cudenver.edu/>.

PAYMENT:

Offerors are advised to review the Federal Projects (FP) - Manual, subsection 109.05, concerning **direct** and **indirect** payment included under a pay item in the bid schedule.

PROGRESS PAYMENTS:

ALL payments will be made via Electronic Funds Transfer (EFT) as such; the payment information in the CCR must be accurate in order for contractors' invoices to be considered proper invoices for the purpose of prompt payment under DOT contracts. Contractors must input and maintain (update as necessary) their EFT information in the CCR database. Offerors are advised that under FAR Clause 52.232-5, Payments Under Fixed Price Construction Contracts, upon request, progress payments will include premiums paid by the Contractor to obtain performance and payment bonds as required under this contract. These payments shall not be made in addition to the contract price. As specified in FP Manual subsection 151 - "MOBILIZATION", payments for performance and payment bond premiums shall be included in mobilization.

WELFARE-TO-WORK INITIATIVE:

The President's Welfare Reform Bill was initiated to assist welfare recipients and hopefully aid welfare recipients to find gainful employment. In support of this bill, Contractors are encouraged to hire welfare recipients whenever possible and to use welfare recipients in performance of duties on Government contracts.

INCREASING SEAT BELT USE IN THE UNITED STATES:

The President's Executive Order 13043 dated April 16, 1997, was issued to increase the use of seat belts in the United States. In support of this Order, contractors and subcontractors are encouraged to adopt and enforce on-the-job seat belt policies for their employees when operating company-owned, rented, or personally owned vehicles.

OBTAINING BID DOCUMENTS:

Bid documents **will not be** mailed. All bid documents are available for direct download from the Federal Business Opportunities (FBO) website:

http://www.fbo.gov/spg/DOT/FHWA/71/postdatePrevDays_1.html

or the Eastern Federal Lands Highway Division website:

<http://www2.epl.fhwa.dot.gov/Documents.aspx>

Contractors are encouraged to register on the FBO website (for this specific project) in order to receive Email Notifications automatically when a document is added or updated for this specific project. All questions about this construction project must be emailed to the following address:

eflhd.contracts@fhwa.dot.gov.

NOTICE TO OFFERORS

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR MONITORING THE WEB PAGES NOTED ABOVE FOR ALL CHANGES TO THE SOLICITATION AND ACTING ON SAID CHANGES.

PLEASE NOTE: For security reasons, individuals requiring access to all government buildings must present a valid photo ID and be escorted to their destination by a Government employee. All visitors attending bid openings are urged to arrive at least 1 hour prior to scheduled bid opening. All visitors must register with the receptionist in Room 100. A Government employee will collect all bids. Prior to bid opening, a Government employee will escort all bidders to the bid opening. Unescorted visitors will be denied entry and no exceptions will be made.

CHECKLIST FOR BID SUBMISSION

The following is a checklist of items included in the proposal/bid package that are required to be completed and returned (or filled in on-line) to the address in Block 8 of the Standard Form 1442, Solicitation, Offer, and Award (page A-1). This checklist is for informational purposes only and is not required to be filled out by the bidder. **Failure to submit a complete bid may be cause to reject your bid.**

1. Bid Envelope:

- a. Addressed as shown in Block 8 of Page A-1
- b. In lower left corner, indicate Solicitation No., Project Name & Number, time for Receipt of Offers and send to Room 105.

2. Standard Form 1442: Solicitation, Offer and Award (Pages A-1 and A-2)

- a. Block 14: Name and Address of Bidder.
- b. Block 15: Telephone Number of Bidder.
- c. Block 16: Remittance Address if different from Block 14.
- d. Block 19: **All** Amendments Acknowledged, with dates of Amendments.
- e. Block 20: Bid is signed and dated.

3. Bid Schedule - (Pages B-1 through B-13)

- a. Unit bid price and bid amount provided for each pay item in numbers.
- b. Corrections initialed.
- c. Price Evaluation eligibility is indicated on the Bid Summary page.

4. Standard Form 24, Bid Bond (Pages C-1 through C-2) (Required if bid guarantee is bid bond)

- a. Date executed
- b. Legal name and address of bidder.
- c. Type of organization.
- d. State of incorporation (if applicable).
- e. Name and business address of Treasury approved surety.
- f. Penal sum of bond (not less than 20% of bid total).
- g. Bid identification.
- h. Signature of Bidder
- i. Seal, if corporation
- j. Signature of Surety
- k. Seal, if corporation

BIDS RECEIVED WITHOUT A VALID BID BOND WILL BE REJECTED.

5. Power of Attorney.

- a. Dated on or before execution date of bond
- b. Power has original signature of surety, or is embossed with surety's seal in the certification section

BIDS RECEIVED WITHOUT A VALID POWER OF ATTORNEY WILL BE REJECTED.

CHECKLIST FOR BID SUBMITTAL (continuation)

6. Fill In's. The following full text Clauses and/or Provision numbers shall be checked or filled in and return with the bid package:

- a. 52.219-4 – HubZone ONLY - See Section F, Clause 52-219-4, paragraph "C", check block if wavier is applicable.

7. Bidder's Qualifications form (provided separately as part of the Bid Documents Package).
Form completed, signed and submitted with bid

8. Sub-Contracting Plan - Large Businesses Only: Submittal with the bid is not mandatory, **but it is encouraged**, as it will speed up the award process should your firm be the apparent low bid.

THE FOLLOWING THREE ITEMS ARE NOT TO BE SUBMITTED WITH THE BID; BUT FAILURE TO COMPLETE THE REQUIREMENTS WILL BE CAUSE TO REJECT THE BID.

9. Central Contractor Registration (CCR): The Contractor is currently registered in the Internet-Based CCR database at <http://www.ccr.gov>.

10. Online Representations and Certifications Application (ORCA): The Contractor's Representations and Certifications have been input online via the Internet-Based ORCA electronic database at <http://orca.bpn.gov>.

11. Vets100 Reporting: The Contractor has completed the annual Internet-Based reporting requirement online at <http://vets100>.

NOTE: THE CONTRACTOR IS FULLY RESPONSIBLE TO VERIFY THAT ALL DATA IN THE THREE DATABASES IS CORRECT EACH TIME A BID PACKAGE IS SUBMITTED. FAILURE PROPERLY INPUT AND/OR UPDATE YOUR DATA MAY CAUSE THE BID TO BE REJECTED.

SOLICITATION, OFFER, AND AWARD <i>(Construction, Alteration, or Repair)</i>	1. Solicitation No. DTFH71-07-B-00008	2. Type of Solicitation <input checked="" type="checkbox"/> Sealed Bid (<i>IFB</i>) <input type="checkbox"/> Negotiated (<i>RFP</i>)	3. Date Issued 11/13/06	Page of Pages 1 OF 4
	IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.			

4. Contract No.	5. Requisition/Purchase Request No.	6. Project No. PRA-ROCR 3A5, 204(1)
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7. Issued By: Federal Highway Administration Eastern Federal Lands Highway Division Loudoun Tech Center, Room 105 21400 Ridgetop Circle Sterling, Virginia 20166-6511	CODE: N/A:	8. Address Offer To: See Bock 7
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9. FOR INFORMATION See Blocks 9A & 9B	A. Name: Peggy L. Schaad	B. Telephone No. (Include area code) (NO COLLECT CALLS) Email All Questions/Inquiries To: eflhd.contracts@fhwa.dot.gov
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SOLICITATION

See Continuation
of SF 1442

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

10. The Government requires performance of the work described in these documents (title, identifying no., date):
This Invitation for Bids is for the Rock Creek and Potomac Parkway, located in Washington, DC in strict accordance with the Solicitation/Contract instructions, notices, clauses, provisions, items listed below, and for the quantities of work actually performed at the unit prices as bid in the Bid Schedule, including all applicable Federal, State, and local taxes.

- * FP - Standard Specification for Construction of Roads & Bridges on Federal Highway Projects.
- * Bid Schedule, Section B - pages B-1 through B-13.
- * Special Contract Requirements, Section J - pages J-1 through J-104.
- * Plans (Drawings), Sheets 1 through 177.
- * Soils and Foundation Report, Pages 1 through 128.
- * Hydraulics Report, Pages 1 through 94.
- * Permits, Pages 1 through 166.

11. The Contractor shall begin performance within **10** calendar days and complete it within calendar days after receiving
 Award, Notice to Proceed. This performance period is mandatory, negotiable. (See Continuation Sheet)

12A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? (If "YES," indicate within how many calendar days after award in Item 12B.) <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO SEE SUBSECTION 102.06 OF FP-96	12B. CALENDAR DAYS Within 14 calendar days after Notice of Award
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13. ADDITIONAL SOLICITATION REQUIREMENTS:

- a. Offers in original and **0** copies to perform the work required are due at the place specified in Item 8 by **2:00 PM** local time **12/13/06**. If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.
- b. An offer guarantee **is**, is not required.
- c. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.
- d. Offers providing less than **60** calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

OFFER (Must be fully completed by offeror)

14. Name and Address of Offeror (Include ZIP code)	15. Telephone No. (Include area code)
	16. Remittance Address (Include only if different than Item 14)
CODE	FACILITY CODE

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

AMOUNTS See Bid Schedule - Section "B" Pages

18. The offeror agrees to furnish any required performance and payment bonds.
19. ACKNOWLEDGEMENT OF AMENDMENTS
(The offeror acknowledges receipt of amendments to the solicitation - give number and date of each)

AMENDMENT NO.								
DATE								

20a. Name and title of person authorized to sign offer (Type or print)	20B. Signature	20C. Offer Date
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AWARD (To be completed by Government)

21. Items Accepted:

22. Amount	23. Accounting and appropriation data
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24. SUBMIT INVOICES TO ADDRESS SHOWN IN <i>(4 copies unless otherwise specified)</i>  ITEM See Block 26	25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO <input type="checkbox"/> 15 USC 637(a) () <input type="checkbox"/> 41 USC 253(c) ()
26. ADMINISTERED BY Federal Highway Administration Eastern Federal Lands Highway Division 21400 Ridgetop Circle Sterling, Virginia 20166-6511	27. PAYMENT WILL BE MADE BY: Federal Highway Administration Eastern Federal Lands Highway Division Finance Division, Room 357 21400 Ridgetop Circle Sterling, Virginia 20166-6511

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

<input type="checkbox"/> 28. NEGOTIATED AGREEMENT <i>(Contractor is required to sign this document and return ___ copies to issuing office.)</i> Contractor agrees to furnish and deliver all items or perform all work requirements identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications incorporated by reference in or attached to this contract.	<input type="checkbox"/> 29. AWARD <i>(Contractor is not required to sign this document.)</i> Your offer on this solicitation is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.
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30a. Name and Title of Contractor or Person Authorized to Sign <i>(Type or print)</i>	31a. Name of Contracting Officer <i>(Type or print)</i>
30b. Signature	31b. United States of America
30c. Date	31c. Date
	BY

CONTINUATION OF SF 1442

Block 2:

This project is **UN-RESTRICTED** - Bids will be accepted from **ALL** eligible business concerns.

This procurement is made pursuant to Public Law 100-656 Title VII, which established the Small Business Competitiveness Demonstration Program. This procurement falls under North American Industry Classification System (NAICS) code 237310 - Highway, Street, and Bridge Construction (see FAR Subpart 19.10)

The award of this project is subject to a 10% price evaluation preference for eligible HubZone Small Business Concerns (must be on the SBA listing) (see FAR Clause 52.219-4).

Facsimile and electronic bids will not be accepted.

PHYSICAL DATA AVAILABLE FOR REVIEW

1. Manual on Uniform Traffic Control Devices for Streets and Highways, 2003 Edition, published by the Federal Highway Administration. <http://mutcd.fhwa.dot.gov>.
2. National Park Service Sign Manual, revised - January 1988, United States Department of the Interior. <http://www.nps.gov/npsigns>.
3. Soils and Foundation Report
4. Permits
5. Hydraulics

Block 9:

In accordance with FAR Provision 52.236-27, Site Visit, a Government representative can be available to show the project to prospective bidders. **All requests** for site visits and/or questions concerning this construction project to must be emailed to

eflhd.contracts@fhwa.dot.gov. Interested parties must provide the Solicitation Number and the relevant project name with all requests and questions.

r Block 11:

The maximum time for *Schedule A shall not exceed* **369** Calendar days.

The completion time for the contract will be the time offered by the successful bidder, **not to exceed** the maximum time above.

The removal of asphalt pavement-wearing surface on the L Street Bridge prohibited between November 30 and March 24 to avoid delays in placing the new latex modified concrete (LMC) overlays due to possible cold or inclement weather. Once the removal of the asphalt concrete wearing surface has started, the Contractor shall continue to complete the removal, repair any spalled or deteriorated concrete in the deck of the L Street Bridge and place the LMC overlay in the shortest possible time. Placement of LMC overlay on bridge decks is prohibited between November 30 and April 1. No asphalt concrete wearing surfaces may be removed that will not be overlaid and cured prior to this period. All work related to the Thompson's

CONTINUATION OF SF 1442

Boat Center access road must be done during the period from November 1 to November 30.

Notice to Proceed will be issued within 30 days following receipt of acceptable performance and payment bonds.

Block 12A:

Furnish performance and payment bonds in accordance with FAR Clause 52.228-15.

Block 13:

A bid guarantee in the amount of not less than 20 percent of the bid price or \$3 million, whichever is less, is required with this bid. If the bidder fails to provide the required bid guarantee, such failure may require rejection of the bid. Reference FAR Provision 52.228-1, Bid Guarantee.

Other:

The estimated price is expected to fall within the price range of **\$2,000, 000 to \$5,000,000**.

Responsibility of bidders shall be evaluated in accordance with the information provided on the Bidder's Qualification Form, which can be downloaded from FHWA web site. FP-96 or FP-03 versions can be downloaded at the FHWA web site. FHWA web site is <http://www2.evl.fhwa.dot.gov/Documents.aspx> .

BID SCHEDULE INSTRUCTIONS

PROJECT: PRA-ROCR 3A5, 204(1)

BIDDERS PLEASE NOTE: Before preparing the bid, carefully read the Instructions to Bidders. While preparing the bid, comply with the following:

COMPLETING THE BID SCHEDULE

Complete the Bid Schedules by handwriting in ink or typing. Specify a Unit Bid Price, in figures with cents to only two decimal places, for each pay item in the Unit Bid Price column for which a quantity is given. Do not enter or tender a Unit Bid Price for any pay item for which no estimated quantity appears in the Bid Schedule. Determine the products of the respective unit prices and quantities, and show them, in figures, in the Amount Bid column. Determine the Bid Total by adding the amounts of the several items, and show in the block provided on Page B-12. In case of multiplication errors, the Amount Bid for the item will be based on the Unit Bid Price.

To be eligible for award, bidders must submit prices for each pay item.

All contract work shall be completed by the November 30, 2007.

Please review Subsection 109.05 of the FP-96 regarding scope of payment for direct and indirect payment work.

SCHEDULE OF WORK

The Bid Schedule is comprised of:

Schedule A -- Includes rehabilitation of Rock Creek and Potomac Parkway from Virginia Avenue to P Street Bridge, milling and LMC overlay on L Street Bridge. Reconstruction of access road and parking lot at the Thomson's Boat Center. Reconstruction of P Street Ramp and miscellaneous work.

BASIS FOR AWARD

Award will be made to the responsive, responsible bidder with the lowest Total Price of Project.

Bid Schedule

Project: PRA-ROCR 3A5,204(1)
REHABILITATION OF THE ROCK CREEK AND POTOMAC PKWY FROM

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
15101	MOBILIZATION ALL	Lump Sum	\$ _____
15201	CONSTRUCTION SURVEY AND STAKING ALL	Lump Sum	\$ _____
15401	CONTRACTOR TESTING ALL	Lump Sum	\$ _____
15501	CONSTRUCTION SCHEDULE ALL	Lump Sum	\$ _____
15703	SILT FENCE 4,000 LNFT	\$ _____	\$ _____
15716D	INLET PROTECTION, TYPE D 39 EACH	\$ _____	\$ _____
15718	STABILIZED CONSTRUCTION ENTRANCE 5 EACH	\$ _____	\$ _____
20103	CLEARING AND GRUBBING 245 SQYD	\$ _____	\$ _____
20301AD	REMOVAL OF LIGHT POLE (STREET LIGHT POLES AND LUMINAIRES) 46 EACH	\$ _____	\$ _____
20301AT	REMOVAL OF RAISED PAVEMENT MARKER 162 EACH	\$ _____	\$ _____
20301AZ	REMOVAL OF STRUCTURES AND OBSTRUCTIONS (UNDERPASS LUMINAIRE) 10 EACH	\$ _____	\$ _____

Bid Schedule A

Project: PRA-ROCR 3A5,204(1)
REHABILITATION OF THE ROCK CREEK AND POTOMAC PKWY FROM

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
20301AZ	REMOVAL OF STRUCTURES AND OBSTRUCTIONS (CONCRETE LIGHT FOUNDATION) 46 EACH	\$ _____	\$ _____
20301F	REMOVAL OF INLETS 4 EACH	\$ _____	\$ _____
20302AG	REMOVAL OF DETECTOR WIRE (LEAD-IN CABLE) 39 LNFT	\$ _____	\$ _____
20302RB	REMOVAL OF PORTLAND CEMENT CONCRETE CURB 1,617 LNFT	\$ _____	\$ _____
20302RD	REMOVAL OF STONE CURB 130 LNFT	\$ _____	\$ _____
20302SB	REMOVAL OF PORTLAND CEMENT CONCRETE CURB AND GUTTER 3,228 LNFT	\$ _____	\$ _____
20302W	REMOVAL OF GUARDRAIL 758 LNFT	\$ _____	\$ _____
20303AD	REMOVAL OF GRANITE COBBLES 256 SQYD	\$ _____	\$ _____
20303AEB	REMOVAL OF PORTLAND CEMENT CONCRETE MEDIAN 341 SQYD	\$ _____	\$ _____
20303PA	REMOVAL OF ASPHALT PAVEMENT 4,822 SQYD	\$ _____	\$ _____
20303PB	REMOVAL OF PORTLAND CEMENT CONCRETE PAVEMENT (BASE REPAIR) 300 SQYD	\$ _____	\$ _____
20303PBN	REMOVAL OF PORTLAND CEMENT CONCRETE PAVEMENT, 6-INCH DEPTH		

Bid Schedule A

Project: PRA-ROCR 3A5,204(1)

REHABILITATION OF THE ROCK CREEK AND POTOMAC PKWY FROM

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
	2,122 SQYD	\$ _____	\$ _____
20303PE	REMOVAL OF BRICK PAVEMENT (UNDERPASS BLOCK PAVEMENT)		
	118 SQYD	\$ _____	\$ _____
20303PF	REMOVAL OF BRIDGE PAVEMENT (VARIABLE DEPTH 1" TO 2 1/2")		
	616 SQYD	\$ _____	\$ _____
20303QA	REMOVAL OF ASPHALT SIDEWALK		
	2,810 SQYD	\$ _____	\$ _____
20303QB	REMOVAL OF PORTLAND CEMENT CONCRETE SIDEWALK		
	228 SQYD	\$ _____	\$ _____
20307	SAWCUTTING PAVEMENT		
	1,002 LNFT	\$ _____	\$ _____
20401	ROADWAY EXCAVATION		
	826 CUYD	\$ _____	\$ _____
20402	SUBEXCAVATION		
	178 CUYD	\$ _____	\$ _____
20403	UNCLASSIFIED BORROW		
	206 CUYD	\$ _____	\$ _____
20418	HAND EXCAVATION		
	318 CUYD	\$ _____	\$ _____
20421	ROCK EXCAVATION		
	5 CUYD	\$ _____	\$ _____
20701BA	EARTHWORK GEOTEXTILE, TYPE II-A		
	480 SQYD	\$ _____	\$ _____
30102ZK	AGGREGATE BASE, GRADING C OR D, 4-INCH DEPTH		
	418 SQYD	\$ _____	\$ _____

Bid Schedule A

Project: PRA-ROCR 3A5,204(1)

REHABILITATION OF THE ROCK CREEK AND POTOMAC PKWY FROM

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
30102ZN	AGGREGATE BASE, GRADING C OR D, 6-INCH DEPTH 5,166 SQYD	\$ _____	\$ _____
40108	RUMBLE STRIP 3,235 LNFT	\$ _____	\$ _____
41301K	ASPHALT PAVEMENT MILLING, 4-INCH DEPTH (VARIABLE FROM >2-INCH TO 4-INCH) 17,231 SQYD	\$ _____	\$ _____
41301N	ASPHALT PAVEMENT MILLING, 6-INCH DEPTH (VARIABLE FROM >4-INCH TO 6-INCH) 4,079 SQYD	\$ _____	\$ _____
41801ABC	SUPERPAVE ASPHALT CONCRETE PAVEMENT, 3/8-INCH NOMINAL MAXIMUM SIZE AGGREGATE, 0.3 - <3 ESAL, TYPE 3 PAVEMENT SMOOTHNESS (PG70-22) 2,835 TON	\$ _____	\$ _____
41801CB	SUPERPAVE ASPHALT CONCRETE PAVEMENT, 3/4-INCH NOMINAL MAXIMUM SIZE AGGREGATE, 0.3 - <3 ESAL (PG70-22) 420 TON	\$ _____	\$ _____
41802CB	SUPERPAVE ASPHALT CONCRETE PAVEMENT, 3/4-INCH NOMINAL MAXIMUM SIZE AGGREGATE, 0.3 - <3 ESAL, WEDGE AND LEVELING (PG70-22) 2,822 TON	\$ _____	\$ _____
50101N	REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT, 6-INCH DEPTH 2,122 SQYD	\$ _____	\$ _____
50101N	REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT, 6-INCH DEPTH (PATCHING / BASE REPAIR) 300 SQYD	\$ _____	\$ _____
50102K	PLAIN PORTLAND CEMENT CONCRETE PAVEMENT, 4-INCH DEPTH 256 SQYD	\$ _____	\$ _____

Bid Schedule A

Project: PRA-ROCR 3A5,204(1)

REHABILITATION OF THE ROCK CREEK AND POTOMAC PKWY FROM

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
55207	STRUCTURAL CONCRETE, FOR OVERLAY 616 SQYD	\$ _____	\$ _____
55209	REPAIR CONCRETE 45 SQFT	\$ _____	\$ _____
55227	CLEAN CONCRETE SURFACE 5,540.0 SQFT	\$ _____	\$ _____
60201J	15-INCH PIPE CULVERT 691 LNFT	\$ _____	\$ _____
60403FAF	INLET, TYPE 6A-6 (MODIFIED) 2 EACH	\$ _____	\$ _____
60403FAFA	INLET, TYPE 6A-6 DOUBLE (MODIFIED) 6 EACH	\$ _____	\$ _____
60404B	CATCH BASIN, TYPE 2 2 EACH	\$ _____	\$ _____
60405	MANHOLE ADJUSTMENT 8 EACH	\$ _____	\$ _____
60413	CONCRETE INLET TOPS 4 EACH	\$ _____	\$ _____
60414FAF	METAL GRATE, TYPE 6A-6 25 EACH	\$ _____	\$ _____
60501	UNDERDRAIN SYSTEM 370 LNFT	\$ _____	\$ _____
60703	CLEANING CULVERTS IN PLACE 953 LNFT	\$ _____	\$ _____

Bid Schedule A

Project: PRA-ROCR 3A5,204(1)

REHABILITATION OF THE ROCK CREEK AND POTOMAC PKWY FROM

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
60705H	LINING 12-INCH PIPE CULVERT 83 LNFT	\$ _____	\$ _____
60705J	LINING 15-INCH PIPE CULVERT 591 LNFT	\$ _____	\$ _____
60705K	LINING 18-INCH PIPE CULVERT 138 LNFT	\$ _____	\$ _____
60705M	LINING 24-INCH PIPE CULVERT 141 LNFT	\$ _____	\$ _____
60710	CLEAN DRAINAGE STRUCTURES 29 EACH	\$ _____	\$ _____
60902T	PORTLAND CEMENT CONCRETE CURB AND GUTTER, 11-INCH DEPTH (MOUNTABLE) 1,350 LNFT	\$ _____	\$ _____
60902V	PORTLAND CEMENT CONCRETE CURB AND GUTTER, 13-INCH DEPTH (NON-MOUNTABLE) 1,878 LNFT	\$ _____	\$ _____
60903AX	STONE CURB, TYPE 1, 16-INCH DEPTH (GRANITE) 3,281 LNFT	\$ _____	\$ _____
61501A	ASPHALT CONCRETE SIDEWALK 3,545 SQYD	\$ _____	\$ _____
61501B	PORTLAND CEMENT CONCRETE SIDEWALK 186 SQYD	\$ _____	\$ _____
61503B	PORTLAND CEMENT CONCRETE MEDIAN 10 SQYD	\$ _____	\$ _____
61505B	PORTLAND CEMENT CONCRETE WHEELCHAIR RAMP 104 SQYD	\$ _____	\$ _____

Bid Schedule A

Project: PRA-ROCR 3A5,204(1)

REHABILITATION OF THE ROCK CREEK AND POTOMAC PKWY FROM

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
61701H	GUARDRAIL SYSTEM SBTB 3,780 LNFT	\$ _____	\$ _____
61706	CONNECTION TO STRUCTURE 4 EACH	\$ _____	\$ _____
62016	RESET STONE MASONRY (GRANITE COBBLES) 256 SQYD	\$ _____	\$ _____
62401F	FURNISHING AND PLACING TOPSOIL, 2-INCH DEPTH 3,726 SQYD	\$ _____	\$ _____
62401K	FURNISHING AND PLACING TOPSOIL, 4-INCH DEPTH 643 SQYD	\$ _____	\$ _____
62505A	MULCHING, DRY METHOD (TEMPORARY HIKER/BIKER TRAIL) 557 SQYD	\$ _____	\$ _____
62701A	SOLID SOD 4,369 SQYD	\$ _____	\$ _____
63304CC	SIGNS, ALUMINUM PANELS, TYPE 3 SHEETING 108 SQFT	\$ _____	\$ _____
63308A	REMOVING AND RESETTING SIGN 13 EACH	\$ _____	\$ _____
63311BA	POSTS, WOOD 4" X 4" 17 EACH	\$ _____	\$ _____
63401DA	PAVEMENT MARKINGS, TYPE D, SOLID 3,322 LNFT	\$ _____	\$ _____
63401DB	PAVEMENT MARKINGS, TYPE D, BROKEN (REVERSED PATTERN) 5,440 LNFT	\$ _____	\$ _____

Bid Schedule A

Project: PRA-ROCR 3A5,204(1)

REHABILITATION OF THE ROCK CREEK AND POTOMAC PKWY FROM

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
63401HA	PAVEMENT MARKINGS, TYPE H, SOLID 16,222 LNFT	\$ _____	\$ _____
63401HB	PAVEMENT MARKINGS, TYPE H, BROKEN 8,220 LNFT	\$ _____	\$ _____
63402H	PAVEMENT MARKINGS, TYPE H 64 SQFT	\$ _____	\$ _____
63503A	ADVANCE WARNING ARROW PANEL, TYPE A 3 EACH	\$ _____	\$ _____
63505C	BARRICADE, TYPE 3 5 EACH	\$ _____	\$ _____
63507	CONSTRUCTION SIGN 1,217 SQFT	\$ _____	\$ _____
63508B	DRUM, TYPE B 150 EACH	\$ _____	\$ _____
63511	TEMPORARY CONCRETE BARRIER 1,140 LNFT	\$ _____	\$ _____
63512	MOVING TEMPORARY CONCRETE BARRIER 450 LNFT	\$ _____	\$ _____
63514	TEMPORARY PAVEMENT MARKINGS 14,654 LNFT	\$ _____	\$ _____
63519	PAVEMENT MARKING REMOVAL 13,771 LNFT	\$ _____	\$ _____
63520	VERTICAL PANEL 3 EACH	\$ _____	\$ _____

Bid Schedule A

Project: PRA-ROCR 3A5,204(1)

REHABILITATION OF THE ROCK CREEK AND POTOMAC PKWY FROM

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
63521A	WARNING LIGHT, TYPE A 14 EACH	\$ _____	\$ _____
63521C	WARNING LIGHT, TYPE C 150 EACH	\$ _____	\$ _____
63523	MAINTENANCE OF TRAFFIC, PAVEMENT PATCH 50 TON	\$ _____	\$ _____
63524	VARIABLE MESSAGE SIGN 9 EACH	\$ _____	\$ _____
63525	TEMPORARY CRASH CUSHION 4 EACH	\$ _____	\$ _____
63526	MOVING TEMPORARY CRASH CUSHION 6 EACH	\$ _____	\$ _____
63527A	REPLACEMENT CARTRIDGES FOR CRASH CUSHION 10 EACH	\$ _____	\$ _____
63531	TEMPORARY SNOW FENCE 1,760 LNFT	\$ _____	\$ _____
63606CB	CONDUIT, 1-INCH, RIGID GALVANIZED STEEL 15 LNFT	\$ _____	\$ _____
63606GA	CONDUIT, 2-INCH, PVC 7,650 LNFT	\$ _____	\$ _____
63606GB	CONDUIT, 2-INCH, RIGID GALVANIZED STEEL (BRIDGE ATTACHED) 225 LNFT	\$ _____	\$ _____
63606GB	CONDUIT, 2-INCH, RIGID GALVANIZED STEEL (BORED) 25 LNFT	\$ _____	\$ _____

Bid Schedule A

Project: PRA-ROCR 3A5,204(1)

REHABILITATION OF THE ROCK CREEK AND POTOMAC PKWY FROM

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
63606LA	CONDUIT, 4-INCH, PVC (CONCRETE ENCASED) 25 LNFT	\$ _____	\$ _____
63606LB	CONDUIT, 4-INCH, RIGID GALVANIZED STEEL 70 LNFT	\$ _____	\$ _____
63606LB	CONDUIT, 4-INCH, RIGID GALVANIZED STEEL (BORED) 285 LNFT	\$ _____	\$ _____
63607C	ELECTRICAL CONDUCTORS, 10 AWG 3,560 LNFT	\$ _____	\$ _____
63607F	ELECTRICAL CONDUCTORS, 4 AWG 30,800 LNFT	\$ _____	\$ _____
63608A	LUMINAIRES, TYPE A (400 WATT MH COBRAHEAD) 38 EACH	\$ _____	\$ _____
63608B	LUMINAIRES, TYPE B (150 WATT HPS HOLOPHANE WALLPACK) 10 EACH	\$ _____	\$ _____
63608D	LUMINAIRES, TYPE WASHINGTON STYLE 8 EACH	\$ _____	\$ _____
63609A	POLES, TYPE A (30 FOOT STEEL) 38 EACH	\$ _____	\$ _____
63609F	POLES, TYPE WASHINGTON GLOBE NO. 14N LIGHT STANDARD 8 EACH	\$ _____	\$ _____
63610	PULL BOX 1 EACH	\$ _____	\$ _____
63614	JUNCTION BOX 8 EACH	\$ _____	\$ _____

Bid Schedule A

Project: PRA-ROCR 3A5,204(1)

REHABILITATION OF THE ROCK CREEK AND POTOMAC PKWY FROM

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
63617A	CABLE CONNECTOR KIT, TYPE 1 214 EACH	\$ _____	\$ _____
63617B	CABLE CONNECTOR KIT, TYPE 2 64 EACH	\$ _____	\$ _____
63617C	CABLE CONNECTOR KIT, TYPE 3 48 EACH	\$ _____	\$ _____
63617D	CABLE CONNECTOR KIT, TYPE 4 12 EACH	\$ _____	\$ _____
63619	TRENCHING AND BACKFILL 7,405 LNFT	\$ _____	\$ _____
63620	BREAKAWAY POLE BASE 25 EACH	\$ _____	\$ _____
63621	MANHOLE, ELECTRICAL (3 FT X 3 FT) 8 EACH	\$ _____	\$ _____
63626D	ELECTRICAL GROUND, 8 AWG 7,650 LNFT	\$ _____	\$ _____
63627	ADJUST ELECTRICAL MANHOLE 2 EACH	\$ _____	\$ _____
63628A	LIGHTPOLE FOUNDATION, CONCRETE 46 EACH	\$ _____	\$ _____
63637	GLOBES, WASHINGTON DC FIXTURE 8 EACH	\$ _____	\$ _____
63640	COMPENSATION FOR UTILITY COMPANY WORK 1 CTSM	\$37,500.00	\$37,500.00

Bid Schedule A

Project: PRA-ROCR 3A5,204(1)

REHABILITATION OF THE ROCK CREEK AND POTOMAC PKWY FROM

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
63648	TRAFFIC DETECTOR WIRE (LOOP WIRE) 600 LNFT	\$ _____	\$ _____
63648	TRAFFIC DETECTOR WIRE (LEAD-IN CABLE) 39 LNFT	\$ _____	\$ _____
63701	FIELD OFFICE 1 EACH	\$ _____	\$ _____
63801	LOCATE UTILITIES 15 EACH	\$ _____	\$ _____
64906F	REMOVE AND RESET PARKING METER 3 EACH	\$ _____	\$ _____

TOTAL \$ _____

Submitted by: _____
Name of Bidder

BID SUMMARY
Project PRA-ROCR 3A5, 204(1)
(Complete for Pages B-1 through B-12)

Bid Total (from Page B-12)

\$ _____

Does the Bidder claim the Price Evaluation Preference for HUBZone Small Business
Concerns as defined in FAR Clause 52.219-4?

Yes

No

BID BOND <i>(See instruction on reverse)</i>	DATE BOND EXECUTED <i>(Must not be later than bid opening date)</i>	OMB NO.: 9000-0045
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Public reporting burden for this collection of information is estimated to average 25 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the FAR Secretariat (MVR), Federal Acquisition Policy Division, GSA, Washington, DC 20405.

PRINCIPAL <i>(Legal name and business address)</i>	TYPE OF ORGANIZATION <i>("X" one)</i> <input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> PARTNERSHIP <input type="checkbox"/> JOINT VENTURE <input type="checkbox"/> CORPORATION STATE OF INCORPORATION
--	--

SURETY(IES) *(Name and business address)*

PENAL SUM OF BOND					BID IDENTIFICATION	
PERCENT OF BID PRICE	AMOUNT NOT TO EXCEED				BID DATE	INVITATION NO.
	MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENTS		
					FOR <i>(Construction, Supplies, or Services)</i>	

OBLIGATION:

We, the Principal and Surety(ies) are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum. For payment of the penal sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally. However, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us. For all other purposes, each Surety binds itself, jointly and severally with the Principal, for the payment of the sum shown opposite the name of the Surety. If no limit of liability is indicated, the limit of liability is the full amount of the penal sum.

CONDITIONS:

The Principal has submitted the bid identified above.

THEREFORE:

The above obligation is void if the Principal - (a) upon acceptance by the Government of the bid identified above, within the period specified therein for acceptance (sixty (60) days if no period is specified), executes the further contractual documents and gives the bond(s) required by the terms of the bid as accepted within the time specified (ten (10) days if no period is specified) after receipt of the forms by the principal; or (b) in the event of failure to execute such further contractual documents and give such bonds, pays the Government for any cost of procuring the work which exceeds the amount of the bid.

Each Surety executing this instrument agrees that its obligation is not impaired by any extension(s) of the time for acceptance of the bid that the Principal may grant to the Government. Notice to the surety(ies) of extension(s) are waived. However, waiver of the notice applies only to extensions aggregating not more than sixty (60) calendar days in addition to the period originally allowed for acceptance of the bid.

WITNESS:

The Principal and Surety(ies) executed this bid bond and affixed their seals on the above date.

PRINCIPAL				
SIGNATURE(S)	1.	2.	3.	<i>Corporate Seal</i>
	<i>(Seal)</i>	<i>(Seal)</i>	<i>(Seal)</i>	
NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.	3.	

INDIVIDUAL SURETY(IES)		
SIGNATURE(S)	1.	2.
	<i>(Seal)</i>	<i>(Seal)</i>
NAME(S) <i>(Typed)</i>	1.	2.

CORPORATE SURETY(IES)			
SURETY A	NAME & ADDRESS	STATE OF INC.	LIABILITY LIMIT (\$)
	SIGNATURE(S)	1.	2.
	NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.

Corporate Seal

SURETY B	NAME & ADDRESS		STATE OF INC.	LIABILITY LIMIT (\$)	<i>Corporate Seal</i>
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.		
SURETY C	NAME & ADDRESS		STATE OF INC.	LIABILITY LIMIT (\$)	<i>Corporate Seal</i>
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.		
SURETY D	NAME & ADDRESS		STATE OF INC.	LIABILITY LIMIT (\$)	<i>Corporate Seal</i>
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.		
SURETY E	NAME & ADDRESS		STATE OF INC.	LIABILITY LIMIT (\$)	<i>Corporate Seal</i>
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.		
SURETY F	NAME & ADDRESS		STATE OF INC.	LIABILITY LIMIT (\$)	<i>Corporate Seal</i>
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.		
SURETY G	NAME & ADDRESS		STATE OF INC.	LIABILITY LIMIT (\$)	<i>Corporate Seal</i>
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.		

INSTRUCTIONS

1. This form is authorized for use when a bid guaranty is required. Any deviation from this form will require the written approval of the Administrator of General Services.
2. Insert the full legal name and business address of the Principal in the space designated "Principal" on the face of the form. An authorized person shall sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.
3. The bond may express penal sum as a percentage of the bid price. In these cases, the bond may state a maximum dollar limitation (e.g., (e.g., 20% of the bid price but the amount not to exceed _____ dollars).
4. (a) Corporations executing the bond as sureties must appear on the Department of the Treasury's list of approved sureties and must act within the limitation listed therein. where more than one corporate surety is involved, their names and addresses shall appear in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)." In the space designed "SURETY(IES)" on the face of the form, insert only the letter identification of the sureties.

(b) Where individual sureties are involved, a completed Affidavit of Individual surety (Standard Form 28), for each individual surety, shall accompany the bond. The Government may require the surety to furnish additional substantiating information concerning its financial capability.
5. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Corporate Seal"; and shall affix an adhesive seal if executed in Maine, New Hampshire, or any other jurisdiction requiring adhesive seals.
6. Type the name and title of each person signing this bond in the space provided.
7. In its application to negotiated contracts, the terms "bid" and "bidder" shall include "proposal" and "offeror."

CONTRACT CLAUSES INDEX
FEDERAL ACQUISITION REGULATION (FAR) & TRANSPORTATION ACQUISITION REGULATION (TAR)
(Updated thru FAC 2005- 09 on 04/19/2006)

52.252-2 Clauses Incorporated By Reference
(Feb 1998)

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

(End of Clause)

FAR & TAR CLAUSES INCORPORATED BY REFERENCE

CLAUSE	TITLE	DATE	REMARKS
52.202-01	DEFINITIONS	Jul-04	
52.203-03	GRATUITIES	Apr-84	
52.203-05	COVENANT AGAINST CONTINGENT FEES	Apr-84	
52.203-07	ANTI-KICKBACK PROCEDURES	Jul-95	
52.203-8	CANCEL. & RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY	Jan-97	
52.203-10	PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY	Jan-97	
52.203-12	LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS	Sep-05	
52.204-04	PRINTING/COPYING DOUBLE-SIDED ON RECYCLED PAPER	Aug-00	
52.204-07	CENTRAL CONTRACTOR REGISTRATION	Oct-03	Contractor Mandatory Internet Data Input
52.209-06	PROTECTING GOV. INTEREST WHEN SUBCONTRACTING W/ CONT. DEB. SUSP. OR PROP. FOR DEB.	Jan-05	
52.214-26	AUDIT AND RECORDS--SEALED BIDDING	Oct-97	
52.214-27	PRICE REDUCTION FOR DEFECT. COST OR PRICING DATA-MODIFICATIONS -SEALED BIDDING	Oct-97	
52.214-28	SUBCONTRACTOR COST OR PRICING DATA--MODIFICATIONS--SEALED BIDDING	Oct-97	
52.219-08	UTILIZATION OF SMALL BUSINESS CONCERNS	May-04	
52.219-09 ALT 1	SMALL BUSINESS SUBCONTRACTING PLAN (ALT 1 - (Oct 01))	Jan-05	Large Business Mandatory Submittal Requirement
52.219-14	LIMITATIONS ON SUBCONTRACTING	Dec-96	
52.219-16	LIQUIDATED DAMAGES - SUBCONTRACTING PLAN	Jan-99	
52.222-03	CONVICT LABOR	Jun-03	
52.222-04	CONTRACT WORK HOURS AND SAFETY STANDARDS ACT--OVERTIME COMPENSATION	Jul-05	
52.222-06	DAVIS-BACON ACT	Jul-05	Contractor Mandatory Wage Rates Posting
52.222-07	WITHHOLDING OF FUNDS	Feb-88	
52.222-08	PAYROLLS AND BASIC RECORDS	Feb-88	Contractor Weekly Payroll Submittals
52.222-09	APPRENTICES AND TRAINEES	Jul-05	
52.222-10	COMPLIANCE WITH COPELAND ACT REQUIREMENTS	Feb-88	
52.222-11	SUBCONTRACTS (LABOR STANDARDS)	Jul-05	
52.222-12	CONTRACT TERMINATION--DEBARMENT	Feb-88	
52.222-13	COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REGULATIONS	Feb-88	
52.222-14	DISPUTES CONCERNING LABOR STANDARDS	Feb-88	
52.222-15	CERTIFICATION OF ELIGIBILITY	Feb-88	
52.222-21	PROHIBITION OF SEGREGATED FACILITIES	Feb-99	
52.222-26	EQUAL OPPORTUNITY	Apr-02	
52.222-27	AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION	Feb-99	
52.222-35	EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, & OTHER ELIGIBLE VETERANS.	Dec-01	

CONTRACT CLAUSES INDEX
FEDERAL ACQUISITION REGULATION (FAR) & TRANSPORTATION ACQUISITION REGULATION (TAR)
(Updated thru FAC 2005- 09 on 04/19/2006)

FAR & TAR CLAUSES INCORPORATED BY REFERENCE			
CLAUSE	TITLE	DATE	REMARKS
52.222-36	AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES	Jun-98	
52.222-37	EMPLOYMENT. REPORTS ON SPECIAL DISABLED VETS, VETS OF THE VIETNAM ERA, ETAL.	Dec-01	Contractor Annual Mandatory Reporting Requirement
52.222-39	NOTIFICATION OF EMPLOYEE RIGHTS CONCERNING PAYMENT OF UNION DUES OR FEES	Dec-04	Contractor Mandatory Postings
52.223-06	DRUG-FREE WORKPLACE	May-01	
52.223-14	TOXIC CHEMICAL RELEASE REPORTING	Aug-03	Contractor Annual Contractor Reporting Requirement
52.225-13	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES	Feb-06	
52.227-01	AUTHORIZATION AND CONSENT	Jul-95	
52.227-02	NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT	Aug-96	
52.227-04	PATENT INDEMNITY-CONSTRUCTION CONTRACTS	Apr-84	
52.228-02	ADDITIONAL BOND SECURITY	Oct-97	
52.228-5	INSURANCE - WORK ON A GOVERNMENT INSTALLATION	Jan-97	Contractor Submittal Requirement
52.228-11	PLEDGES OF ASSETS	Feb-92	
52.228-12	PROSPECTIVE SUBCONTRACTOR REQUESTS FOR BONDS	Oct-95	
52.228-14	IRREVOCABLE LETTER OF CREDIT	Dec-99	
52.228-15	PERFORMANCE AND PAYMENT BONDS - CONSTRUCTION	Sep-05	Contractor Submittal Requirement
52.229-03	FEDERAL, STATE, AND LOCAL TAXES	Apr-03	
52.232-05	PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS	Sep-02	Contractor Submittal Requirement
52.232-17	INTEREST	Jun-96	
52.232-23	ASSIGNMENT OF CLAIMS	Jan-86	
52.232-27	PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS	Sep-05	
52.232.33	PAYMENT BY ELECTRONIC FUNDS TRANSFER - CENTRAL CONTRACTOR REGISTRATION	Oct-03	
52.233-01 ALT I	DISPUTES (Alt-I, Dec-91)	Jul-02	
52.233-03	PROTEST AFTER AWARD	Aug-96	
52.233-04	APPLICABLE LAW FOR BREACH OF CONTRACT CLAIM	Oct-04	
52.236-02	DIFFERING SITE CONDITIONS	Apr-84	
52.236-03	SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK	Apr-84	
52.236-05	MATERIAL AND WORKMANSHIP	Apr-84	
52.236-06	SUPERINTENDENCE BY THE CONTRACTOR	Apr-84	
52.236-07	PERMITS AND RESPONSIBILITIES	Nov-91	
52.236-08	OTHER CONTRACTS	Apr-84	
52.236-09	PROTECTION OF EXIST. VEGETATION., STRUCTURES., EQUIPMENT., UTILITIES, & IMPROVEMENTS	Apr-84	
52.236-10	OPERATIONS AND STORAGE AREAS	Apr-84	
52.236-11	USE AND POSSESSION PRIOR TO COMPLETION	Apr-84	
52.236-12	CLEANING UP	Apr-84	
52.236-13	ACCIDENT PREVENTION	Nov-91	

CONTRACT CLAUSES INDEX
FEDERAL ACQUISITION REGULATION (FAR) & TRANSPORTATION ACQUISITION REGULATION (TAR)
(Updated thru FAC 2005- 09 on 04/19/2006)

FAR & TAR CLAUSES INCORPORATED BY REFERENCE

CLAUSE	TITLE	DATE	REMARKS
52.236-15	SCHEDULES FOR CONSTRUCTION CONTRACTS	Apr-84	Contractor Submittal Requirement
52.236-17	LAYOUT OF WORK	Apr-84	
52.236-21	SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION	Feb-97	
52.236-26	PRECONSTRUCTION CONFERENCE	Feb-95	
52.242-13	BANKRUPTCY	Jul-95	
52.242-14	SUSPENSION OF WORK	Apr-84	
52.243-04	CHANGES	Aug-87	
52.244-06	SUBCONTRACTS FOR COMMERCIAL ITEMS	Dec-06	
52.245-02	GOVERNMENT PROPERTY (FIXED-PRICE CONTRACTS)	May 04	
52.246-12	INSPECTION OF CONSTRUCTION	Aug-96	
52.248-03 ALT I	VALUE ENGINEERING-CONSTRUCTION (Alt-I, Apr-84)	Feb-00	
52.249-02 ALT I	TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED PRICE) (Alt-I, Sep-96)	May-04	
52.249-10	DEFAULT (FIXED PRICE CONSTRUCTION)	Apr-84	
52.253-01	COMPUTER GENERATED FORMS	Jan-91	

TAR CLAUSES INCORPORATED BY REFERENCE

CLAUSE	TITLE	DATE	REMARKS
1252.211-71	INDEX FOR SPECIFICATIONS	Apr-05	
1252.242-73	CONTRACTING OFFICERS TECHNICAL REPRESENTATIVE	Oct-94	

FAR & TAR PROVISIONS INCORPORATED BY REFERENCE

PROVISION	TITLE	DATE	REMARKS
52.217-03	EVALUATION EXCLUSIVE OF OPTION	Apr-84	
52.217-04	EVALUATION OF OPTIONS EXERCISED AT TIME OF CONTRACT AWARD	Jun-88	
52.217-05	EVALUATION OF OPTIONS	Mar-89	

CONTRACT CLAUSES INDEX
FEDERAL ACQUISITION REGULATION (FAR) & TRANSPORTATION ACQUISITION REGULATION (TAR)
(Updated thru FAC 2005- 09 on 04/19/2006)

FAR & TAR CLAUSES INCORPORATED BY FULL TEXT

CLAUSE	TITLE	DATE	SECTION	SECTION TYPE	REMARKS
52.211-10	COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK	Apr-84	H	CONSTR. CONTRACT REQS.	Government Fill In
52.211-12	LIQUIDATED DAMAGES-CONSTRUCTION	Sep-00	H	CONSTR. CONTRACT REQS.	Government Fill In
52.211-18	VARIATION IN ESTIMATED QUANTITY	Apr-84	H	CONSTR. CONTRACT REQS.	
52.219-4	NOTICE OF PRICE EVALUATION. PREFERENCE FOR HUBZONE SB CONCERNS	Jul-05	F	SOCIOECON PROG REQS	Contractor Fill-In
52.222-23	NOTICE OF REQ. FOR AFFIRMATIVE ACTION TO ENSURE E.E.O.	Feb-99	F	SOCIOECON PROG REQS	Contractor Reporting Requirements
52.223-03 ALT I	HAZARDOUS MAT. IDENT. & MATERIAL SAFETY DATA (Alt-I, Jul-95)	Jan-97	G	GEN'L CONTRACT REQS.	Contractor Submittal Requirements
52.223-09	EST. OF % OF REC. MAT. CONTENT FOR EPA DESIGN. PRODUCTS	Aug-00	G	GEN'L CONTRACT REQS	Contractor Reporting Requirement
52.225-09	BUY AMERICAN ACT-CONSTRUCTION MATERIALS	Jan 05	F	SOCIOECON PROG REQS	Government & Contractor Fill In's
52-236-01	PERFORMANCE OF WORK BY THE CONTRACTOR	Apr -84	H	CONSTR. CONTRACT REQS	Government Fill In
52.236-04	PHYSICAL DATA	Apr-84	H	CONSTR. CONTRACT REQS.	Government Fill In
TAR CLAUSES INCORPORATED BY FULL TEXT					
CLAUSE	TITLE	DATE	SECTION	SECTION TYPE	REMARKS
FAR PT 22.9	GOV. NONDISCRIMINATION BECAUSE OF AGE POLICY	Feb-64	F	SOCIOECON PROG REQS	Policy Statement - Not A Clause

(End of Clauses Index)

CONTRACT PROVISIONS INDEX
FEDERAL ACQUISITION REGULATION (FAR) & TRANSPORTATION ACQUISITION REGULATION (TAR)
(Updated thru FAC 2005- 09 on 04/19/2006)

52.252-1 Solicitation Provisions Incorporated by Reference
(Feb 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this address: www.arnet.gov/far/

(End of Clause)

FAR & TAR PROVISIONS INCORPORATED BY REFERENCE

PROVISION	TITLE	DATE	REMARKS
52.211-06	BRAND NAME OR EQUAL	Aug-99	
52.214-03	AMENDMENTS TO INVITATIONS FOR BIDS	Dec-89	
52.214-04	FALSE STATEMENTS IN BIDS	Apr-84	
52.214-05	SUBMISSION OF BIDS	Mar-97	
52.214-06	EXPLANATION TO PROSPECTIVE BIDDERS	Apr-84	
52.214-07	LATE SUBMISSIONS, MODIFICATIONS, AND WITHDRAWALS OF BIDS	Nov-99	
52.214-18	PREPARATION OF BIDS--CONSTRUCTION	Apr-84	
52.214-19	CONTRACT AWARD--SEALED BIDDING--CONSTRUCTION	Aug-96	
52.225-10	NOTICE OF BUY AMERICAN ACT REQUIREMENT - CONSTRUCTION MATERIAL.	May-02	

TAR PROVISIONS INCORPORATED BY REFERENCE

PROVISION	TITLE	DATE	REMARKS

CONTRACT PROVISIONS INDEX
FEDERAL ACQUISITION REGULATION (FAR) & TRANSPORTATION ACQUISITION REGULATION (TAR)
(Updated thru FAC 2005- 09 on 04/19/2006)

FAR PROVISIONS INCORPORATED BY FULL TEXT					
PROVISION	TITLE	DATE	SECTION	SECTION TYPE	REMARKS
52.204-08	ANNUAL REPRESENTATIONS AND CERTIFICATIONS	Jan 06	D	REPS. & CERTIFICATIONS	Mandatory Contractor On-Line Input
52.211-04	AVAILABILITY FOR EXAM. OF SPECS NOT LISTED IN GSA INDEX OF FED SPECS/STANDARDS & COM. ITEM DESCRIPTION	Jun-88	E	INSTRUCTIONS TO BIDDERS	Government Fill In.
52.216-01	TYPE OF CONTRACT	Apr-84	E	INSTRUCTIONS TO BIDDERS	Government Fill In.
52.228-01	BID GUARANTEE	Sep-96	E	INSTRUCTIONS TO BIDDERS	Contractor Submittal Requirement
52.233-02	SERVICE OF PROTEST	Aug-96	E	INSTRUCTIONS TO BIDDERS	Government Fill In.
52.236-27	SITE VISIT (CONSTRUCTION)	Feb-95	E	CONSTR. CONTRACT REQS.	Government Fill In.
OTHER PROVISIONS INCORPORATED BY FULL TEXT					
PROVISION	TITLE	DATE	SECTION	SECTION TYPE	REMARKS
NONE					

(End of Provisions Index)

FEDERAL ACQUISITION REGULATION AND TRANSPORTATION ACQUISITION PROVISIONS

REPRESENTATIONS AND CERTIFICATIONS

Annual Representations and Certifications. Prospective contractors shall complete electronic annual representations and certifications on-line at this web address: <http://orca.bpn.gov> (See FAR 4.1201) in conjunction with required registration in the Central Contractor Registration (CCR) database (see FAR 4.1102).

Vets100 Form must also be filled-in online at <http://vets100.cudenver.edu/> in accordance with FAR Clause 52.222-37.

Contractors are not eligible for award without completing these requirements.

4.1201); except for the changes identified below [*offeror to insert changes, identifying change by clause number, title, date*]. These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.

FAR Clause	Title	Date	Change

Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications posted on ORCA.
(End of Provision)

52.204-8

52.204-8 – Annual Representations and Certifications.

As prescribed in 4.1202, insert the following provision:
Annual Representations and Certifications (Jan 2006)

- (a)
 - (1) The North American Industry classification System (NAICS) code for this acquisition is 237310.
 - (2) The small business size standard is **\$31,000,000**.
 - (3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.
- (b)
 - (1) If the clause at 52.204-7, Central Contractor Registration, is included in this solicitation, paragraph (c) of this provision applies.
 - (2) If the clause at 52.204-7 is not included in this solicitation, and the offeror is currently registered in CCR, and has completed the ORCA electronically, the offeror may choose to use paragraph (c) of this provision instead of completing the corresponding individual representations and certification in the solicitation. The offeror shall indicate which option applies by checking one of the following boxes:
 - (i) Paragraph (c) applies.
 - (ii) Paragraph (c) does not apply and the offeror has completed the individual representations and certifications in the solicitation.
- (c) The offeror has completed the annual representations and certifications electronically via the Online Representations and Certifications Application (ORCA) website at <http://orca.bpn.gov> . After reviewing the ORCA database information, the offeror verifies by submission of the offer that the representations and certifications currently posted electronically have been entered or updated within the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer and are incorporated in this offer by reference (see FAR

(End of Section D)

FEDERAL ACQUISITION REGULATION & TRANSPORTATION ACQUISITION REGULATION PROVISIONS

INSTRUCTIONS TO BIDDERS

52.211-4

AVAILABILITY FOR EXAMINATION OF SPECIFICATIONS NOT LISTED IN THE GSA INDEX OF FEDERAL SPECIFICATIONS, STANDARDS AND COMMERCIAL ITEM DESCRIPTIONS (JUN 1988)

The specifications cited in this solicitation are not available for distribution. However, they may be examined at the following location(s):

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
21400 RIDGETOP CIRCLE
STERLING, VIRGINIA 20166-6511

Send an email to the following address to make an appointment: eflhd.contracts@fhwa.dot.gov

TIME(S) FOR VIEWING: 8 A.M. TO 4 P.M.

All documents are available for direct download from the following website:
www.efl.fhwa.dot.gov/procurement/procurement.htm

(End of Provision)

52.216-1

TYPE OF CONTRACT (APR 1984)

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

(End of Provision)

52.233-2

SERVICE OF PROTEST (AUG 1996)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
21400 RIDGETOP CIRCLE
STERLING, VIRGINIA 20166-6511

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

(End of Provision)

52.236-27

SITE VISIT (CONSTRUCTION) (FEB 1995)

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

(b) Site visits may be arranged by contacting: **SEE CONTINUATION OF SF 1442, BLOCK 9.**
(End of Provision)

(End of Section E)

FEDERAL ACQUISITION REGULATION AND TRANSPORTATION ACQUISITION REGULATION CLAUSES

SOCIOECONOMIC PROGRAM REQUIREMENTS

52.219-4

Notice of Price Evaluation Preference for HUBZone Small Business Concerns.

(Oct 2004)

(a) *Definition.* HUBZone small business concern, as used in this clause, means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

(b) *Evaluation preference.*

(1) Offers will be evaluated by adding a factor of 10 percent to the price of all offers, except—

(i) Offers from HUBZone small business concerns that have not waived the evaluation preference;

(ii) Otherwise successful offers from small business concerns;

(iii) Otherwise successful offers of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is exceeded (see 25.402 of the Federal Acquisition Regulation (FAR)); and

(iv) Otherwise successful offers where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government.

(2) The factor of 10 percent shall be applied on a line item basis or to any group of items on which award may be made. Other evaluation factors described in the solicitation shall be applied before application of the factor.

(3) A concern that is both a HUBZone small business concern and a small disadvantaged business concern will receive the benefit of both the HUBZone small business price evaluation preference and the small disadvantaged business price evaluation adjustment (see FAR clause 52.219-23). Each applicable price evaluation preference or adjustment shall be calculated independently against an offeror's base offer. These individual preference amounts shall be added together to arrive at the total evaluated price for that offer.

(c) *Waiver of evaluation preference.* A HUBZone small business concern may elect to waive the evaluation preference, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply if the offeror has waived the evaluation preference.

Offer elects to waive the evaluation preference.

(d) *Agreement.* A HUBZone small business concern agrees

that in the performance of the contract, in the case of a contract for

(1) Services (except construction), at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern or employees of other HUBZone small business concerns;

(2) Supplies (other than procurement from a non-manufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern or other HUBZone small business concerns;

(3) General construction, at least 15 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns; or

(4) Construction by special trade contractors, at least 25 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns.

(e) A HUBZone joint venture agrees that in the performance of the contract, the applicable percentage specified in paragraph (d) of this clause will be performed by the HUBZone small business participant or participants;

(f) A HUBZone small business concern non-manufacturer agrees to furnish in performing this contract only end items manufactured or produced by HUBZone small business manufacturer concerns. This paragraph does not apply in connection with construction or service contracts.

(End of clause)

FAR SUBPART 22.9 NONDISCRIMINATION BECAUSE OF AGE (FEB 96)

22.901 Policy. Executive Order 11141, February 12, 1964 (29 CFR 2477), states that the Government policy is as follows:

(a) Contractors and subcontractors shall not, in connection with employment, advancement, or discharge of employees, or the terms, conditions, or privileges of their employment, discriminate against persons because of their age except upon the basis of a bona fide occupational qualification, retirement plan, or statutory requirement.

(b) Contractors and subcontractors, or persons acting on their behalf, shall not specify in solicitations or advertisements for employees to work on Government contracts, a maximum age limit for employment unless the specified maximum age limit is based upon a bona fide occupational qualification, retirement plan, or statutory requirement.

(c) Agencies will bring this policy to the attention of contractors. The use of contract clauses is not required.

(End of Policy Statement)

52.222-23

Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity for Construction (Feb 1999)

(a) The offeror’s attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor’s aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for Minority Participation for Each Trade	Goals for Female Participation for Each Trade
28.0%	6.9%

These goals are applicable to all the Contractor’s construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the *Federal Register* in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

(c) The Contractor’s compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on

- (1) its implementation of the Equal Opportunity clause,
- (2) specific affirmative action obligations required by the clause entitled “Affirmative Action Compliance Requirements for Construction,” and
- (3) its efforts to meet the goals.

The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a

good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor’s goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the --

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer’s identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the “covered area” is as follows:

Washington, District of Columbia

(End of Provision)

52.225-9

Buy American Act-Construction Materials. (Jan 2005)

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

“Component” means an article, material, or supply incorporated directly into a construction material.

“Construction material” means an article, material, or supply brought to the construction site by the Contractor or a subcontractor for incorporation into the building or work. The term also includes an item brought to the site pre-assembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased

directly by the Government are supplies, not construction material.

“Cost of components” means-

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the construction material (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the construction material.

“Domestic construction material” means-

(1) An un-manufactured construction material mined or produced in the United States; or

(2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which non-availability determinations have been made are treated as domestic.

“Foreign construction material” means a construction material other than a domestic construction material.

“United States” means the 50 States, the District of Columbia, and outlying areas.

(b) Domestic preference.

(1) This clause implements the Buy American Act (41 U.S.C. 10a - 10d) by providing a preference for domestic construction material. The Contractor shall use only domestic construction material in performing this contract, except as provided in paragraphs (b)(2) and (b)(3) of this clause.

(2) This requirement does not apply to the construction material or components listed by the Government as follows:

NONE

[Contracting Officer to list applicable excepted materials or indicate “none”]

(3) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(2) of this clause if the Government determines that-

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the requirements of the Buy American Act is unreasonable when the cost of such material

exceeds the cost of foreign material by more than 6 percent;

(ii) The application of the restriction of the Buy American Act to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) Request for determination of inapplicability of the Buy American Act.

(1)

(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(3) of this clause shall include adequate information for Government evaluation of the request, including-

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material,

adequate consideration is not less than the differential established in paragraph (b)(3)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American Act applies, use of foreign construction material is noncompliant with the Buy American Act.

(d) *Data*. To permit evaluation of requests under paragraph 2 of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Construction Materials Price Comparison			
Construction Material Description	Unit of Measure	Quantity	Price (Dollars)*
Item 1:			
Foreign construction material			
Domestic construction material			
Item 2:			
Foreign construction material			
Domestic construction material			
[List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.] [Include other applicable supporting information.] [* Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).]			

(End of Clause)

(End of Section F)

MINIMUM WAGE SCHEDULE

U.S. Department of Labor
Employment Standards Administration
Wage and Hour Division

GENERAL DECISION: DC20030001 10/27/2006 DC1

Date: October 27, 2006

General Decision Number: **DC20030001** 10/27/2006

Superseded General Decision Number: DC020001

State: District of Columbia

Construction Types: Heavy (Heavy and Sewer and Water Line) and Highway

County: District of Columbia Statewide.

HEAVY CONSTRUCTION PROJECTS (Including Sewer and Water Lines); HIGHWAY
CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	06/13/2003
1	10/03/2003
2	10/31/2003
3	01/02/2004
4	03/19/2004
5	04/02/2004
6	05/14/2004
7	06/11/2004
8	06/18/2004
9	06/25/2004
10	07/02/2004
11	07/09/2004
12	07/16/2004
13	08/13/2004
14	08/20/2004
15	09/17/2004
16	09/24/2004
17	10/29/2004
18	11/12/2004
19	01/21/2005
20	04/01/2005
21	05/06/2005
22	06/03/2005
23	06/10/2005
24	06/24/2005
25	07/01/2005
26	07/08/2005
27	07/22/2005
28	08/19/2005
29	08/26/2005
30	09/16/2005

31	10/28/2005
32	11/04/2005
33	11/11/2005
34	11/25/2005
35	02/03/2006
36	03/10/2006
37	05/05/2006
38	05/26/2006
39	08/04/2006
40	08/18/2006
41	08/25/2006
42	09/01/2006
43	09/08/2006
44	09/15/2006
45	10/06/2006
46	10/27/2006

ASBE0024-005 03/01/2006

	Rates	Fringes
Fire Stop Technician		
Includes the application of materials or devices within or around penetrations and openings in all rated wall or floor assemblies, in order to prevent the passage of fire, smoke or other gases. The application includes all components involved in creating the rated barrier at perimeter slab edges and exterior cavities, the head of gypsum board or concrete walls, joints between rated wall or floor components, sealing of penetrating items and blank openings.....	\$ 20.94	6.09

BOIL0193-001 10/01/2006

	Rates	Fringes
Boilermaker.....	\$ 32.06	16.46

BRDC0001-001 04/30/2006

	Rates	Fringes
Bricklayer.....	\$ 25.90	6.19

CARP0132-001 05/01/2006

	Rates	Fringes
Carpenter/Lather.....	\$ 23.37	5.75

Piledriver.....	\$ 22.47	6.00

CARP0132-003 05/01/2004		
	Rates	Fringes
Diver Tender.....	\$ 20.85	5.50
Diver.....	\$ 29.63	5.50

CARP1831-001 04/01/2003		
	Rates	Fringes
Millwright.....	\$ 24.34	4.05

ELEC0026-001 06/05/2006		
	Rates	Fringes
Electrician.....	\$ 31.45	10.35+3%+a
<p>a. PAID HOLIDAYS: New Year's Day, Martin Luther King Jr.'s Birthday, Inauguration Day, Memorial Day, Fourth of July, Labor Day, Veterans Day, Thanksgiving Day, the day after Thanksgiving and Christmas Day or days designated as legal holidays by the Federal Government.</p>		

ELEC0026-008 07/01/2003		
	Rates	Fringes
Motor Repairmen Removal and reinstallation of electrical motors.....	\$ 23.69	7.73+3%+a
<p>a. PAID HOLIDAYS: New Year's Day, Martin Luther King Jr.'s Birthday, Inauguration Day, Memorial Day, Fourth of July, Labor Day, Veterans Day, Thanksgiving Day, the day after Thanksgiving and Christmas Day or days designated as legal holidays by the Federal Government.</p>		

ELEC0070-001 01/01/2006		
	Rates	Fringes
Line Construction:		
Groundmen.....	\$ 12.03	4.75+18.75%
Linemen, Cable Splicers, Equipment Operators.....	\$ 25.50	4.75+18.75%
Truck with winch.....	\$ 12.35	4.75+18.75%

ENGI0077-001 05/01/2006		
	Rates	Fringes
Power equipment operators: (HEAVY AND HIGHWAY CONSTRUCTION)		
GROUP 1.....	\$ 26.69	6.42+a+b
GROUP 2.....	\$ 26.23	6.42+a+b
GROUP 3.....	\$ 25.52	6.42+a
GROUP 4.....	\$ 23.49	6.42+a
GROUP 5.....	\$ 18.95	6.42+a
GROUP 6.....	\$ 28.06	6.42+a

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: 35 ton cranes & above, tower & climbing cranes, derricks, concrete boom pump, drill rigs (equivalent to L & Double L), mole.

GROUP 2: Backhoes, cableways, cranes, cherry pickers, elevating graders, hoists, paving mixers, power shovels, tunnel shovels. batch plants, shields, tunnel mining machines, gradalls, front end loaders, 3 1/2 cu. yds. and above, power driven wheel scoops and scrapers (50 cu. yds. struck capacity or above), rail tamper, draglines, boomcat, mucking machines, graders in tunnels, pile driving engines.

GROUP 3: Front end loaders below 3 1/2 cu. yds, boom trucks, hydraulic backhoes 1/2 yds. capacity or below rubber or track mounted, tug boats, power driven wheel scoops & scrapers, blade graders, motor graders, bulldozers, trenching machines, concrete mixer, speed swing pettibone, ballast regulator, concrete pump, mechanic, welder, mechanic welder, shotcrete machines, Hoeram, locomotive (standard, narrow gauge), tuggers.

GROUP 4: High lifts above 10 feet, boilers (skelton), asphalt spreaders, bullfloat finishing machines, concrete finishing machines, concrete spreaders, fine graders, air compressors, welding machines, pumps, generators, well points, deep wells, hydraulic pumps, elevators, freeze uniits, tunnel motorman or dinky operator, roller, conveyors, well drilling machines, grout pump, fireman.

GROUP 5: Fork lifts, ditch witch, bobcat 1/3 cu. yd. and below, space heaters, sweepers, assistant engineers, oilers.

GROUP 6: Master mechanic.

a. PAID HOLIDAYS: New Years Day, Inaugural Day, Decoration Day, Independence Day, Labor Day, Martin Luther King's Birthday, Veterans' Day, Thanksgiving Day, Friday after Thanksgiving and Christmas Day.

b. PREMIUM PAY: Tower cranes and cranes 100-ton and over to receive \$1.00 per hour premium over Group One.

 ENGI0077-002 06/01/2006

	Rates	Fringes
Power equipment operators: (PAVING AND INCIDENTAL GRADING)		
GROUP 1.....	\$ 21.50	5.25
GROUP 2.....	\$ 19.05	5.25
GROUP 3.....	\$ 17.80	5.25

GROUP 4.....	\$ 16.59	5.25
GROUP 5.....	\$ 15.35	5.25
GROUP 6.....	\$ 21.45	5.25

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Gradall operator, Crane.

GROUP 2: Boom Truck, Milling Machine, Excavator, Rubber Tire Backhoe, Asphalt Paver, Asphalt Plant Engineer.

GROUP 3: Motor Grader, Track Loader, Rubber Tire Loader, Track Dozer, Concrete Paver.

GROUP 4: Broom Truck, Asphalt Roller.

GROUP 5: Air Compressor, Grade Rollers.

GROUP 6: Mechanic.

 ENGI0077-003 07/01/2006

	Rates	Fringes
Power equipment operators: (SEWER, GAS AND WATER LINE CONSTRUCTION)		
GROUP 1.....	\$ 19.43	5.12+a
GROUP 2.....	\$ 19.03	5.12+a
GROUP 3.....	\$ 18.88	5.12+a
GROUP 4.....	\$ 18.80	5.12+a
GROUP 5.....	\$ 18.69	5.12+a
GROUP 6.....	\$ 18.52	5.12+a
GROUP 7.....	\$ 18.62	5.12+a
GROUP 8.....	\$ 18.52	5.12+a
GROUP 9.....	\$ 19.06	5.12+a
GROUP 10.....	\$ 18.41	5.12+a
GROUP 11.....	\$ 18.29	5.12+a
GROUP 12.....	\$ 18.20	5.12+a

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Backhoes, Cableways, Cranes, Derricks, Draglines, Power Shovels, Tunnel Shovels, Tunnel Mucking Machines (1 cubic yard capacity or above).

GROUP 2: Backhoes, Boom Cats, Cableways, Cranes, Derricks, Draglines, Elevating Graders, Hoists, Paving Mixers, Pile Driving Engines, Power and Tunnel Shovels, Tunnel Mucking Machines, Batch Plant, Concrete Pumps.

GROUP 3: Operators of Hydraulic Backhoes of below 1/2 yard capacity.

GROUP 4. Trenching machines above 83 inches.

GROUP 5: Trenching machines (up to & including 83"), Boilers (Skelton), Well Drilling Machines.

GROUP 6: Air Compressors (Tunnel).

GROUP 7: Front-end Loaders (Hi-Lift) and Bulldozers on Sewer and Water Line Work.

GROUP 8: Concrete Mixers, Power Driven Wheel Scoops and Scrapers, Blade graders, Motor Graders, Tunnel Mechanics, Tunnel Motormen.

GROUP 9: Mechanics.

GROUP 10: Bulldozers, Hydraulic Tamper and Hoe Pack Operators.

GROUP 11: Rollers.

GROUP 12: Air Compressors, Pumps, Welding Machines, Well Points.

a. PAID HOLIDAYS: New Year's Day, Inaugural Day, Washington's Birthday, Decoration Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day and Martin Luther King's Birthday.

IRON0005-001 06/01/2006

	Rates	Fringes
Ironworkers:		
Structural, Ornamental and		
Chain Link Fence.....	\$ 25.68	11.345

IRON0201-001 05/01/2006

	Rates	Fringes
Ironworkers:		
Reinforcing.....	\$ 23.45	12.08

LABO0456-002 06/01/2004

	Rates	Fringes
Laborers: (PAVING & INCIDENTAL GRADING)		
Asphalt Raker, Concrete		
Saw Operator.....	\$ 15.66	4.00
Asphalt Shoveler.....	\$ 15.17	4.00
Asphalt Tammer, Concrete		
Shoveler.....	\$ 15.39	4.00
Jack Hammer.....	\$ 15.57	4.00
Laborer.....	\$ 15.06	4.00
Sand Setter, Form Setter....	\$ 16.24	4.00

LABO0456-006 06/01/2006

	Rates	Fringes
Laborers: (BRICK MASONRY WORK)		
Mason Tenders.....	\$ 13.91	3.84
Scaffold Builders, Mortarmen and Small Equipment Operators.....	\$ 14.65	3.84

 * LABO0657-003 06/01/2006

	Rates	Fringes
Laborers: (HEAVY AND HIGHWAY AND SEWER & WATER LINES CONSTRUCTION)		
GROUP 1.....	\$ 19.18	3.84
GROUP 2.....	\$ 19.46	3.84
GROUP 3.....	\$ 19.61	3.84
GROUP 4.....	\$ 19.75	3.84
GROUP 5.....	\$ 20.15	3.84
GROUP 6.....	\$ 20.64	3.84
GROUP 7.....	\$ 21.11	3.84
GROUP 8.....	\$ 21.77	3.84

LABORERS CLASSIFICATIONS:

GROUP 1: Carloaders, choker setter, concrete crewman, crushed feeder, demolition laborers, including salvaging all material, loading, cleaning up, wrecking, dumpmen, flagmen, fence erector and installer (other than chain link), including installation and erection of fence, guard rails, medial rails, reference posts, guide posts and right-of-way markers, form strippers, general laborers, railroad track laborers, riprap man, scale man, stake jumper, structure mover, includes foundation, separation, preparation, cribbing, shoring, jacking and unloading of structures, water nozzleman, timber bucket and faller, truck loader, water boys, tool room men.

GROUP 2: Combined air and water nozzleman, cement handler, dope pot fireman (nonmechanical), form cleaning machine, mechanical railroad equipment (includes spiker, puller, tile cleaner, tamper, pipe wrapper, power driven wheelbarrows, operators of hand derricks, towmasters, scootcretes, buggymobiles and similar equipment), tamper or rammer operator, trestle scaffold builders over one tier high, power tool operator (gas, electric or pneumatic), sandblast or gunnite tailhose man, scaffold erector, (steel or wood), vibrator operator (up to 4 feet), asphalt cutter, mortar men, shorer and lagger, creosote material handler, corrosive enamel or equl, paver breaker and jackhammer operators.

GROUP 3: Multi-section pipe layer, non-metallic clay and concrete pipe layer (including caulker, collarman, jointer, rigger and jacker, thermal welder and corrugated metal culvert

pipe layer.

GROUP 4: Asphalt block pneumatic cutter, asphalt roller, walker, chainsaw operator with attachment, concrete saw (walking), high scalers, jackhammer operator (using over 6 feet of steel), vibrator operator (4 feet and over), well point installer, air trac operator.

GROUP 5: Asphalt screeder, big drills, cut of the hole drills (1 1/2 " piston or larger), down the hole drills (3 1/2" piston or larger) gunnite or sandblaster nozzle man, asphalt raker, asphalt tamper, form setter, demolition torch operator, shotcrete nozzle men and potman.

GROUP 6: Powderman, master form setters.

GROUP 7: Brick paver (asphalt block paver, asphalt block sawman, asphalt block grinder, hastings block or similar type)

GROUP 8: Licensed powdermen.

* LABO0657-004 06/01/2006

	Rates	Fringes
Laborers: (HAZARDOUS WASTE REMOVAL, EXCEPT ON MECHANICAL SYSTEMS:		
Preparation for, removing and encapsulation of hazardous materials from non-mechanical systems)		
Skilled Asbestos Abatement Laborers.....	\$ 15.99	3.84
Skilled Toxic and Hazardous Waste Removal Laborers.....	\$ 18.61	3.84

* LABO0657-005 06/01/2006

	Rates	Fringes
Laborers: (TUNNEL, RAISE & SHAFT (FREE AIR)		
FOR HEAVY AND SEWER & WATER LINES CONSTRUCTION)		
GROUP 1.....	\$ 19.82	3.84
GROUP 2.....	\$ 20.39	3.84
GROUP 3.....	\$ 21.85	3.84
GROUP 4.....	\$ 22.47	3.84

LABORERS CLASSIFICATIONS:

GROUP 1: Brakeman, Bull Gang, Dumper, Trackmen, Concrete Man.

GROUP 2: Chuck Tender, Powdermen in Prime House, Form Setters and Movers, Nippers, Cableman, Houseman, Groutman, Bell or Signalman, Top or Bottom Vibrator Operator.

GROUP 3: Miners, Re-Bar Underground, Concrete or Gunnite Nozzlemen, Powdermen, Timbermen and Re-Timbermen, Wood Steel Including Liner plate or Other Support, Material Motorman, Caulkers, Diamond Drill Operators, Riggers, Cement Finishers-Underground, Welders and Burners, Shield Driver, Air Trac Operator, Shotcrete Nozzlemen and Potman.

GROUP 4: Mucking Machine Operator (Air).

* LABO0657-006 06/01/2006

	Rates	Fringes
Laborers: (TUNNEL, RAISE AND SHAFT (COMPRESSED AIR) FOR HEAVY CONSTRUCTION ONLY		

Gauge Pressure Work Period

(Pounds)	(Hours)		
1-14	7.....	\$ 24.16	3.84
14-18	6.....	\$ 28.43	3.84

FOOTNOTE: On any requirement for air pressure in excess of 18 PSI, work periods and rates should be negotiated at a pre-bid conference.

MARB0002-003 05/01/2006

	Rates	Fringes
Marble & Stone Mason Includes Pointing, Caulking and Cleaning of All Types of Masonry, Brick, Stone and Cement Structures.....	\$ 29.87	11.15

MARB0003-001 05/01/2006

	Rates	Fringes
Mosaic & Terrazzo Worker, Tile Layer		
Marble Mason and Tile Layer.	\$ 24.32	8.78
Terrazzo Worker.....	\$ 25.07	8.78

 MARB0003-004 05/01/2006

	Rates	Fringes
Marble, Tile & Terrazzo Finisher.....	\$ 19.59	7.90

PAIN0051-001 06/01/2006

	Rates	Fringes
Painters:		
All Industrial Work.....	\$ 23.48	7.31
Bridges, Heavy Highway, Lead Abatement and Flame/Thermal Spray.....	\$ 26.37	7.31
Commercial and Mold Remediation, Painters, Wallcovers and Drywall Finishers.....	\$ 22.06	7.31
Metal Polishing and Refinishing.....	\$ 23.06	7.31

PLAS0891-001 05/01/2006

	Rates	Fringes
Cement Masons: HEAVY CONSTRUCTION ONLY.....	\$ 25.45	5.46

PLAS0891-002 06/01/2004

	Rates	Fringes
Cement Masons: (PAVING & INCIDENTAL GRADING)		
Cement Masons.....	\$ 16.25	4.10
Concrete Saw Operators.....	\$ 16.25	4.10
Form Setters.....	\$ 16.25	4.10

PLUM0005-001 08/01/2006

	Rates	Fringes
Plumber.....	\$ 31.52	12.59+a

a. PAID HOLIDAYS: Labor Day, Veterans' Day, Thanksgiving Day and the day after Thanksgiving, Christmas Day, New Year's Day, Martin Luther King's Birthday, Memorial Day and the Fourth of July.

PLUM0602-005 08/01/2006

	Rates	Fringes
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Steamfitter, Refrigeration &
Air Conditioning Mechanic.....\$ 31.27 12.82+a

a. PAID HOLIDAYS: New Year's Day, Martin Luther King's
Birthday, Memorial Day, Independence Day, Labor Day,
Veterans Day, Thanksgiving Day and the day after
Thanksgiving and Christmas Day.

SHEE0100-001 07/01/2006

	Rates	Fringes
Sheet Metal Worker.....	\$ 30.39	11.05

TEAM0639-001 03/07/2004

	Rates	Fringes
Truck drivers: (HEAVY & HIGHWAY CONSTRUCTION) Tandem & Triaxle (3 or more axles, including steering axle).....	\$ 16.00	5.82+a
Tractor-trailer, Low Boy....	\$ 20.00	5.82+a

a. VACATION: Employees will receive one (1) week's paid
vacation after one (1) year of service.

TEAM0639-002 06/01/2005

	Rates	Fringes
Truck drivers: (HEAVY & HIGHWAY CONSTRUCTION) Concrete Mixer Drivers.....	\$ 17.40	5.82+a+b

a. PAID HOLIDAYS: New Year's Day, Martin Luther King, Jr.
Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day,
Christmas Day, or any day celebrated publicly in the
District of Columbia as one of the above holidays.

b. PAID VACATIONS: Employees with one (1) year of service
shall be entitled to a vacation of one (1) week; five (3)
years of service are entitled to two (2) weeks; fifteen(10)
years of service are entitled to three 3 weeks; twenty (20)
years of service are entitled to four (4) weeks.

TEAM0639-005 09/01/2006

	Rates	Fringes
Truck drivers: (PAVING & INCIDENTAL GRADING) All paving projects where		

the grading is incidental	
to the paving.....\$ 14.05	3.69

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

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

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

WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

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

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator

(See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

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

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

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

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

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

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END OF GENERAL DECISION

FEDERAL ACQUISITION REGULATION AND TRANSPORTATION ACQUISITION REGULATION CLAUSES

GENERAL CONTRACT REQUIREMENTS

52.223-3

Hazardous Material Identification and Material Safety Data. (Jan 1997) Alt I (Jul 1995)

(a) "Hazardous material," as used in this clause, includes any material defined as hazardous under the latest version of Federal Standard No. 313 (including revisions adopted during the term of the contract).

(b) The offeror must list any hazardous material, as defined in paragraph (a) of this clause, to be delivered under this contract. The hazardous material shall be properly identified and include any applicable identification number, such as National Stock Number or Special Item Number. This information shall also be included on the Material Safety Data Sheet submitted under this contract.

Material (If none, insert "None")	Identification No.
NONE	

(c) This list must be updated during performance of the contract whenever the Contractor determines that any other material to be delivered under this contract is hazardous.

(d) The apparently successful offeror agrees to submit, for each item as required prior to award, a Material Safety Data Sheet, meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous material identified in paragraph (b) of this clause. Data shall be submitted in accordance with Federal Standard No. 313, whether or not the apparently successful offeror is the actual manufacturer of these items. Failure to submit the Material Safety Data Sheet prior to award may result in the apparently successful offeror being considered non-responsible and ineligible for award.

(e) If, after award, there is a change in the composition of the item(s) or a revision to Federal Standard No. 313, which renders incomplete or inaccurate the data submitted under paragraph (d) of this clause, the Contractor shall promptly notify the Contracting Officer and resubmit the data.

(f) Neither the requirements of this clause nor any act or failure to act by the Government shall relieve the Contractor of any responsibility or liability for the safety of Government, Contractor, or subcontractor personnel or property.

(g) Nothing contained in this clause shall relieve the Contractor from complying with applicable Federal, State, and local laws, codes, ordinances, and regulations

(including the obtaining of licenses and permits) in connection with hazardous material.

(h) The Government's rights in data furnished under this contract with respect to hazardous material are as follows:

(1) To use, duplicate and disclose any data to which this clause is applicable. The purposes of this right are to-

(i) Apprise personnel of the hazards to which they may be exposed in using, handling, packaging, transporting, or disposing of hazardous materials;

(ii) Obtain medical treatment for those affected by the material; and

(iii) Have others use, duplicate, and disclose the data for the Government for these purposes.

(2) To use, duplicate, and disclose data furnished under this clause, in accordance with paragraph (h)(1) of this clause, in precedence over any other clause of this contract providing for rights in data.

(3) The Government is not precluded from using similar or identical data acquired from other sources.

(i) Except as provided in paragraph (i)(2), the Contractor shall prepare and submit a sufficient number of Material Safety Data Sheets (MSDS's), meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous materials identified in paragraph (b) of this clause.

(1) For items shipped to consignees, the Contractor shall include a copy of the MSDS's with the packing list or other suitable shipping document, which accompanies each shipment. Alternatively, the Contractor is permitted to transmit MSDS's to consignees in advance of receipt of shipments by consignees, if authorized in writing by the Contracting Officer.

(2) For items shipped to consignees identified by mailing address as agency depots, distribution centers or customer supply centers, the Contractor shall provide one copy of the MSDS's in or on each shipping container. If affixed to the outside of each container, the MSDS's must be placed in a weather resistant envelope.

(End of Clause)

52.223-9

**Estimate of Percentage of Recovered Material Content
for EPA-Designated Products.
(AUG 2000)**

(a) Definitions. As used in this clause— “Post consumer material” means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Post consumer material is a part of the broader category of “recovered material.” “Recovered material” means waste materials and by-products recovered or diverted from solid waste, but the term does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process.

(b) The Contractor, on completion of this contract, shall—

(1) Estimate the percentage of the total recovered material used in contract performance, including, if applicable, the percentage of post consumer material content; and

(2) Submit this estimate to:

**Contracting Officer
Eastern Federal Lands Highway Division
21400 Ridgetop Circle
Sterling, VA 20166.**

(End of Clause)

52.248-3 -- Value Engineering – Construction.

As prescribed in [48.202](#), insert the following clause:

Value Engineering -- Construction (Feb 2000)

(a) *General.* The Contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECP’s) voluntarily. The Contractor shall share in any instant contract savings realized from accepted VECP’s, in accordance with paragraph (f) below.

(b) *Definitions.* “Collateral costs,” as used in this clause, means agency costs of operation, maintenance, logistic support, or Government-furnished property.

“Collateral savings,” as used in this clause, means those measurable net reductions resulting from a VECP in the agency’s overall projected collateral costs, exclusive of acquisition savings, whether or not the acquisition cost changes.

“Contractor’s development and implementation costs,” as used in this clause, means those costs the Contractor incurs on a VECP specifically in developing, testing, preparing, and submitting the VECP, as well as those costs the Contractor incurs to make the contractual changes required by Government acceptance of a VECP.

“Government costs,” as used in this clause, means those agency costs that result directly from developing and implementing the VECP, such as any net increases in the cost of testing, operations, maintenance, and logistic support. The term does not include the normal administrative costs of processing the VECP.

“Instant contract savings,” as used in this clause, means the estimated reduction in Contractor cost of performance resulting from acceptance of the VECP, minus allowable Contractor’s development and implementation costs, including subcontractors’ development and implementation costs (see paragraph (h) below).

“Value engineering change proposal (VECP)” means a proposal that --

(1) Requires a change to this, the instant contract, to implement; and

(2) Results in reducing the contract price or estimated cost without impairing essential functions or characteristics; provided, that it does not involve a change-

- (i) In deliverable end item quantities only; or
- (ii) To the contract type only.

(c) *VECP preparation.* As a minimum, the Contractor shall include in each VECP the information described in subparagraphs (c)(1) through (7) below. If the proposed change is affected by contractually required configuration management or similar procedures, the instructions in those procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:

(1) A description of the difference between the existing contract requirement and that proposed, the comparative advantages and disadvantages of each, a justification when an item’s function or characteristics are being altered, and the effect of the change on the end item’s performance.

(2) A list and analysis of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revisions.

(3) A separate, detailed cost estimate for

(i) the affected portions of the existing contract requirement and

(ii) the VECP.

The cost reduction associated with the VECP shall take into account the Contractor’s allowable development and implementation costs, including any amount attributable to subcontracts under paragraph (h) below.

(4) A description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.

(5) A prediction of any effects the proposed change would have on collateral costs to the agency.

(6) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.

(7) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known.

(d) *Submission.* The Contractor shall submit VECP's to the Resident Engineer at the worksite, with a copy to the Contracting Officer.

(e) *Government action.*

(1) The Contracting Officer will notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required, the Contracting Officer will notify the Contractor within the 45-day period and provide the reason for the delay and the expected date of the decision. The Government will process VECP's expeditiously; however, it will not be liable for any delay in acting upon a VECP.

(2) If the VECP is not accepted, the Contracting Officer will notify the Contractor in writing, explaining the reasons for rejection. The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the Government. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.

(3) Any VECP may be accepted, in whole or in part, by the Contracting Officer's award of a modification to this contract citing this clause. The Contracting Officer may accept the VECP, even though an agreement on price reduction has not been reached, by issuing the Contractor a notice to proceed with the change. Until a notice to proceed is issued or a contract modification applies a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The decision to accept or reject all or part of any VECP is a unilateral decision made solely at the discretion of the Contracting Officer.

(f) *Sharing --*

(1) *Rates.* The Government's share of savings is determined by subtracting Government costs from instant contract savings and multiplying the result by --

- (i) 45 percent for fixed-price contracts; or
- (ii) 75 percent for cost-reimbursement contracts.

(2) *Payment.* Payment of any share due the Contractor for use of a VECP on this contract shall be authorized by a modification to this contract to --

(i) Accept the VECP;

(ii) Reduce the contract price or estimated cost by the amount of instant contract savings; and

(iii) Provide the Contractor's share of savings by adding the amount calculated to the contract price or fee.

(g) *Collateral savings.* If a VECP is accepted, the Contracting Officer will increase the instant contract amount by 20 percent of any projected collateral savings determined to be realized in a typical year of use after subtracting any Government costs not previously offset. However, the Contractor's share of collateral savings will not exceed the contract's firm-fixed-price or estimated cost, at the time the VECP is accepted, or \$100,000, whichever is greater. The Contracting Officer is the sole determiner of the amount of collateral savings.

(h) *Subcontracts.* The Contractor shall include an appropriate value engineering clause in any subcontract of \$50,000 or more and may include one in subcontracts of lesser value. In computing any adjustment in this contract's price under paragraph (f) above, the Contractor's allowable development and implementation costs shall include any subcontractor's allowable development and implementation costs clearly resulting from a VECP accepted by the Government under this contract, but shall exclude any value engineering incentive payments to a subcontractor. The Contractor may choose any arrangement for subcontractor value engineering incentive payments; *provided*, that these payments shall not reduce the Government's share of the savings resulting from the VECP.

(i) *Data.* The Contractor may restrict the Government's right to use any part of a VECP or the supporting data by marking the following legend on the affected parts:

These data, furnished under the Value Engineering -- Construction clause of contract **DTFH71-0X-B-000XX**, shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a value engineering change proposal submitted under the clause. This restriction does not limit the Government's right to use information contained in these data if it has been obtained or is otherwise available from the Contractor or from another source without limitations.

(End of Section G)

FEDERAL ACQUISITION REGULATION AND TRANSPORTATION ACQUISITION REGULATION CLAUSES

CONSTRUCTION CONTRACT REQUIREMENTS

52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall be required to (a) commence work under this contract within **(SEE SF 1442, BLOCK 11 FOR NUMBER OF DAYS)** calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than **(THE TIME INDICATED IN THE CONTINUATION OF THE SF 1442, BLOCK 11)**. The time stated for completion shall include final cleanup of the premises. **(End of Clause)**.

52.211-12 LIQUIDATED DAMAGES--CONSTRUCTION (SEPT 2000)

(a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of **(SEE SUBSECTION 108.04 OF THE FP-96 AND/OR SPECIAL CONTRACT REQUIREMENTS FOR AMOUNT)** for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause. **(End of Clause)**

52.211-18 -- Variation in Estimated Quantity.

As prescribed in [11.703\(c\)](#), insert the following clause in solicitations and contracts when a fixed-price construction contract is contemplated that authorizes a variation in the estimated quantity of unit-priced items:

Variation in Estimated Quantity (Apr 1984)

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

extension, the Contracting Officer shall ascertain the facts and make an adjustment for extending the completion date as, in the judgement of the Contracting Officer, is justified. **(End of Clause)**

52.236-1 PERFORMANCE OF WORK BY THE CONTRACTOR. (Apr 1984)

The Contractor shall perform on the site, and with its own organization, work equivalent to at least **50** percent of the total amount of work to be performed under the contract. This percentage may be reduced by a supplemental agreement to this contract if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government.

(End of Clause)

52.236-4 PHYSICAL DATA (APR 1984)

Data and information furnished or referred to below is for the Contractor's information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

(a) The indications of physical conditions on the drawings and in the specifications are the result of site investigations **(SEE CONTINUATION OF SF 1442, BLOCK 9)**.

(b) Weather conditions: **CONTACT LOCAL OFFICE OF NATIONAL WEATHER SERVICE, U.S. DEPARTMENT OF COMMERCE.**

(c) Transportation facilities: **N/A**

(d) Other Information: **SEE CONTINUATION OF SF 1442, BLOCK 9.**

(End of Clause)

(End of Section H)

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
SPECIAL CONTRACT REQUIREMENTS

Project PRA – ROCR 3A5, 204 (1)
ROCK CREEK AND POTOMAC PARKWAY

The following Special Contract Requirements amend and supplement the Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-96, (English Units) U.S. Department of Transportation, Federal Highway Administration.

Section 101.--TERMS, FORMAT, AND DEFINITIONS

101.01. Delete the last paragraph.

101.02. Delete the third and fourth paragraphs and substitute the following:

Division 150 consists of project contract requirements that are applicable to all contracts. Work under Division 150 is paid for directly or indirectly according to Subsection 109.05 and the Section ordering the work. When there is no pay item in the bid schedule, no direct payment is made.

Divisions 200 through 600 consist of construction contract requirements for specific items of work. Work under these Divisions is paid for directly or indirectly according to Subsection 109.05 and the Section ordering the work.

101.03. Add the following:

IPCEA - Insulated Power Cable Engineers Association

Section 102.--BID, AWARD, AND EXECUTION OF CONTRACT

102.03 (a) Delete the first sentence and substitute the following:

Submit a bid guarantee of 20 percent of the amount of the bid or \$3 million, whichever is less.

102.04. Add the following:

Furnish documentary evidence as to the ownership and value of the assets pledged in support of the bond and details of the security interest in the assets by the individual sureties for the apparent low bidder within 14 calendar days after the opening of bids. Failure to submit evidence within the time required will be grounds for declaring the surety unacceptable.

In addition, the CO may, after reviewing the Affidavit of Individual Surety and documentary information on the security interest and the assets pledged, by certified mail to the surety's business or residence address (as shown on the bond), request the surety to provide further information and/or documents with respect to any of the documents provided. The CO may require such information to be furnished under oath. Failure of the surety to accept such mail, or failure of the surety to respond with the requested information or documents within 7 business days of receipt of the request, will be cause for rejection of the surety.

102.06. Delete the first paragraph including lines (a), (b), and (c), and substitute the following:

102.06 Performance and Payment Bonds. FAR Clause 52.228-15 - Performance and Payment Bonds — Construction is supplemented as follows.

Furnish a performance bond and a payment bond in the penal amounts of 100 percent of the original contract price.

102.06. Add the following after the last paragraph:

Submit the documentary evidence for individual sureties at the same time as the Affidavit of Individual Surety and security interest in assets pledged. A Contractor submitting an unacceptable individual surety in satisfaction of a performance or payment bond before the issuance of the Notice to Proceed will be permitted one opportunity to substitute an acceptable surety or sureties within 7 business days of receipt of notification that the surety is unacceptable.

The Government's right to direct the substitution of sureties to ensure the continuing acceptability of the bonds during the performance of the Contract according to FAR Clause 52.228-2, Additional Bond Security, is not restricted.

Section 103.-- SCOPE OF WORK

103.03. Delete the second paragraph and substitute the following:

Before undertaking significant expenditures, provide the CO with a written description of the value engineering change proposal (VECP) concept. Within 14 days, the CO will inform the Contractor as to whether the concept appears to be viable or if the concept is unacceptable. If the CO indicates that the concept appears to be viable, prepare and submit the formal VECP proposal.

103.05. Delete the last sentence of the fourth paragraph and substitute the following:

The Government's share will not exceed \$5,000.

Section 104.--CONTROL OF WORK

104.03 Specifications and Drawings. Delete the entire subsection and substitute the following:

104.03 Specifications and Drawings. FAR Clause 52.236-21 – Specifications and Drawings for Construction is supplemented as follows:

General. Prepare drawings as necessary to adequately construct the work. Drawings include, but are not limited to, layouts that show the relative position (vertical and horizontal, as appropriate) of work to be performed, fabrication details for manufactured items and assemblies, installation and erection procedures, details of post-tensioning and other systems, detailed trench and excavation procedures that conform to OSHA requirements, traffic control implementation drawings, and methods for performing work near existing structures or other areas to be protected. Show all the drawing dimensions in English units.

Limit drawings to a maximum size of 24 by 36 inches. Include on each drawing and calculation sheet, the project number, name, and other identification as shown in the contract.

Furnish 5 sets of drawings and supporting calculations for acceptance before performing work covered by the drawings. If drawings are returned for revision, correct and resubmit for acceptance. Allow 40 days per submission for railroad structures and 30 days per submission for all other structures. If drawings must be resubmitted, the time for acceptance starts over. Obtain

prior written approval for changes or deviations from accepted drawings.

(b) Specific requirements for concrete and miscellaneous structures. Drawings will be reviewed in the order they are received. The review time as specified in (a) above is applied separately to each drawing submitted. The CO may request additional specific drawings for unique situations in order to clarify layout, construction details, or methodology.

(1) Furnish drawings for the following:

- (a) Site-specific layouts for all wall types and gabion installations.
- (b) Gabion and revet mattress details and installation procedures.
- (c) Forms and falsework for reinforced concrete box culverts less than or equal to 6 feet in height.
- (d) Fabrication drawings for bridge railings and parapets.
- (e) Fabrication drawings for prestressed members.
- (f) Fabrication and installation drawings for expansion joint assemblies.
- (g) Fabrication drawings for bearing assemblies.
- (h) Construction joint location and concrete deck placement sequences not shown on the plans.
- (i) Erection diagrams for Soil-Corrugated Metal Structure interaction systems (multi-plate structures).
- (j) Structural steel fabrication drawings.
- (k) Utility hangar details.
- (l) Detour layouts.
- (m) Fabrication and installation drawings for precast items.

(2) Furnish drawings which bear the seal and signature of a professional engineer proficient in the pertinent design field for the following:

- (a) Erection plans.
- (b) Reinforced soil slopes details.
- (c) MSE wall and crib wall details.
- (d) Details and installation procedures for proprietary wall systems.
- (e) Temporary bridge structures.
- (f) All bridge forms except for railings, parapets, and components less than 6 feet in height.
- (g) Shoring systems and cofferdams greater than 6 feet in height.
- (h) All shoring systems that support traffic loadings.
- (i) Forms and falsework for all structures greater than 6 feet in height.
- (j) Post-tensioning systems.
- (k) Ground anchors, soil nail, and rock bolt assembly details, layout, and installation and testing procedures.
- (l) Tie back wall details.
- (m) Alternate retaining wall details.

(3) Furnish drawings which bear the seal and signature of a professional engineer proficient in forms and falsework design, and who is licensed in the state where the project will be constructed, for the following:

- (a) Falsework for any structure with a span exceeding 16 feet.
- (b) Falsework for any structure with a height exceeding 14 feet.
- (c) Falsework for structures where traffic, other than workers involved in constructing the structure will travel under the structure.

(c) As-built working drawings. Furnish 2 sets of as-built working drawings. The Government will provide 2 sets of contract drawings to be used exclusively for recording the as-built details of the project.

Keep the as-built working drawings current on a weekly basis and have at least 1 set available on the jobsite at all times. Accurately and neatly record changes from the contract plans, which are made in the work, or additional information, which might be uncovered in the course of construction, as they occur by means of details and notes. Maintain a log of all changes made to the as-builts, and monthly, at the estimate cutoff date, make the as-builts and log available for review by the CO.

Note all additions or revisions to the location, character, and dimensions of the prescribed work shown on the contract drawings. Line out all details shown that are not applicable to the completed work. Use the red-line process (red pencil or red ink) to record on the working and final as-built drawings, as a minimum, but not limited to, the information described below:

(1) Typical section(s)

- (a) Revisions in dimensions; and
- (b) Revisions in materials.

(2) Plan and profile

(a) Plan

- (1) Revisions to the alignment;
- (2) Changes in the construction limits;
- (3) Revisions in location, type, and grade of road approaches;
- (4) Location and type of utilities;
- (5) Location, size, and type of underdrains;
- (6) Skew of culverts;
- (7) Channel changes;
- (8) Location of monuments and permanent references;
- (9) Elevations for all aerial and underground crossings of utilities; and

(10) Location, length, and type of fencing.

(b) Profile

(1) Revisions to grades, elevations, and stationing of intersection PIs;

(2) Equations;

(3) Culvert diameter, length, type, and stationing;

(4) Length of culvert extension. and length of existing culvert;

(5) Location, length, stationing, and type of retaining walls; and

(6) Location, length, stationing, and end treatment of guardrail.

(3) Bridge

(a) Stationing of bridge ends;

(b) Elevations including footing, bearing pads, deck, and top of walls;

(c) Pile driving record with pile length, size, type, and tip elevation;

(d) Post-tensioning records including stressing sequence, jacking force, and duct size & layout;

(e) Construction and concrete placement sequences;

(f) Bearing details with orientation;

(g) Expansion joints including actual clearance with atmospheric temperature;

(h) Any changes in plan or dimensions including any major changes in reinforcing.

(4) Miscellaneous

(a) Revisions to parking areas or turnouts;

(b) Final location, type and length of curbs, sidewalks, etc.;

(c) Fencing type and limits; and

(d) Landscaping and planting

(5) Special Contract Procedures

(a) Method of excavation, concrete placement, girder erection, structure repairs, etc

Prepare final as-built drawings after the completion of each definable feature of work as listed in the Contractor Quality Control Plan (Foundations, Utilities, Structural Steel, etc., as appropriate for the project). The as-built working drawings and final as-built drawings will be jointly reviewed for accuracy and completeness by the CO and the Contractor prior to submission of each monthly pay estimate.

If the monthly review finds that the Contractor is not maintaining the as-builts, payment of the Contractor's invoice will be withheld until the as-builts are brought up to date.

Furnish the as-built working drawings to the CO before the final inspection. Correct all details found during the final inspection that are not shown on the as-built drawings and return to the CO within 5 working days for approval.

No direct payment will be made for maintaining and furnishing as-built working drawings.

104.05. Add the following:

When hauling on National Park Service roads, do not exceed the following load restrictions:

<u>Single Units</u>	<u>Gross Vehicle Weight - lb</u>
2 axles	40,000
3 axles	48,000
4 or more axles	52,000
<u>Combination Units</u>	
3 axles	57,000
4 axles	62,000
5 or more axles	66,000

Where the ground is saturated with water or during periods of freezing and thawing, the CO may impose further load restrictions or suspend hauling.

Operate loaded vehicles hauling material at speeds not exceeding 40 mph and spaced at 500 feet minimum intervals. Do not exceed 25 mph or operate more than one loaded hauling vehicle at one time on a bridge.

Section 105.--CONTROL OF MATERIAL

105.01. Add the following:

If any material is to be excavated from any material source outside the construction limits, other than commercially operated sites, before work begins provide a certification from the State

Historic Preservation Officer stating (1) that a cultural resource survey (a survey for historical sites and archeological remains) has been performed at the proposed site, and (2) that no significant cultural resources exist in the area that will be disturbed by the Contractor.

Section 106.--ACCEPTANCE OF WORK

106.01. Delete the fourth sentence of the fifth paragraph and substitute the following:

If Contractor testing and inspection is verified by the Government, the Contractor's results may be used by the Government to evaluate work for acceptance.

106.03 Certification. Add the following after the first paragraph:

Other than references in, or to the FAR or Federal Law, when this contract references certifications; certificates; or certified document, equipment or individuals; these references are not certifications within the meaning of Section 4301 of Public Law 104-106, the National Defense Authorization Act for Fiscal Year 1996. These references simply refer to documentation of peripheral contract requirements, which is required to be validated by an individual or organization having unique knowledge or qualifications to perform such validation.

106.03(a) Production certification. Delete items (2) through (5) and substitute the following:

(2) Lot number or other means of cross-referencing to the manufacturer's inspection and testing system

(3) Substantiating evidence that the material conforms to the contract quality requirements as required by FAR 46.105(a)(4), including all of the following:

(a) Test results on material from the same lot and documentation of the inspection and testing system

(b) Manufacturer's statement that the material complies with all contract requirements

(c) Manufacturer's signature or other means of demonstrating accountability for the certification

Section 107.--LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

107.01. Add the following:

Permits such as the following may be required for this project:

1. Water Quality Permit
2. Burn Permit
3. Disposal Permit or Agreement

This list of permits may not be all inclusive of those required for construction. No time or

damages, including impact damages, will be allowed for failure to obtain necessary permits or agreements. Provide copies of these permits and agreements upon request.

107.02. Add the following after the third paragraph:

For the full duration of construction, protect the existing trees that are tagged by the CO in the following manner:

- (a) Install and maintain a 4 feet high wood slat fence with steel posts around the perimeter of the root protection area. The root protection area is defined as an area equal to 10 feet outside the drip line.
- (b) All construction that takes place within the root protection area must be approved by the CO. Do not store or locate construction materials, vehicles, staging areas, topsoil, disposal areas, or trailers within the root protection area. Protect the area from potentially harmful materials from run-off or spillage, flooding, erosion, and sedimentation.
- (c) Remove all tree protection prior to final acceptance.

Restore all areas outside the limits of work that are disturbed due to construction operations with topsoil and sod according to Sections 624 and 627. The restoration of the staging area shall be as specified in Section 151 – Mobilization.

Tree Protection

- (a) Locate utilities according to Section 638 prior to beginning work.
- (b) Preserve and protect all existing vegetation on or adjacent to the site that does not reasonably interfere with the construction.
- (c) Do not cut low hanging branches unless approved by the CO. Provide a qualified arborist to prune branches that are damaged or cause an obstruction, as designated by the CO. Immediately and properly trim any such cuts or accidental injuries to the bark or trunk. Perform this work at no additional cost to the Government.
- (d) Do not use trees as guys, anchors, crane stays or for any other such purpose.
- (e) Maintain construction material, worker vehicles, construction equipment storage areas, topsoil, waste disposal areas, construction trailers and portable toilets away from the tree drip line areas.
- (f) Do not permit heavy equipment and vehicular traffic within the perimeter of any unpaved tree drip line area.
- (g) Do not store toxic materials near the tree drip line areas.
- (h) Protect the tree drip line areas from potential injurious materials caused by run-off or spillage during mixing and placement of construction materials, or drainage from stored materials. Protect the tree drip line areas from flooding, erosion, and sedimentation from

adjacent grading operations.

- (i) If at any time the CO determines that the work is being conducted in a manner that unnecessarily impacts trees, immediately cease all work activities in that area.
- (j) Restore, repair, or replace all trees and shrubs damaged by unauthorized cutting, careless operation of equipment or stockpiling of materials with an equal number of trees and shrubs in the same caliper size as any damaged plants, as directed by the CO.
- (k) Install tree protection fencing before starting any demolition or construction work. Maintain the protective fencing through the duration of the project, or until the CO approves its removal.

Coordinate with the CO all areas requiring root pruning prior to beginning work operations. Mark areas in the field to be pruned, as directed by the CO. Examples of areas that may be required to be pruned are work involving removal and construction of sidewalks, curb, conduits, and piping adjacent to and within the drip line of trees. Upon marking areas for pruning in the field, the CO will coordinate with the NPS to perform the root pruning. Note that root pruning may only occur during spring and fall. The Contractor will be required to coordinate with the CO for pruning operations by the NPS during the spring or fall, or risk being required to prune all areas at the Contractor’s expense. Perform all removals and construction within the pruned limits, as directed by the CO. Do not damage or disturb root areas beyond the limits established for pruning. For areas that have not been pruned, the CO may direct the Contractor to perform pruning in accordance with Section 202.

107.02. Add the following after the sixth paragraph:

Notify the CO in writing at least 48 hours in advance of any scheduled utility shutdown. The following is a list of utility companies with utilities within the project limits:

PEPCO	Carl Anglin at 202-388-2175
Verizon	Lewis Jones at 202-636-0378
D.C. Water and Sewer Authority	Charles Johnson at 202-787-2057
D.C. Dept of Transportation	Fauad Youssef at 202-671-1364
Washington Gas	Allan Melliza at 703-750-4256

The Contractor shall be responsible for ensuring that existing utilities within the construction areas are not damaged by construction operations. Use test pits or other means for determining the horizontal and vertical location of utilities prior to excavation. If required, protect utilities from excessive loading that may be caused by construction machinery and other operations. Repair damaged utilities at no cost to the Government.

Verify the source and connection of electric utilities prior to removing streetlight electric cable. The Contractor shall be responsible for all costs associated with disruption of electric services caused by construction operations.

107.05. Add the following after the second paragraph:

Submit all claims to the insurance company for investigation, regardless of deductible. Provide the results of any investigations and subsequent actions to the CO within 1 week of receipt from the insurance company.

Section 108.--PROSECUTION AND PROGRESS

108.01. Delete the first sentence of the second paragraph and substitute the following:

A preconstruction conference will be held after the contract is awarded and before beginning work.

108.01. Add the following:

Construction operations are limited as follows:

No work will be permitted on weekends without prior approval of the CO. No work will be permitted on National legal holidays. No work will be permitted on the weekend immediately before or after a legal holiday. A weekend is defined as beginning at 7 p.m. Friday and ending at 5 a.m. on Monday.

A sequence of construction for the project and the required construction traffic control plans are included in the contract documents. The project shall be constructed in four stages as described in the plans. During Stages 1 and 2 only one (1) lane of the Parkway may be closed to traffic. During Stage 3, which includes the construction of the median from Virginia Avenue to Station 10+50 and the Latex Modified Concrete Overlay on the two inside lanes of the L Street Bridge two (2) inside lanes on the Parkway may be closed to traffic. During Stage 4, which consists of the milling and paving of the Parkway and the ramp terminals, two lanes of the Parkway may be closed to traffic.

Stage 4 work must be done during weekends. A total of four (4) weekends will be allowed for the milling and paving operations. The Contractor must submit the schedule for this weekend work for approval by the CO prior to performing the work.

The exit and entrance ramps at K Street, 27TH Street NW and Pennsylvania Ave. may be closed only on weekends to construct new curbs and gutter and handicap ramps and to install electrical conduit. All ramp closures must be coordinated with the CO. The P Street Ramps shall be constructed in two phases to maintain either entrance or exit traffic at all times

See SCR Sections 203 and 552 regarding restriction related to the removal of bridge paving and placing latex modified concrete overlays on bridges.

Approximately one-half (1/2) of the parking lot at the Thompson Boat Center must remain in service during the construction of the parking lot. During the construction of the parking lot access to the parking lot and the Thompson Boat Center shall be maintained via the existing access road. The access road to the parking lot and to the Boat Center may be closed to traffic for a period of up to thirty (30) days to allow construction of the road. All work related to the

Thomson Boat Center access road must be done during the period from November 1, 2007 to November 30, 2007. All contract work shall be completed by November 30, 2007.

The Hiker/Biker Trail within the limits of the project will be closed and a detour route established and properly signed prior to beginning any construction activities. The proposed detour route and the required signage are shown on the plans.

Hauling will only be permitted from the nearest point of public access to the work site. Minimize hauling over completed pavement.

The Contractor will be required to have VMS signing in place a minimum of two weeks prior to any changes in traffic control.

Limitations of operations for temporary traffic control are specified in Subsection 156.06.

108.04. Delete Table 108-1 and substitute the following:

**Table 108-1
Charge for Liquidated Damages for Each Day
Work is Not Substantially Completed**

Original Contract Price		Daily Charge
From More Than--	To and Including--	
\$0	\$1,000,000	\$500
\$1,000,000	\$2,000,000	\$1,100
\$2,000,000	\$5,000,000	\$2,200
\$5,000,000	\$10,000,000	\$2,700
\$10,000,000	and more	\$3,300

Section 109.--MEASUREMENT AND PAYMENT

109.01. Delete the first sentence and substitute the following:

Take or convert all measurement of work to English units.

109.01. Add the following after the third paragraph:

Submit measurement notes to the CO within 24 hours of performing the work. For on-going work, submit measurement notes weekly. When work is not complete, identify the measurement as being an interim measurement. Submit the final measurement when the installation is completed. Measurement notes form the basis of the Government’s receiving report (see Subsection 109.08(d)). For lump sum items, submit documentation to support invoiced progress payment on a monthly basis.

Use an acceptable format for measurement records. As a minimum, include the following information in all records of measurement:

- (a) Project name and number
- (b) Contract item number
- (c) Date the work was performed
- (d) Location of the work
- (e) Measured quantity
- (f) Calculations made to arrive at the quantity
- (g) Supporting sketch and/or details as needed to clearly define the work performed and the quantity measured
- (h) Names of persons measuring the work
- (i) Identification as to whether the measurement is interim or final
- (j) Signed certification statement by the persons taking the measurements, performing the calculations, and submitting them for payment that the measurement and calculations are correct to the best of their knowledge and that the quantity being measured is subject to direct payment for the identified item under the contract

109.02. Add the following:

(p) Contingent Sum. Do not measure directly. The bid amount is complete payment for all work described in the contract and necessary to complete the work for that item. The quantity is designated as “1.”

109.06(a)(3) Cost or pricing data. Delete the third paragraph and substitute the following:

Submit with the cost or pricing data a written proposal for pricing the work according to (1) above. See Table 15-2 following FAR Subpart 15.4 for guidance.

109.07. Delete the last sentence of the last paragraph.

109.08. Delete the text of this Subsection and substitute the following:

109.08 Progress Payments. FAR Clauses 52.232-5 - Payments under Fixed-Price Construction Contracts and 52.232-27 - Prompt Payment for Construction Contracts are supplemented as follows.

(a) General. Only invoice payments will be made under this contract. Invoice payments include progress payments made monthly as work is accomplished and the final payment made upon final acceptance. Only one progress payment will be made each month. No progress payment will be made in a month when the work accomplished results in a net payment of less than \$1,000. Full or partial progress payment will be withheld until a construction schedule or schedule update is submitted to and accepted by the CO.

(b) Closing date and invoice submittal date. The closing date for progress payments will be designated by the CO. Include work performed after the closing date in the following month's invoice. Submit invoices to the designated billing office by the 7th day after the closing date. Invoices received by the designated billing office after the 16th day following the closing date will not be accepted for payment processing that month. Include late, unprocessed invoice submittals in the following month's invoice.

(c) Invoice requirements. Submit the invoice to the government's designated billing office.

The designated billing office is:

Federal Highway Administration
 Eastern Federal Lands Highway Division
 Loudoun Tech Center
 21400 Ridgetop Circle
 Room 200
 Sterling, Virginia 20166-6511

Include the following items in the invoice:

- (1)** The information required in FAR Clause 52.232-27(a)(2)(i) through (a)(2)(x).
- (2)** A tabulation of total quantities and unit prices of work accomplished or completed on each pay item as of the monthly closing date. Do not include any quantities unless field note documentation for those quantities was submitted by the closing date. Do not include any work involving material for which test reports required under Sections 153 or 154 or certifications required by Subsection 106.03 are past due as of the closing date.
- (3)** The certification required by FAR Clause 52.232-5(c) and, if applicable, the notice required by FAR Clause 52.232-5(d). Provide an original signature on the certification. Facsimiles are not acceptable.
- (4)** If applicable, a copy of the notices that are required by FAR Clause 52.232-27(e)(5) and (g).
- (5)** The amount included for work performed by each subcontractor under the contract.
- (6)** The total amount of each subcontract under the contract.
- (7)** The amounts previously paid to each subcontractor under the contract.
- (8)** Adjustments to the proposed total payment which relate to the quantity and quality of individual items of work. Adjustments for the following may be made by the Government after validation of the invoice:
 - (a)* Retent resulting from a failure to maintain acceptable progress.
 - (b)* Retent resulting from violations of the labor provisions.
 - (c)* Retent pending completion of incomplete work, other "no pay" work, and verification of final quantities.
 - (d)* Obligations to the Government such as excess testing cost or the cost of corrective work pursuant to FAR Clause 52.246-12(g).

(e) Liquidated damages for failure to complete work on time.

(d) Government's receiving report. The Government's receiving report will be developed using the measurement notes received and accepted by the CO. Within 4 days after the closing date, the CO will be available by appointment at the Government's designated billing office to advise the Contractor of quantities and unit prices appearing on the Government's receiving report.

(e) Processing progress payment requests. No payment will be made for work unless field note documentation for the work was provided by the closing date.

(1) Invoices received by the 7th day following the closing date.

(a) Proper invoices. If the invoice meets the requirements of Subsection 109.08(c), and the quantities and unit prices shown on the contractor's invoice agree with the corresponding quantities and unit prices shown on the Government's receiving report, the invoice will be paid.

(b) Defective invoices. If the invoice does not meet the requirements of Subsection 109.08(c) or if any of the quantities or unit prices shown on the contractor's invoice exceed the corresponding quantities and unit prices shown on the Government's receiving report, the invoice will be deemed defective and the Contractor so notified according to FAR Clause 52.232-27(a)(2). Defective invoices will not be corrected by the Government and will be returned to the contractor within 7 days after the Government's designated billing office receives the invoice.

Revise and resubmit returned invoices by the 18th day following the closing date. The CO will evaluate the revised invoice. If the invoice still does not meet the requirements of Subsection 109.08(c), the contractor will be so notified according to FAR Clause 52.232-27(a)(2), and no progress payment will be made that month. Correct the deficiencies and resubmit the invoice the following month.

If the revised invoice meets the requirements of Subsection 109.08(c), but still has quantities or unit prices exceeding the corresponding quantities and unit prices shown on the Government's receiving report, the Government's data for that item of work will be used. The contractor's invoice, as revised by the Government's receiving report, will be forwarded for processing by the 23rd day following the closing date. The contractor will be notified by the 23rd day following the closing date of the reasons for any changes to the invoice.

(2) Invoices received between the 8th and 16th day following the closing date.

(a) Proper invoices. If the invoice meets the requirements of Subsection 109.08(c), and the quantities and unit prices shown on the Contractor's invoice agree with the corresponding quantities and unit prices shown on the Government's receiving report, the invoice will be deemed proper and forwarded for processing within 7 days of receipt.

(b) Defective invoices. If the invoice does not meet the requirements of Subsection 109.08(c), the invoice will be deemed defective, the Contractor so notified according to FAR Clause 52.232-27(a)(2), and no progress payment will be made that month. Correct the deficiencies and resubmit the invoice the following month.

If the invoice meets the requirements of Subsection 109.08(c), but has quantities or unit prices exceeding the corresponding quantities and unit prices shown on the Government's receiving report, the Government's data for that item of work will be used. The contractor's invoice, as revised by the Government's receiving report, will be forwarded for processing within 7 days after receiving the invoice. The contractor will be notified, within 7 days of the Government's receipt of the invoice, of the reasons for any changes to the invoice.

(f) Partial payments. Progress payments may include partial payment for material to be incorporated in the work, provided the material meets the requirements of the contract and is delivered on or in the vicinity of the project site or stored in acceptable storage places.

Partial payment for material does not constitute acceptance of such material for use in completing items of work. Partial payments will not be made for living or perishable material until incorporated into the project.

Partial payments for material will not exceed the lesser of:

- (a)* 80 percent of the contract bid price for the item, or
- (b)* 100 percent of amount supported by copies of invoices submitted.

The quantity paid will not exceed the corresponding quantity estimated in the contract.

109.09. Delete the first sentence and substitute the following:

FAR Clause 52.232-5—Payment under Fixed-Price Construction Contracts and FAR Clause 52.232-27—Prompt Payment for Construction Contracts is supplemented as follows.

Section 151.--MOBILIZATION

151.01. Add the following:

This work also includes providing a staging area enclosed by a stockade fence, for materials and equipment, etc.

The plans show an area in which the Contractor shall site his staging area. The Contractor may adjust the size and shape of the staging area to minimize the disturbance to trees and scrubs in the area. Once the Contractor has established the outline of the staging area he shall flag the trees and scrubs that will require removal, photograph the staging area and the adjacent area to record the pre-construction condition of the site. Prior to the removal of any trees and scrubs in the area the Contractor shall contact Mr. O. B. Goodman of the National Park Service and obtain his

approval for the removal of trees and scrubs. After approval by the National Park Service the Contractor shall remove the trees and scrubs and clear and stockpile the topsoil within the staging area before beginning construction. Place crushed stone (1-inch minimum size), of sufficient depth to prevent rutting. Install a wood stockade fence with a locked gate around the staging area. Any trees or shrubs, other than those approved by the National Park Service for removal, that are damaged by the Contractors' activities shall be restored, repaired or replaced by the Contractor in accordance with Subsection 207.02.

Close and lock the gate to the staging area during non-work hours.

The Contractor shall maintain the staging area in a neat and orderly fashion, free of trash and litter. Any grass within the staging area shall be mowed regularly to maintain a height not to exceed 3-inches. Also trim grass along the stockade fence outside of the staging area.

Following completion of the work, the Contractor shall restore the staging area as follows: remove all fencing, equipment and stored materials from within the staging area, remove the stone and regrade the staging area as required to match the original contours and place 2" of topsoil and turf establishment as directed by the CO.

151.02. Add the following:

Measurement for Mobilization includes the Contractor staging area including the removal of trees and scrubs, the stockade fence, maintenance of the area, mowing and restoration of the staging area site at the conclusion of the project.

Section 152.--CONSTRUCTION SURVEY AND STAKING

152.02. Add the following:

Furnish a practicable schedule of staking activities with the construction schedule submitted according to Section 155. Include the dates and sequence of each staking activity.

152.03. Delete the text of paragraphs **(b)**, **(c)**, **(d)**, **(h)**, **(i)** **(j)**, and **(k)**.

152.03(a). Add the following:

Set bench marks (at least every 1,000-ft of roadway). Replace any missing control points.

152.03(e). Delete the text of this paragraph and substitute the following:

(e) Centerline reestablishment. Reestablish centerline from instrument control points. The maximum spacing between centerline points is 25 feet when centerline curve radius is less than or equal to 500 feet. When the centerline curve radius is greater than 500 feet, the maximum distance between centerline points is 50 feet. Reestablish centerline as many times as necessary to construct the work.

152.03(f). Delete the third paragraph and substitute the following:

The maximum longitudinal spacing between stakes is 25 feet when the centerline curve radius is less than or equal to 500 feet. When the centerline curve radius is greater than 500 feet, the maximum longitudinal spacing between stakes is 50 feet. The maximum transverse spacing between stakes is 25 feet. Reset grade finishing stakes as many times as necessary to construct the subgrade and each aggregate course. Use brushes or guard stakes at each stake.

152.03(I). Add the following:

- (6) Excavation limits for various drainage, walls, structures, and other pertinent items.
- (7) Landscaping work.
- (8) Traffic control (both permanent and temporary) signs, signals, markings, delineators, etc.

Section 153.--CONTRACTOR QUALITY CONTROL

153.04. Add the following to the second paragraph:

Detail inspection results including deficiencies observed and corrective actions taken.

Section 154.--CONTRACTOR SAMPLING AND TESTING

154.02. **Sampling.** Delete the last three sentences of the second paragraph and substitute the following:

Deliver the Government's portion of the split sample in a container suitable for shipment. Label all samples with the following information:

- | | |
|------------------------|--|
| (a) Project number | (f) Time sampled |
| (b) Source of material | (g) Location sample taken |
| (c) Item number | (h) Name of person sampling |
| (d) Sample number | (i) Name of person witnessing sampling |
| (e) Date sampled | (j) Type of test required on sample |

154.03. Add the following:

Furnish test results to the CO immediately after completing the test. The requirements for furnishing test results do not include sample aging or curing time; therefore, reporting times will be extended accordingly.

Submit proposals for using alternate AASHTO or State approved test methods in writing for approval. Alternate methods may be allowed based on documented equivalence to the method specified.

154.04. Add the following:

Report test results on forms containing all sample information required by Subsection 154.02. Label clearly all interim measurements used to determine the results. Attach work sheets used to determine test values to the test result forms when submitted.

On a weekly basis, submit a copy of all current Contractor test results and pay factor calculations based on those tests for items accepted under Subsection 106.05. When large quantities are produced, calculate pay factors as soon as possible. Use this information to make any necessary adjustments to operations to achieve acceptable pay factors. The Government may use the Contractor's test results to determine final pay factors for acceptance according to Subsection 154.05.

Section 155.--SCHEDULES FOR CONSTRUCTION CONTRACTS

155.02. Add the following after the third paragraph:

Weather Delays.

(a) Definitions.

- (1) Reasonably Predictable Weather is defined as the number of workdays that can be expected to be lost in any month due to rainfall based on ten year historical weather data.
- (2) A Rain Day is defined as a potentially lost workday on which rainfall is equal to or greater than 0.10 inch.
- (3) A Drying Day is defined as a work day(s) immediately following a rainfall equal to or greater than 1.00 inch that is potentially lost because of wet ground conditions.
- (4) A Workday is a day not excluded from work by Section 108 of the SCR.

(b) Reasonably Predictable Weather. The Contractor shall determine Reasonably Predictable Weather for this contract by completing Table R1. Data for Table R1 shall be calculated as follows:

- (1) Using the last ten (10) years of historical weather data from the nearest NOAA weather data collection station, compute the average number of workdays lost (rain days plus drying days) for each month and the standard deviation from the average. Add the average number of workdays lost to the standard deviation.
- (2) The Total number of Lost Days (Average Workdays Lost plus one Standard Deviation, rounded to whole days) will be considered normal for each month.
- (3) Submit a completed Table R1 with the initial construction schedule.

(c) Unusually Severe Weather under FAR Clause 52.249-10, Default (Fixed-Price Construction), the Contractor can request time for a delay due to Unusually Severe Weather. For this contract, Unusually Severe Weather due to rainfall is defined as when the number of Actual Workdays Lost is greater than the calculated Total Lost Days for the month in question.

The number of Actual Workdays Lost is calculated by first totaling the actual Rain Days

plus the actual Drying Days occurring in the month in question. From this total, deduct any workdays meeting the following conditions:

- (1) The Rain Day or Drying Day occurred on a non-work weekday such as a holiday.
- (2) Rainfall occurred at a time when no weather dependent work was in progress or occurred during planned or unplanned shutdowns due to other circumstances such as equipment failure, strikes, material supplies, delays, etc.
- (3) The Contractor was still working or able to work on weather dependent activities to the extent that less than 50% of the workday was lost due to weather.

If the net number of Actual Workdays Lost is greater than the Total Lost Days, than Unusually Severe Weather will have occurred in the month in question.

- (d) **Time Adjustments for Rain Delays** If the net number of Actual Workdays Lost to rain is less than the Total Lost Days for the month in question, no time adjustments will be made. If the net number of Actual Workdays Lost is more, then an excusable time extension may be granted. The Contractor must submit a Weather Time Impact Analysis supporting any alleged delays due to Unusually Severe Weather.
- (e) **Delays Due To Other Weather Conditions** Delays due to other unusually severe weather conditions (snow, extreme cold or heat, high winds, etc.) must be supported with a Weather Time Impact Analysis using historical weather data.

155.02. Add the following to the fourth paragraph:

No progress payment will be made for any work until a construction schedule is submitted to the CO and accepted by the CO.

155.02. Delete the last paragraph and substitute the following:

The Construction Contract Time shown on the construction schedule for contract completion or for any interim completion dates shall be the calendar dates established in the contract.

155.04. Add to the first paragraph:

For a computer-generated CPM, use Primavera software or software that is file-compatible with Primavera.

155.06. Add the following:

No progress payment will be made for any work until an updated construction schedule has been submitted to and accepted by the CO.

155.09. Add the following:

See Subsection 109.08.

TABLE R1

Project Number _____

Location of NOAA Data Collection Station _____

Data Years (10 year history): 19__ through 20__

REASONABLY PREDICTABLE WEATHER

MONTH	AVERAGE WORKDAYS LOST	STANDARD DEVIATION	TOTAL LOST DAYS
JANUARY			
FEBRUARY			
MARCH			
APRIL			
MAY			
JUNE			
JULY			
AUGUST			
SEPTEMBER			
OCTOBER			
NOVEMBER			
DECEMBER			

Section 156.--PUBLIC TRAFFIC

156.03. Add the following:

Comply with all of the requirements of the Traffic Control Plan and adequately maintain all of the devices required. Clean, service, and replace all traffic control devices when they become inoperative, damaged, or when the specified reflectivity of the device is reduced by 50%. The Contractor will be given written notice of those traffic control items not in compliance with the Contract. Revise the identified items into compliance within 24 hours. If the Contractor fails to bring the specified items into compliance within the 24 hour period, the CO may assess a daily reduction in payment to the Contractor of \$500.00 per day. The CO may continue to assess the daily reduction in payment for each additional 24 hour period until the items are corrected. This

reduction in payment will be subtracted from the Contractor's progress payments and will be unrecoverable. Use of this reduction in payment does not waive the CO's right to suspend the work in whole or in part according to Subsection 108.05.

156.04(c). Delete and substitute the following:

- (c)** Snow removal to facilitate the work is the Contractor's responsibility. Snow removal to provide public access is the responsibility of the maintaining agency and will be performed at the maintaining agency's discretion. Allow the maintaining agency access to perform snow removal.

Snow accumulation on the Contractor's work area due to NPS/DC snow removal operations will become the responsibility of the Contractor.

Snow removal from the Contractor's work area may not be deposited on streets, trails, walks, or non-NPS property.

156.04. Add the following:

- (f)** Ensure that all drains and inlets within the project limits are fully functional throughout the duration of the project.

156.05. Delete the second sentence and substitute the following:

Snow removal to provide public access is the responsibility of the maintaining agency.

156.06(j) Delete the text and substitute the following:

- (j)** Limit construction caused delays to public traffic to a maximum of 15 minutes per passage through the project.

156.06. Add the following paragraph after paragraph **(j)**:

- (k)** Maintain existing guardrails and bridge railings until removal is necessary for construction. Use a temporary barrier or other appropriate shielding or warning device while the guardrails and bridge rails are absent. Install new guardrails and bridge rails as soon as possible to minimize risk to the public.

156.07. Add the following:

Nighttime operations are permitted.

156.08. Add the following:

Employ a full-time Traffic Safety Supervisor, exclusively for this project, and designate the person in writing to the CO at the preconstruction conference. The Traffic Safety Supervisor will be on the site at all times when work is being performed and available during non-work hours.

Section 157.-- SOIL EROSION CONTROL

157.04 Controls and Limitations on Work. Delete paragraphs (c) and (d) and substitute the following:

(c) Unless a specific seeding season is identified in the contract, apply permanent turf establishment to the finished slopes and ditches within 14 days according to Sections 624 and 625.

(d) Apply temporary turf establishment or other approved measures on disturbed areas within 14 days after last disturbance, except where the area will be redisturbed within 21 days after last disturbance or when initial stabilization is precluded by snow cover or by seasonal arid conditions in arid or semi-arid areas (average annual rainfall of 20 in. or less).

157.15. Add the following:

Measure inlet protection by the each.

Measure stabilized construction entrance by the each.

157.16. Add the following pay item:

<u>Pay Item</u>	<u>Pay Unit</u>
15716 Inlet Protection, type D	Each
15718 Stabilized construction entrance	Each

Section 201.—CLEARING AND GRUBBING

201.08. Delete the first sentence and substitute the following:

Measure clearing and grubbing by the square yard.

201.09. Add the following pay item:

<u>Pay Item</u>	<u>Pay Unit</u>
20103 Clearing and grubbing	Square yard

Section 203.--REMOVAL OF STRUCTURES AND OBSTRUCTIONS

203.01. Add the following after the first paragraph:

This work also consists of removing variable depth asphalt pavement wearing surfaces from the L Street Bridge. The work will also consist of the removal, as directed by the CO, of any loose and deteriorated concrete from the surface of the concrete deck on the L Street Bridge.

Restrictions. The removal of the asphalt pavement-wearing surface on the L Street Bridge is prohibited between November 30 and March 24 to avoid delays in placing the new latex

modified concrete (LMC) overlays due to possible cold or inclement weather. Once the removal of the asphalt concrete wearing surface has started, the Contractor shall continue to complete the removal, repair any spalled or deteriorated concrete in the deck of the L Street Bridge and place the LMC overlay in the shortest possible time.

No traffic will be allowed on the affected lanes of the L Street Bridge after the asphalt wearing surfaces have been removed and until the LMC overlays have been cured. See Section 552 for placement of the LMC overlay.

The Contractor shall submit schedules for the work on the L Street Bridge for approval by the CO prior to beginning work.

203.03. Add the following:

Salvage the following removal items for reuse in the new construction.

1. The Belgian blocks and the granite curbs.
2. Sign panels as designated on the plans.

These items are to be removed so as to not cause damage to the salvaged items and to be neatly stored in the staging area until reused.

Salvage the following removal items for delivery to the NPS.

1. Luminaires, including housing, lamps, ballast, photoelectric controls, and associated hardware.
2. Sign panels considered usable.
3. Inlet frames.
4. Brick block pavers (brick pavement)

These items are to be removed so as not to cause damage to the salvaged items and delivered to the National Park Service at the Rock Creek Maintenance Area at 5000 Glover Road. Contact Mr. O. B. Goodman at 202-895-6017 to arrange for delivery.

Signs not designated for removal, but attached to streetlight poles that are designated for removal, are to be salvaged and placed on the new streetlight poles nearest to their original location.

203.04. Add the following:

- (a) Removal of Asphalt Wearing Surfaces on Bridges.** Use a pavement-milling machine capable of micromilling to remove the asphalt pavement-wearing surface including the coal tar membrane waterproofing from the existing concrete bridge deck on the L Street Bridge. Take care to not mill the concrete bridge deck surface. Hand tools may be used to remove these materials in close proximity to the armored joints. Care shall be taken so as not to damage the armored joints that are to remain in place. The milling equipment to be used by the Contractor in removing the asphalt-wearing surface shall be approved by the

CO prior to their use. After micromilling, clean any remaining coal tar membrane and asphalt wearing surface from the bridge deck by an approved method. CO will verify the cleanliness of the concrete prior to the Contractor inspection of the bridge deck for deteriorated concrete.

(b) Removal of Loose and Deteriorated Concrete, Spalls etc., for the Repair of Bridge Structures. Following the removal of the asphalt wearing surfaces from the L Street Bridge, the Contractor shall inspect the concrete surface to determine the type and extent, if any, of any needed repairs. The Contractor shall prepare a brief report which will contain, as a minimum, the following:

1. A general description of the condition of the concrete surface and, should repairs be required, the following:
2. A plan showing the approximate location, type and size (area and depth) of defects found in the concrete surfaces including an estimate of the total area on each surface requiring repair.
3. A statement as to the type of repair required. Reference may be made to the repair details included in the plans or, should the defects found require a different or more extensive repair than shown by the repair details, a description of the Contractor's proposed repair method.

The report shall be submitted to the CO and no repair shall commence without approval of the CO. Any additional defects found after the repair work commences will be brought to the attention of the CO who will specify the type and extent of repair required.

Loose and deteriorated concrete shall be removed to sound concrete. The boundaries of the removal areas shall be either saw cut or cut with hand tools in neat straight lines to a minimum depth of 0.5 inches.

The methods and equipment to be used by the Contractor in removing the deteriorated concrete shall be approved by the CO prior to their use. Methods and equipment shall be subject to the following restrictions:

The L Street Bridge – Mechanical impact methods using power hand tools may be used to remove deteriorated concrete with the following restrictions:

- (a)* Do not use jackhammers heavier than 30 pounds.
- (b)* Do not operate 30 pound jack hammers and mechanical chipping tools at an angle in excess of 45° measured from the surface of the slab.
- (c)* Do not use chipping hammers heavier than a nominal 15-pound class to remove concrete from beneath any reinforcing bar.
- (d)* Use hand tools (hammers and chisels) for removal of final particles of concrete or to achieve the required depth.

- (c) **Reinforcing Steel.** Clean all reinforcing steel that is to remain in place and has been exposed by removal operations. Remove all rust and corrosive products, including oil, dirt, concrete fragments, laitance, loose scale, and other coating of any character that would destroy or inhibit the bond with the new concrete.

When cleaned reinforcing steel will be exposed for more than seven (7) calendar days before placing the concrete, protect the steel from corrosion and contamination. Clean and/or replace all reinforcing steel corroded or contaminated because of the Contractor's failure to protect the steel.

Prevent cutting or damaging reinforcing steel designated to remain in place. Repair or replace any damaged bars.

203.05(b). Delete the text and substitute the following:

Burning is prohibited. Dispose of material according to Subsection 203.05(a).

203.07. Add the following:

The removal of loose and deteriorated concrete, including any required debris shields, and the cleaning and repair of existing reinforcing steel as described in 203.04 above will not be measured but the cost of this work shall be included in the price bid for Item 55209, Repair Concrete.

Measure removal of light poles by each. Removal of light poles includes the pole, concrete foundation, luminaire, hardware and any associated conduit and wiring that may interfere with the new construction. Removal of light poles also includes the removal of any signs on the poles and the resetting of these signs on the new light poles. Removal of light poles also includes the salvage and delivery of the specified items.

Measurement of Belgian blocks, granite curb, and signs to be reused includes salvaging and storage until reused.

Measure removal of brick pavement by the square yard.

Include the removal of handicap ramps with the measurement for removal of sidewalk.

The removal of inlet grates to be replaced by new Type 6A6 grates in the existing frames will not be measured.

Saw cutting for the repair of portland cement concrete bridge superstructures and for the removal and repair of portland cement concrete pavements will not be measured.

Section 204.--EXCAVATION AND EMBANKMENT

204.04. Add the following:

Conserve existing topsoil within the construction limits. Re-use the conserved topsoil in areas designated for turf establishment.

204.06 (b) Delete the first sentence and substitute the following:

Rock blasting is not permitted.

204.06. Add the following after 204.06(c):

204.06(d) Hand Excavation

Excavating, filling and grading around trees:

Where excavating, filling or grading is required within the drip line of trees or within the root protection zone of trees that are to remain, perform the work as follows:

1. Obtain permission to begin work from the CO and perform excavation in the presence of the CO.
2. Do not cut tree root larger than ½ inch encountered during excavation without prior approval of the CO. Tunnel under or around the roots by careful hand digging, without injury to the roots. When directed by the CO, prune tree roots larger than ½ inch in accordance with Subsection 202.03. Perform regrading work by hand.

Add the following after subsection 204.16(h):

(i) Hand Excavation. Measure hand excavation according to 204.16(a). Do not deduct the area of tree roots left in place.

204.16. Add the following:

Excavation will include vegetation and shrubs within the construction limits.

204.17. Add the following pay item:

<u>Pay Item</u>	<u>Pay Unit</u>
20418 Hand excavation	Cubic yard
20421 Rock excavation	Cubic yard

Section 301.--UNTREATED AGGREGATE COURSES

301.02 Add the following:

If an alternate State gradation is produced as provided in Subsection 703.05, notify the CO in writing. If the target values with respect to the State gradation are not identified, they will be the midpoint of the allowable State specification band.

301.03. Delete the second paragraph.

301.08. Delete the text and substitute the following:

Aggregate for untreated aggregate courses will be evaluated and accepted under Subsection 106.04. The upper and lower specification limits for gradation are the approved target values plus or minus the allowable deviations. For surface courses, the upper and lower specification limits for plasticity index are shown in Table 703-3. The aggregate will be tested for acceptance on samples taken from its final location immediately prior to compaction. Obtain and test three samples in accordance with AASHTO T 27 and T 11. The CO will determine sampling locations.

Construction of untreated aggregate courses will be evaluated under Subsections 106.02 and 106.04. Preparation of the surface on which the aggregate course is placed will be evaluated under Section 204 or 303 as applicable.

301.10. Delete the first paragraph and substitute the following:

The accepted quantities, measured as provided above, will be paid at the contract price per unit of measurement for the pay items listed below that are shown in the bid schedule. Payment will be full compensation for the work prescribed in this Section.

Section 401.—HOT ASPHALT CONCRETE PAVEMENT

401.13. Add the following after the fifth paragraph:

In curve widened area, place the surface pavement joint midway between the pavement edges.

401.14. Add the following after Subsection 401.14:

401.14A. Rumble Strip. Construct a rumble strip at the centerline of Parkway by milling or grinding ½-inch depressions into the finished surface of the pavement. The rumble strip shall be constructed to the limits as shown and in accordance with the details on the plans.

Use equipment consisting of a rotary type cutting head with a maximum outside diameter of 24 inches and a minimum length of 18-inches. Provide a cutting head with the cutting tips arranged to provide a smooth cut with no more than 1/16-inch between peaks and valleys and which will assure the smallest amount of breakout of the roadway surface.

Furnish the cutting tool equipped to house a single milling head in line in the direction of travel and is capable of creating the finished pattern at an output of at least 1500 indentations per hour. Equip the cutting tool with its own independent suspension from the power unit to allow the tool to self-align with the cross-slope of the pavement. Provide indentations in true alignment and parallel to the centerline of the roadway.

Furnish rumble strip indentations with finished dimensions of 7-inches wide (+/- ½- inch) in the direction of travel and be a minimum of 18-inches long measured perpendicular to the centerline of the roadway. Construct indentations of a concave shape with a minimum ½-inch depth at the

center and a maximum allowable depth of 5/8-inch, spaced 24-inches apart.

Equip the cutting tool with guides to provide consistent alignment of each cut in relation to the roadway. The centerline of the roadway shall be clearly marked prior to constructing the rumble strip to insure that the rumble strip is placed at the centerline.

Excess waste material resulting from the operation must be removed and disposed of in a manner approved by the CO.

Correct work in areas where 15 or more consecutive indentations have a depth of less than 1/2-inch. Deepen each depression to a minimum of 1/2-inch. Corrective work performed after 10 days requires the approval of the CO.

401.17. Add the following:

Rumble strips will be evaluated under Subsection 106.02.

Add the following sentence:

Measure rumble strip by the linear foot.

401.18. Add the following pay item:

<u>Pay Item</u>	<u>Pay Unit</u>
40108 Rumble strip	Linear foot

Section 413.--ASPHALT PAVEMENT MILLING

413.03. Add the following:

The depth of the asphalt pavement varies throughout the limits of the project. The intent of the milling operation is to remove the asphalt pavement down to the surface of the portland cement concrete base except in areas where the portland cement concrete base is non-existent or is greater than 6-inches below the surface of the asphalt. In these areas the asphalt pavement will be milled to a maximum depth of 6-inches.

The L Stree Bridge asphalt pavement wearing surface is to be micromilled to prevent damage to the existing concrete bridge deck during asphalt removal.

413.03. Delete the first sentence of the third paragraph and substitute the following:

Transition between different depths of cut at a uniform rate of 1 inch of depth per 20 feet of length.

413.03. Add the following;

Do not leave a milled surface unpaved over the winter months.

413.04. 413.05. Delete this subsection and substitute the following:

Milling asphalt pavement will be measured by the square yard for each of the following three depth categories: 2-inch depth, 4-inch depth (variable >2-inch to 4-inch) and 6-inch depth (variable 4-inch to 6-inch). Measurement will be made of the number of square yards actually milled in each of the three depth categories.

413.05. Add the following pay items:

<u>Pay Item</u>	<u>Pay Unit</u>
41301F Asphalt pavement milling, 2 inch depth	Square yard
41301K Asphalt pavement milling, 4 inch depth (variable >2" to 4")	Square yard
41301N Asphalt pavement milling, 6 inch depth (variable >4" to 6")	Square yard

Section 418. -- SUPERPAVE HOT ASPHALT CONCRETE PAVEMENT

Description

418.01 This work consists of constructing one or more courses of Superpave hot asphalt concrete pavement.

Superpave hot asphalt concrete pavement ESALs, nominal maximum aggregate size, voids in mineral aggregate (VMA), voids filled with asphalt (VFA), and smoothness type are designated in the specifications.

Material

418.02 Conform to the following Subsections:

Aggregate	703.17
Antistrip additive	702.08
Asphalt binder, AASHTO MP 1	702.01
Mineral filler	725.05

Furnish asphalt binder of performance grade PG 70-22

Construction Requirements

418.03 Composition of Mix (Job-Mix Formula). Compact specimens with the gyratory compactive effort specified in Table 418-1 for the corresponding traffic. Furnish aggregate, asphalt, and additives that meet applicable gradation and material requirements in Subsection 703.17 and the appropriate design parameters in Table 418-1. Furnish nominal maximum size aggregate that meet the applicable aggregate gradation in tables 703.11 and 703.12 for the mix class shown in the bid schedule. Recycled asphalt pavement (RAP) is not allowed in riding surface course. For all but the surface course, Recycled Asphalt Pavement may be used but not exceed 15% by weight.

Coarse graded Superpave mixtures are mixture gradations plotted on the 0.45 Power Chart that fall below the restricted zone on the sieves smaller than No. 4. A Fine graded Superpave mixture is when the gradation plot is above the restricted zone on the sieves smaller than No. 4.

**Table 418-1
Standard Specification for SUPERPAVE™
HMA Design Requirements
AASHTO MP2-00**

Design ESAL (Million)	Gyratory Compaction Level (% Theoretical Maximum Specific Gravity, Gmm)			Minimum Voids-in-the-Mineral Aggregate (% VMA) ⁽⁴⁾⁽⁷⁾				Voids Filled with Asphalt (% VFA) ⁽⁵⁾⁽⁶⁾	Dust-to-Binder Ratio ⁽¹⁾	Minimum Tensile Strength Ratio ⁽²⁾ , AASHTO T 283 ⁽²⁾
				Nominal Maximum Size Aggregate, in ⁽³⁾						
	N _{Initial}	N _{Design}	N _{Max}	1.0-inch	¾-inch	½-inch	3/8-inch			
< 0.3	6 (#91.5%)	50 (96%)	115 (#98%)	12.0	13.0	14.0	15.0	70-80	0.8-1.6	80 %
0.3 to < 3	7 (#90.5%)	75 (96%)	115 (#98%)					65-78		
3 to < 30	8 (#89%)	100 (96%)	160 (#98%)					65-75		
≥30	9 (#89%)	125 (96%)	205 (#98%)							

- (1) Hydrated lime, baghouse fines, and other mineral matter added to the mixture is included.
- (2) Specimens shall be 6-inch in diameter and 3.75 inches in height prepared in accordance with PP 28.
- (3) The nominal maximum size is one size greater than the first sieve to retain more than 10 percent of the combined aggregate.
- (4) When mineral filler or lime is used, include in the calculation for compliance with the VMA.
- (5) 3/8 inch Nominal Maximum Sieve Size mixtures, the specified VFA range shall be 73-76% for design traffic levels ≥3 million ESALs.
- (6) 1.0 inch Nominal Maximum Sieve Size mixtures, the specified lower limit of the VFA shall be 67% for design traffic levels < 0.3 million ESALs.
- (7) For coarse graded Superpave mixtures, the VMA is restricted to 2 percent above the minimum value

Submit the written job-mix formula for approval at least 28 days before production. The 28 day period will start upon receipt of all materials and information at the EFLHD Central Laboratory in Sevierville, Tennessee. For the job-mix formula, submit the following:

(a) Aggregate and mineral filler.

(1) Provide Target Values

- (a) Target value for percent passing each sieve size for the aggregate blend.
- (b) Designate target values within the gradation band specified for the nominal maximum size aggregate grading in Table 703-12.
- (c) Designate target values outside the restricted zone of Table 703-12 for the appropriate nominal maximum size aggregate.

(2) Source and percentage of each aggregate stockpile to be used.

(3) Average gradation of each aggregate stockpile.

(4) Representative samples for each aggregate stockpile:

- (a) A total of 550 pounds of aggregates with the weight of each of the stockpile samples based on that stockpile's proportion.
- (b) 20 pounds of mineral filler such as lime stone or filler earth if proposed to improve gradation characteristics or mix performance.
- (c) 20 pounds of bag house fines if proposed for the mix. See Subsection 418.04.

Aggregate samples when combined according to the Contractor's recommended stockpile percentages shall be within the gradation defined by the target values plus or minus the allowable deviation for each sieve or the samples will not be considered representative.

(5) Results of aggregate quality tests that are dated not more than one year before the date of intended use.

(b) Asphalt binder.

(1) Five 1 gallon samples of the asphalt binder to be used in the mix.

(2) Recent test results from the manufacturer of the asphalt binder including a temperature-viscosity curve.

(3) Material safety data sheets.

(4) Mixing temperature range and minimum compaction temperature for the performance grade asphalt to be used in the mix.

(c) Antistrip additives. When an antistrip additive is needed to meet the mix requirements, furnish the following:

- (1) Sample
 - (a) 1 pint of liquid heat-stable antistrip additive or
 - (b) 10 pounds of dry antistrip additive such as lime or hydraulic cement
- (2) Name of product and certification
- (3) Manufacturer
- (4) Material safety data sheet

(d) Asphalt mixes.

- (1) The location of all commercial mixing plants to be used. (A job-mix formula is required for each plant)
- (2) Mixture design values
 - (a) Target value for asphalt binder content.
 - (b) Theoretical maximum specific gravity (density) according to AASHTO T 209.
 - (c) Percent of theoretical maximum specific gravity at N_{initial} , N_{Design} , and N_{Max} .
 - (d) Percent VMA and VFA
 - (e) Dust-to-Binder Ratio
 - (f) Minimum Tensile Strength Ratio according to AASHTO T 283.

The CO will evaluate the suitability of the material and the proposed job-mix formula.

If a job-mix formula is rejected, submit a new job-mix formula as described above.

Changes to an approved job-mix formula require approval before production. Up to 14 days may be required to evaluate a change. Approved changes in target values will not be applied retroactively for payment.

The CO will deduct all job-mix formula evaluation costs incurred as a result of any of the following:

- * Contractor-requested changes to the approved job-mix formula
- * Contractor requests for additional job-mix formula evaluations
- * Additional testing necessary due to the failure of a submitted job-mix formula

Costs for additional job-mix evaluations will be charged to the Contractor by making an adjustment on the monthly Government's receiving report. The adjustment will be the total cost of performing all verification tests as determined from the EFLHD's published laboratory price list.

418.04 Mixing Plant. Conform to Subsection 401.04.

418.05 Pavers. Conform to Subsection 401.05.

418.06 Surface Preparation. Conform to Subsection 401.06

418.07 Weather Limitations. Conform to Subsection 401.07

418.08 Asphalt Preparation. Uniformly heat the asphalt cement to provide a continuous supply

of the heated asphalt cement from storage to the mixer. Do not heat asphalt cement above 365 EF.

If the job-mix formula requires a liquid heat stable antistripping additive, meter it into the asphalt cement transfer lines at a bulk terminal or mixing plant. Inject the additive for at least 80 percent of the transfer of mixing to obtain uniformity.

418.09 Aggregate Preparation. Conform to Subsection 401.09.

418.10 Mixing. Conform to Subsection 401.10.

418.11 Hauling. Conform to Subsection 401.11.

418.12 Production Start-Up Procedures. Provide 7 days notice before beginning production of an asphalt concrete mix.

On the first day of production, produce sufficient mix to construct a 1,000-foot long control strip, one-lane wide, and at the designated lift thickness. Construct the control strip on the project at an approved location.

At least two weeks prior to the start of paving operations arrange for a pre-paving conference. Coordinate attendance with CO and any application subcontractors. Discuss and submit the following:

1. Proposed schedule of paving operations.
2. List of all equipment (excavation-compaction equipment, laydown, haul, pugmill, etc.), and personnel used in the production and construction of the work.
3. Proposed Traffic Control Plan for moving operations.
4. Discuss Section 153, Contractor Quality Control, minimum frequency schedule for process control sampling and testing.
5. Discuss Subsections 418.12, Production Start-Up Procedures (control strip); 418.13, Placing and Finishing; 418.14, Compacting; and 418.16, Pavement Smoothness.
6. Discuss Subsections 106.05, Statistical Evaluation of Materials for Acceptance, and 418.17, Acceptance.

Construct the control strip using mix production, lay-down, and compaction procedures intended for the entire mix. Cease production after construction of the control strip until the asphalt concrete mix and the control strip are evaluated and accepted.

(a) Asphalt content and aggregate gradation. Take at least five control strip asphalt concrete mix samples and evaluate according to Subsection 418.17. The mix is acceptable if all test results are within specification limits for asphalt content, VMA, and VFA; and the calculated pay factor for asphalt content, gradation, and VMA is 0.90 or greater.

(b) Compaction. Take nuclear density readings behind each roller pass to determine the

roller pattern necessary to achieve required density.

At a minimum of five locations within the control strip, take nuclear gauge readings and cut and test core samples according to Subsection 418.17. Density is acceptable if all tests are above the specification limit or the calculated pay factor is 0.90 or greater. Furnish the CO with the nuclear gauge readings and correlations of the readings to the core specific gravities.

Repeat the control strip process until an acceptable control strip is produced. See Subsection 106.01 for the disposition of material in unacceptable control strips. Accepted control strips may remain in place and will be accepted and measured as a part of the completed pavement. Tests used for the control strip will not be included in the evaluation for payment according to Subsection 106.05. When a control strip is accepted, full production may begin.

Use these start-up procedures when producing material from a different plant or when resuming production after a termination of production due to unsatisfactory quality according to Subsection 106.05.

418.13 Placing and Finishing. Conform to Subsection 401.13.

418.14 Compacting. Provide rollers in good mechanical condition of sufficient number and weight to satisfactorily compact the mixture while it is still in a workable condition. Operate rollers according to the recommendation of the manufacturer.

Thoroughly and uniformly compact the asphalt surface by rolling. Do not cause undue displacement, cracking, or shoving. Continue rolling until all roller marks are eliminated and the required density is obtained. Do not roll the mix after the surface cools below 175°F.

Monitor the compaction process with nuclear density gauges calibrated to the control strip compaction test results. Compact the Superpave fine graded mixtures to no less than 90 percent of the maximum specific gravity (density) determined according to AASHTO T 209. Compact Superpave coarse graded mixtures to no less than 92 percent of the maximum specific gravity (density) according to AASHTO T 209.

Along forms, curbs, headers, walls, and other places not accessible to the rollers, compact the mix with alternate equipment to obtain the required compaction.

418.14A. Rumble Strip. Construct the rumble strip in accordance with Subsection 401.14A. The location and details of the rumble strip are shown on the plans.

418.15 Joints, Trimming Edges, and Cleanup. Conform to Subsection 401.15.

418.16 Pavement Smoothness. Conform to Subsection 401.16.

418.17 Acceptance. Mineral filler and antistripping additive will be evaluated under Subsections 106.02 and 106.03.

Asphalt will be evaluated under Subsections 106.04 and 702.09.

Construction of the Superpave hot asphalt concrete pavement course will be evaluated under Subsections 106.02 and 106.04.

For pay items with a bid schedule quantity ≥ 4000 tons, asphalt content, VMA, gradation, core density, and pavement smoothness will be evaluated under Subsection 106.05. For pay items with a bid schedule quantity < 4000 tons, asphalt content, VMA, gradation, core density, and pavement smoothness will be evaluated under Subsection 106.04. VFA will be evaluated under Subsection 106.04. Other aggregate quality properties will be evaluated under Subsection 106.02 and 106.04. See Table 418-2 for minimum sampling and testing requirements.

(a) Asphalt content. The upper and lower specification limits are the approved job-mix formula target value ± 0.5 percent. See Table 418-2 for the acceptance quality characteristic category.

(b) Aggregate gradation. The upper and lower specification limits are the approved job-mix formula target values plus or minus the allowable deviations shown in Table 703-11. See Table 418-2 for the acceptance quality characteristic categories.

(c) VMA. The lower specification limits are shown in Table 418-1. See Table 418-2 for the acceptance quality characteristic categories.

(d) Density. The lower specification limit is 90 percent for fine graded Superpave mixtures and 92 percent for coarse graded Superpave mixtures of the maximum specific gravity (density) determined according to AASHTO T 209 as part of the job-mix formula evaluation specified in Subsection 418.03. See Table 418-2 for the acceptance quality characteristic category.

(e) Pavement smoothness. See Subsection 418.16. The evaluation will be made after all defective areas are corrected. A subplot is a 0.1-mile section of the traveled way and a lot is the surface course of the entire project. The upper specification limit is shown in Table 401-7. See Table 418-2 for the acceptance quality characteristic category.

(f) VFA. The upper and lower specification limits are shown in Table 418-1.

Measurement

418.18 Measure Superpave hot asphalt concrete pavement, asphalt cement, and antistrip additive by the ton.

Payment

418.19

Superpave hot asphalt concrete pavement with a bid schedule quantity ≥ 4000 tons.

The accepted quantities, measured as provided above, will be paid at the contract price per unit of measurement for the pay items listed below that are shown in the bid schedule except the Superpave hot asphalt concrete pavement contract unit bid price will be adjusted according to Subsection 106.05. Payment will be full compensation for the work

prescribed in this Section. See Subsection 109.05.

Payment for Superpave hot asphalt concrete pavement will be made at a price determined by multiplying the contract unit bid price by the material pay factor. The material pay factor is the lowest single pay factor determined for asphalt content, VMA, aggregate gradation, and core density.

Superpave hot asphalt concrete pavement with a bid schedule quantity < 4000 tons.

The accepted quantities, measured as provided above, will be paid at the contract price per unit of measurement for the pay item listed below that is shown in the bid schedule. Payment will be full compensation for the work prescribed in the Section. See Subsection 109.05.

When the bid schedule contains a pay item for Superpave hot asphalt concrete pavement type I, II, or III pavement smoothness, a separate adjustment will be made for pavement smoothness according to the following formula:

$$A = 20\,000(PF - 1.00)(L)$$

Where:

- A* = Adjustment to contract payment in dollars for pavement smoothness.
- L* = Total project length in lane miles of traveled way. Measure project length to 3 decimal places.
- PF* = Pay factor for smoothness with respect to the upper specification limit determined according to Subsection 106.05 after completion of corrective work.

Payment will be made under:

	Pay Item	Pay Unit
41801ABC	Superpave hot asphalt concrete pavement, 3/8" nominal maximum size aggregate, 0.3 - <3 ESALs, type 3 pavement smoothness	Ton
41801CB	Superpave hot asphalt concrete pavement, 3/4" nominal maximum size aggregate 0.3 - <3 ESALs	Ton
41802CB	Superpave hot asphalt concrete pavement 3/4" nominal maximum size aggregate 0.3 - <3 ESALs wedge and leveling course	Ton

**Table 418-2
Acceptance Sampling and Testing Frequency**

Material or Product	Property or Characteristic	Category	Test Methods or Specifications	Frequency	Sampling Point
Asphalt Binder	Performance Grade	N/A	AASHTO MP 1	1 per 2,500 T	Sampled at the mixing plant
Superpave hot asphalt concrete pavement	Asphalt content	I	AASHTO T 308	1 per 500 T	Behind laydown machine before rolling
	VMA	I	AASHTO PP28	1 per 500 T	Behind laydown machine before rolling
	Gradation ⁽³⁾ 3/8 inch No. 4 No. 200 Other specified sieves	I	AASHTO T 30	1 per 500 T	Behind laydown machine before rolling
		I			
		I			
		II			
	Core density ⁽¹⁾	I	AASHTO T 166 and AASHTO T 209 ⁽⁴⁾	1 per 500 T	In place after compaction
Smoothness ⁽²⁾	I	FLH T 504	See Subsection 418.16	See Subsection 418.16	
VFA		AASHTO PP28	1 per 500 T	Behind laydown machine before rolling	

- (1) Cut core samples from the compacted pavement according to AASHTO T 230 method B. Fill and compact the sample holes with asphalt concrete mixture.
- (2) Applies only to an item used as a final surface course constructed under the contract.
- (3) Use only sieves indicated for the specified gradation.
- (4) AASHTO T 209 on loose mix will be required only for the first five and then one per day thereafter.

Section 501.--PORTLAND CEMENT CONCRETE PAVEMENT

501.02. Add the following:

Furnish steel plates and keep available on the project for emergency use.

501.03. Add the following:

Accelerated Full-depth Patching. Design the concrete mix according to Subsection 552.03 and conform to Table 501-1a. Make test specimens according to AASHTO T 23, except that specimens being tested for 7 –hour compressive strength shall remain in the molds until tested according to AASHTO T22.

**Table 501-1a
Portland Cement Concrete Pavement Composition**

Water/Cement Ratio (maximum)	Temperature of Concrete (°F)	Slump (inches)	Air Content (%)	Aggregate Size (AASHTO M 43)	7-Hour Minimum Compressive Strength (psi) ⁽¹⁾⁽²⁾	28 Day f'c Compressive Strength (psi) ⁽²⁾
0.42	70±10	5.0±1.5	5½ ± 1½	No. 67	1,200	3,500

(1) Fabricate at least 3 cylinders for the 7 hour compressive strength as safeguard against specimen damage during demolding

(2) A compressive strength test is a minimum of two specimens tested at each age.

501.11. Add the following to the first paragraph:

Seal joints within five days after patching to prevent spalling.

501.12. Delete the text and substitute the following:

After the concrete has sufficiently hardened, measure the smoothness of the surface. Use a 10-foot metal straightedge to measure at right angles and parallel to the centerline. Defective areas are surface deviations in excess of 0.25 inch in 10 feet between any two contacts of the straightedge with the surface. Correct defective areas. Obtain approval for the proposed method of correction. Re-measure corrected areas.

501.13. Add the following:

Schedule the patching operation so that all areas where the concrete pavement has been removed are repaired during the same work period and the roadway opened to traffic according to Section 156. Complete all concrete operations sufficiently before opening the lane to traffic to allow the concrete to have attained sufficient strength to support traffic according to Subsection 501.14. In case of emergency, temporarily fill and plate the repair areas according to Subsection 501.14.

501.14. Add the following:

For accelerated full-depth patches, do not allow traffic on new concrete pavement until the minimum compressive strength has reached 1,200 psi according to AASHTO T 22.

501.14 Add the following:

If an emergency or unforeseen circumstance prevents the completion of a pavement patch before opening the roadway, backfill and compact the excavation with aggregate base and cover with a steel plate so that the lane can be immediately opened to traffic. At the beginning of the next day's work, completely remove the aggregate, in a manner which will not disturb the subgrade or any dowels, load transfer tie bars, or load transfer assemblies which may have been previously placed.

Place steel plates over concrete patches only if the concrete has not developed sufficient strength as determined by the CO.

501.15. Add the following:

The minimum test frequency for slump and air content will be 1 per 20 yd³ but not less than one per day. A compressive strength test is a minimum of two specimens tested at each age. Compressive strength specimens shall be fabricated at intervals of 1 set of per 40 yd³ but not less than one per day. Concrete compressive strength will be evaluated under Subsection 106.05. The maximum pay factor for concrete compressive strength will be 1.0.

501.17. Add the following pay item:

<u>Pay Item</u>	<u>Pay Unit</u>
50101N Reinforced portland cement concrete pavement, 6 inch depth – (Base repair / patching)	Square yard

Section 552.--STRUCTURAL CONCRETE

552.01. Add the following:

This work also includes the repair of spalls and other deterioration found on the concrete deck of the L Street Bridge. It also includes the furnishing, placing, finishing, and curing of a Latex Modified Concrete (LMC) bridge deck overlay .

Restrictions. Placement of LMC overlay on bridge decks is prohibited between November 30 and April 1.

552.02. Add the following materials:

High strength patching compound (polymer mortar)
725.22(b)

552.03 Composition (Concrete Mix Design).: Add the following

Design and produce a Latex Modified Concrete Class LMC that conforms to Tables 552-1A, Tables 552-1B, and Table 552-1C. Maximum size aggregate for latex modified concrete is an AASHTO M-43 #7 gradation. Provide a Class LMC overlay concrete that bonds to the substrate concrete.

**Table 552-1A
Composition of Latex Modified Concrete (LMC)**

Class of Concrete	Minimum Cementitious Content Pounds/ yd³	Maximum Cementitious Content Pounds/ yd³	Maximum W/C Ratio	Slump⁽²⁾ (inch)	Minimum Plastic Air⁽³⁾ Content	Nominal Maximum Aggregate Size NMSA (inch)
LMC ⁽¹⁾ (Overlay)	600	800	0.38	3 to 6	3%	¹ / ₂ (AASHTO M43 #7 Gradation)

- (1) A latex modified concrete with 3.5 gallons of modifier per 94 pounds of cement.
 (2) Measure the slump 4 to 5 minutes after the concrete is discharged from the mixer.
 (3) Measure the plastic air content 4 to 5 minutes after the concrete is discharged from the mixer

Maximum Plastic Air Content for Latex Modified Concrete (LMC) is 10 percent

552.03. Delete the third paragraph and substitute the following:

Verify Latex Modified Concrete (LMC) mixture design with trial mixes prepared according to ACI 318 from proposed source(s) or with previous concrete production data for the mixture design submitted from proposed source(s). Verify trial batch compressive strengths of submitted concrete mixture designs at 1, 2, 4, 7, 14, and 28 days. Compressive strength test results of concrete mixtures are to be used to develop a compressive strength – time temperature (maturity) relationship per AASHTO T276. Submit written concrete mix designs along with compressive strength- maturity relationships for approval at least 36 days before production.

552.03. Add the following:

Use Type I or II portland cement in all other concrete.

LMC Performance Characteristics: LMC Performance Characteristics are defined as performance characteristics that are in addition to standard structural concrete properties of freeze thaw durability, compressive strength, slump, and plastic air content. LMC Performance characteristics are:

- (a) **Maximum Chloride Permeability:** Maximum chloride permeability determined according to AASHTO T 277. Measured value is charge passed (coulombs).

(1) **Specimens and curing:** Cure AASHTO T 277 chloride permeability specimens for two days according to AASHTO M 201. AIR DRY specimens for Latex Polymerization for 2 days. Then moist cure at 38°C ± 5°C until AASHTO T 277 sample conditioning. Test for chloride permeability at 28 days. The value will be the result of the average of tests on two specimens. Provide a concrete mixture with permeability values below the maximum value specified in Table

552-1B.

(b) Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension (Pull-off Method): Bond Strength is determined according to ASTM C1583. – Bond strength is specified for LMC Overlay Concrete Items.

(1) Curing: Test specimens for Overlay Bond Strength are to be cured the same length of time as the structural elements the samples represent.

**Table 552-1B
Performance Characteristics for Latex Modified Concrete Overlay**

Performance Characteristic	Standard Test Method	Value
Maximum Chloride Permeability (CP) AT 28 DAYS	AASHTO T 277 ⁽¹⁾	<1500 Coulombs
Design Compressive Strength (f'_c) AT 28 DAYS	AASHTO T 22	4000 psi
Minimum Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension (Pull-off Method) AT 7 DAYS	ASTM C1583	>150 psi

(1) Cure Specimens According to 552.03 (a)(1)

**Table 552-1C
Required Compressive Strength**

Specified design strength (f'_c) (psi)	Required compressive strength (f'_{cr}) psi
Less than 4000	$f'_c + 1000$
Greater than 4000	$f'_c + 1200$

LMC-Test Placement. Submit LMC mixture design to the CO for review prior to test placement. Hold a pre-placement conference with CO. Conduct a test placement of LMC mixture design on project site at an approved location. For the LMC bridge deck overlay, place a section of concrete overlay (9 ft x 9 ft minimum dimensions, 2 inch thickness) on a previously cast base slab. Provide Concrete Maturity Meter and allow for temperature probe installation according to AASHTO T325 prior to HPC test placement.

Provide a Concrete Maturity Meter that meets the following requirements:

- Rugged, waterproof construction that can withstand the construction site environment
- Able to operate without an external power source for a minimum of 14 days
- Able to collect and store temperature data for a minimum of 14 days
- Able to collect and store maturity data for a minimum of 14 days
- Able to determine equivalent maturity hours according to the Arrhenius -Function.

Install probes according to AASHTO T325-4 – Estimating the Strength of Concrete in Transportation Construction by Maturity Tests. Demonstrate Maturity Meter operation during

test placement. Test the strength of the bond between the overlay and the base slab to demonstrate that the minimum required bond strength is achieved. Demonstrate methods to be utilized to keep surface LMC concrete sufficiently moist before completion of finishing operation and curing commences.

Sample for specified performance characteristics. Fabricate specimens according to requirements of **Table 552-1D**.

Table 552-1D
Specimen Sampling Requirements for LMC Concrete

Performance Characteristic	Specimen Dimensions/Type	Number of Samples per Test
Maximum Chloride Permeability (CP) (Coulombs)	4 x 8 cylinders	3
Compressive Strength (1,2,4, 7, 14, 28 day strengths)	4 x 8 cylinders	16 (minimum 2 per test age) + 4 extra for the instance of faulty cylinders

Monitor the maximum temperature differential from the center of the concrete cross section to the surface of the concrete. Provide means of internal cooling, external heating, or insulation to insure the temperature differential does not exceed 35°F during placement, curing, and immediately after form stripping or curing ends. Demonstrate methods chosen to keep maximum temperature differential less than 35°F.

Begin production only after the mix design is approved based on LMC– Test Placement performance.

552.06. Add the following:

LMC – Mixers: The proportioning and mixing equipment used for Latex modified concrete overlay material shall be an integral mobile unit having the capacity and continuous mixing capability to permit the finishing operations to proceed at a constant rate so that final finishing can be completed prior to the formation of a plastic film on the LMC surface. It shall consistently produce a uniformly blended mixture within the specified air content and slump limits. The mixer shall also:

1. Be capable of producing not less than 6.0 yd³ of LMC without recharging.
2. Be equipped with a recording meter with a ticket printout device to record an indication of the cement quantity being introduced into the mix. The metering device shall be accurate within a tolerance of -1 to -3 percent.
3. Be equipped with a latex metering device to indicate volume dispensed. The metering device shall be accurate within a tolerance of -1 to +2 percent. In addition, the latex tank shall have a stand pipe marked in liters.

4. Be equipped with a water flow indicator, and have a water flow control that is readily adjustable to provide for minor variations in aggregate moisture content. The flow indicator shall be accurate within a tolerance of 2 percent in the range of expected use.
5. Be equipped with a control to regulate the quantity of each of the LMC components to permit production of a mix having the specified composition. To ensure that the mixer can accurately proportion and blend all components of the LMC on a continuous or intermittent basis, the mixer shall be calibrated prior to the start of the overlay placement. The CO may require recalibration of the cement, latex and water metering devices, when deemed necessary.
6. Be capable of discharging mixed LMC through a conventional chute directly in front of the finishing machine.
7. Be kept clean, free of partially dried or hardened materials, and properly operating at all times.
8. Mixers have been calibrated with the materials for the proposed mix design within the previous 6 months.

552.09(b)(4). Add the following:

Take samples according to AASHTO T 141 from specified loads. See Table **552-7** for sampling frequency for LMC Performance Characteristics. Composite samples are not required. The point of sampling is from the discharge stream at the point of placement. Provide required specimen molds. Fabricate the number of specimens as listed in **Table 552-1D** at each sampling frequency for LMC Performance Characteristics as stipulated in **Table 552-7**.

Provide for compressive strength testing, Chloride Permeability, and Direct Tension (Pull-off Method), by an independent laboratory, qualified to perform the testing, and as approved by the CO.

Using Time Temperature (Maturity) Relationship developed for LMC overlay concrete to determine in place concrete compressive strength of overlay. Time – temperature measurements are to be taken by Contractor supplied concrete maturity meters. Measure concrete temperature and calculate in-place maturity to verify compressive strength of in place overlay prior to allowing traffic on overlay.

552.10. Delete the Subsection and substitute the following:

552.10 Temperature and Weather Conditions. Maintain the temperature of the LMC concrete overlay mixture just before placement between 45 and 80°F

During times when weather conditions are questionable to allow concrete pours, the CO may decide to not allow concrete to be poured until conditions improve to within the project requirements. The CO will give the Contractor as much advance notice as possible when not allowing a concrete pour. The Government will not be liable for any costs incurred by the Contractor for results of adverse weather conditions.

Place LMC concrete overlay only when the ambient air temperature is 45°F and rising. At temperatures above 80°F, the CO may require placement to be made at night or early morning hours if a satisfactory finished surface is not being achieved.

(a) Cold weather. Cold weather is defined as a period when, for more than 3 consecutive days, the following conditions exist: (1) the average of the highest and the lowest temperatures occurring during the period from midnight to midnight is less than 40°F and (2) the air temperature is not greater than 50°F for more than one-half of any 24-hour period.

When cold weather is reasonably expected or has occurred within 7 days of anticipated concrete placement, submit a detailed plan for the producing, transporting, placing, protecting, curing, and temperature monitoring of concrete during cold weather. ACI 306 may be used for guidance in developing the plan. Include procedures for accommodating abrupt changes in weather conditions. Do not commence placement until plan is accepted. Acceptance of a plan will take at least 1 day.

Have all material and equipment required for protection available at or near the project before commencing cold weather concreting.

The temperature of any surface that comes into contact with fresh concrete shall be at least 45 °F and shall be maintained at a temperature of 45°F or above during the placement of the concrete.

Place heaters and direct ducts so as not to cause concrete drying or fire hazards. Vent exhaust flue gases from combustion heating units to the outside of any enclosures. Heat the concrete components in a manner that is not detrimental to the mix. Do not heat cement or permit the cement to come into contact with aggregates that are hotter than 100°F. Concrete at the time of placement shall be of uniform temperature and free of frost lumps. Do not heat aggregates with a direct flame or on sheet metal over fire. Do not heat fine aggregate by direct steam. The addition of salts to prevent freezing is not permitted.

Monitor the concrete temperature in the center of the existing concrete bridge deck cross section. Monitor the internal concrete temperature of the LMC overlay so the temperature differential between the center of the existing concrete bridge deck concrete temperature, the LMC overlay, the concrete surface, and ambient air temperature can be determined. Provide means of internal cooling, external heating, or insulation to insure the temperature differential from the center of the existing concrete bridge deck to the surface of the LMC overlay does not exceed 35°F during placement, moist curing, and air curing of LMC overlay prior to removal of protection.

When the 75% of the design compressive strength (f'_c) as stipulated in Table 552-1B and measured by Concrete Maturity Meter readings has been achieved **and** the stipulated wet curing and air dry curing periods exceeded, protection to the section may be removed. However at no time can the maximum allowable concrete temperature differential from the interior of the concrete to the surface during the cooling period exceeds 35°F To prevent rapid convective heat loss from the surface, do not start cooling period if average winds peed exceeds 10 mph as measured 2 feet from concrete surface. Provided that the maximum cross sectional allowable temperature differential is not surpassed, and wind speed is less than 10 mph as measured 2 feet from concrete surface, cooling can commence but not to exceed the maximum values shown in Table 552-3.

Table 552- 3
Concrete Surface Temperatures

Maximum section size dimension, inches	12
Minimum temperature of concrete during protection period	45 °F
Maximum allowable temperature drop in any 24-hour period after end of protection	40°F

(b) Hot weather. Hot weather is any time during the concrete placement that the ambient temperature at the work site is above 85°F.

In hot weather, cool all surfaces that come in contact with the mix to below 80°F. Cool by covering with wet burlap or cotton mats, fog spraying with water, covering with protective housing, or by other approved methods.

During placement, maintain concrete temperature by using any combination of shading the material storage areas or production equipment; cooling the aggregate by sprinkling; cooling aggregate and water by refrigeration; or replacing a portion or all of the mix water with flaked or crushed ice to the extent that the ice completely melts during mixing of the concrete.

During moist curing the maximum allowable concrete temperature differential from the center of existing concrete bridge deck cross section to the surface of the LMC overlay is 35°F.

When the required period of moist curing has elapsed, removal of moist curing materials may commence. However at no time can the maximum allowable concrete temperature differential from the center of existing concrete bridge deck cross section to the surface after the removal of the moist curing materials during the cooling period exceed 35°F. To prevent rapid evaporative cooling from the moist concrete surface, do not start the cooling period if calculated evaporation rate from Figure 552-1 exceeds 0.15 lb/ft²/hr. Remove source of water from moist curing materials and allow to dry out over time to reduce the evaporative cooling risk.

(c) Evaporation. When placing concrete on bridge decks or other exposed slabs, limit expected evaporation rate. Relative humidity, air temperature, and wind speed must be measured at the site to account for the existing microclimate. **Measure values at a distance of 2 feet above the concrete surface.** Measure at most exposed **area of structure.** Wind speed for calculating the expected evaporation rate is to be determined onsite using an anemometer with a ±4% full scale accuracy. Measure the % Relative Humidity using a psychrometer or hygrometer with a ± 2% full scale accuracy. The determined wind speed, relative humidity, air temperature, and expected concrete temperature will be used to select the level of evaporation control as calculated according to Figure 552-1.

Fog the fresh placed concrete overlay with the use of pressure sprayers/ atomizers for LMC concrete, no exceptions regardless of the calculated evaporation rate. Perform the fogging by using pressure sprayers/atomizers in a way that is sufficient to maintain a moist concrete surface. Do not apply the moisture from the nozzle under pressure directly upon the concrete and do not allow it to accumulate on the surface in a quantity sufficient to cause a flow or wash the surface. Continue fogging the surface of the concrete until all finishing operations complete and the

surface has been covered. Fogging of the surface can be stopped once water curing with burlap / burlene / cotton mats, etc can commence

Fogging Equipment: Equipment demonstrated during the test panel placement or CO approved substitute must satisfy the following conditions:

- 1) Be present on site prior to the start of concrete placement
- 2) Be in working order prior to the start of the LMC overlay placement. Demonstrate equipment operation to CO.
- 3) Have personnel assigned to operate equipment during bridge deck placement.

Concrete placement will not be allowed unless all three conditions are satisfied.

If the combination of ambient air temperature, relative humidity, expected concrete delivery temperature, and windspeed results in a nomograph value exceeds **0.05 lb /ft²/hr** as per Figure 552-1, provide windbreaks in addition to foggers.

If the combination of ambient air temperature, relative humidity, expected concrete delivery temperature, and windspeed results in a nomograph value that exceeds **0.15 lb /ft²/hr** as per Figure 552-1, do not place bridge deck and overlay concrete regardless of protective measures in place.

(d) Rain. At all times during and immediately after placement, protect the concrete from rain.

552.11(a). Add the following:

Prior to placement of LMC concrete overlay, remove the asphalt concrete overlay, and the aphaltic membrane without damaging the concrete bridge deck. Sound bridge deck and repair all badly deteriorated areas on the deck before micromilling of concrete for LMC overlay placement.

Concrete Repairs: Determine location of unsound concrete. Develop repair plan for review by CO. Upon CO approval, remove unsound concrete per means and methods outlined in approved repair plan.

Saw cut approximately 0.50 inch deep along all boundaries of the repair areas. Point saw cuts, extending beyond the limits of repair areas, flush with the surface with portland cement or epoxy mortar.

After removal of deteriorated or unsound concrete, abrasive shot blast exposed structural steel, reinforcing steel, and any concrete surfaces that will be in contact with repair material until free of rust and foreign material. Inspect exposed steel. Remove and replace all badly deteriorated reinforcing steel.

Where the bond between existing concrete and reinforcing steel has been destroyed, remove the concrete adjacent to the steel to a depth that will permit new concrete to bond to the entire periphery of the exposed steel. Provide a minimum of 0.75 inch clearance behind the steel.

Clean the sound concrete surface by flushing with clean water from a high pressure water jet or compressed air. If compressed air is used provide a filter in the air line to ensure

that the air is oil-free.

Less the 24 hours before placing repair concrete, clean the existing concrete surface and any exposed reinforcement of all loose material, dust, etc., by abrasive shot blasting and thoroughly flushing with clean water under pressure or compressed air. If compressed air is used provide a filter in the air line to ensure that the air is oil-free.

For the concrete repairs use a Class D(AE) concrete with an AASHTO M43 #7 gradation, or a high strength concrete patching compound such as **Five Star Highway Patch or Equivalent** placed in accordance with the manufacturer's recommendations. Sample repair concrete for compressive strength. Fill concrete patches such that the surface of the patch is level with the surface of the sound concrete deck. Moist cure patches using wet burlap and covering with polyethylene sheeting. Moist cure repair areas until compressive strength of 3000 psi is obtained.

Micromilling: Rotary micromill surface of concrete deck including repaired areas to provide good mechanical bond. Mill Provide a minimum profile of **0.2 inches** after milling. Micromill as close as possible to armored joints without causing any damage. In areas of the deck that can not be micromilled, provide for the minimum surface profile using a **CO** approved method .

Preplacement Preparation: Within 24 hours immediately preceding the placement of bridge deck overlay concrete, clean the micromilled concrete deck by shotblasting to remove concrete laitance, oils, and fuels, and other foreign and loose materials detrimental to achieving a bond.

The entire surface shall be further cleaned by air blast followed by flushing with water. If compressed air is used provide a filter in the air line to ensure that the air is oil-free. Prior to placing the LMC overlay, the surface shall be wetted and kept wet for at least **4 hours** prior to placement. Remove all puddles of standing water before the start of placement operations.

Do not use a bonding agent between LMC overlay and existing substrate concrete. Consolidate and finish the overlay concrete at grade with vibrating devices. Spud vibration will be required at edges and adjacent to expansion joints.

Install a construction dam or bulkhead in the event of a delay greater than 1 hour in the placement operation. During delays of 30 minutes or more but less than 1 hour, cover the end of the placement with several layers of wet burlap to prevent drying out of the overlay.

Form the vertical edge at construction joints by bulkhead or sawcuts. Ensure sawcuts are straight and vertical.

The Latex Modified Concrete overlay in each span, lane or the entire bridge, as the case may be, shall be applied in one continuous pour. No transverse joints are permitted.

552.11(f). Delete the Subsection heading and substitute the following:

552.14(a) Delete the first sentence and substitute the following:

For bridge decks, top slabs of structures serving as finished pavement, or deck overlays, use a self-propelled rotating cylinder machine, either single or double roller, that is capable of forward or reverse movement under positive control. The machine shall be equipped with an oscillating screed and any other devices required to continuously spread, consolidate, and finish the plastic concrete. The screed shall extend the full width of the deck.

552.14(c)(1). Add the following:

After the concrete overlay bond strength has met the requirements of Table 552-1B, groove the surface by mechanical saw-cut. Cut grooves that are 3.2 mm wide by 3.2 mm deep and spaced 19 mm apart. Contain all slurry and remove it from the project.

552.15. Add the following:

Latex Modified Concrete Overlay: Due to the large surface area to volume ratio of the LMC concrete overlay, extra care is required to prevent plastic shrinkage cracking and crusting of surface prior to completion of finishing operations. Keep humidity above the surface of LMC concrete sufficiently high to prevent plastic shrinkage cracking and crusting of surface. Use methods described in Subsection 552.10 (c).

Moist cure the LMC overlay concrete by the water method for no less than:

48 hours **or**

The time in hours for the concrete to obtain 48 Maturity Hours as determined by the Concrete Maturity Meter.

During this period maintain moist-curing by covering the surface with burlap and keeping the burlap wet and covered with plastic sheeting for the duration of the curing. Immediately after screeding and until the application of moist curing do not allow the surface of the freshly placed concrete to dry.

During moist-curing, maintain the concrete temperature above 45°F at the outer most surfaces of the concrete mass. Remove plastic sheeting and burlap after 48 hours provided that the difference between the ambient air temperature and maximum concrete temperature of the concrete deck is less than 35°F as indicated on the Concrete Maturity meter.

Air cure LMC concrete overlay **after moist curing by the water method is completed** for no less than:

An additional 48 hours **or**

The time in hours for the concrete to obtain 96 Maturity Hours as determined by the Concrete Maturity Meter.

Verify bond strength of LMC overlay according to ASTM C1583 after air curing .

552.15(a). Delete the first and second sentences and add the following:

For formed surfaces, leave the forms in place without loosening a minimum of 3 days.

552.18. Delete the second sentence of the third paragraph and substitute the following:

Do not allow traffic on LMC overlay until wet curing and air curing are complete, and the overlay has obtained a strength of at least 3000 psi as determined by Concrete Maturity Meter reading, and has been verified to, meet or exceed the performance requirements in Table 552-1B for the average overlay bond strength as measured in uniaxial tension according to ASTM C1583-04.

552.19. Add the following:

For LMC concrete overlay, the concrete compressive strength will be evaluated under Subsection 106.05. The lower specification limit is the minimum required compressive strength (f_c') at 28 days. See Table 552-7 for the acceptance quality characteristic category.

For the LMC overlay, the tensile bond strength as tested according to ASTM C1583 will be evaluated under Subsection 106.04. A single tensile bond strength test result is the average result of 2 valid tests.

Reject all concrete with an air content less than, or in excess of, the range permitted by the approved mix design. If the approved mix design does not include a maximum air content, use a maximum allowable value of 10 percent.

Maximum Chloride Permeability will be evaluated under Subsection 106.04. See Table 552-7 for minimum sampling and testing. The upper specification limit is the maximum specified chloride permeability value specified in the contract. A single chloride permeability test result is the average result from 2 samples cast from the same load and tested.

Excavation and backfill will be evaluated under Section 208.

Micromilling will be evaluated under Section 413.

Materials used for concrete repair will be evaluated under Subsection 106.04.

552.19. Add the following to Table 552-7:

Material or Product	Property or Characteristic	Category	Test Methods or Specifications	Frequency	Sampling Point
LMC Overlay	Slump	-	AASHTO T 119	1 per load ⁽⁶⁾	Discharge stream at Point of placement ⁽⁵⁾
	Air content	-	AASHTO T 152 or AASHTO T 196	1 per load ⁽⁶⁾	Discharge stream at Point of placement ⁽⁵⁾
	Unit weight	-	AASHTO T121	1 per load ⁽⁶⁾	Discharge stream at Point of placement ⁽⁵⁾
	Temperature	-	Thermometer	1 per load ⁽⁶⁾	Discharge stream at Point of placement ⁽⁵⁾
	Making test specimens Compressive strength ⁽⁹⁾	II	AASHTO T 23 AASHTO T 22	1 set per 30 yd ³ but not less than 1 set each day ^{(7),(8)}	Discharge stream at point of placement ⁽⁵⁾
	Maximum Chloride Permeability (CP)	-	AASHTO T 277 ⁽¹⁰⁾	1 set per 30 yd ³ but not less than 1 set each day ⁽⁸⁾	Discharge stream at point of placement ⁽⁵⁾
	Average Bond strength of the overlay, as measured in uniaxial tension (Pull Off Test)	-	ASTM C1583	1 set per 3000 ft ² of bridge deck overlay but not less than 1 set each day of concrete placement ⁽¹¹⁾	Random Locations on concrete overlay for each day of placement. Testing done prior to grooving of deck for skid resistance

(5) Sample according to AASHTO T 141 except composite samples are not required.

(6) If a volumetric mixer is used for LMC overlay, sample at start of placement after an initial discharge of 1 yd³. Continue sampling at 10 yd³ intervals

(7) A single compressive strength test result for LMC Overlay is the average result from 2 cylinders cast from the same load and tested at the maturity age specified.

(8) See Table 552-1D for number of specimens per characteristic to fabricate.

(9) Refer to Subsection 552.09(b)(4).

(10) Cure Specimens According to 552.03 (a)(1)

(11) A single tensile bond strength test result as tested according to ASTM C1583 is the average result of 2 valid tests.

552.19. Add the following:

Excavation and backfill will be evaluated under Section 208.

552.19. Add the following:

Materials used for concrete repair will be evaluated under Subsection 106.04.

552.20. Add the following:

Excavation and backfill will be measured and paid for under Section 208.

552.20 Add the following:

Structural concrete for overlay will be measured by the square yard, top surface measured.

Repair concrete will be measured by the square foot.

Cleaning concrete surfaces will be measured by the square foot.

552.21. Add the following pay item:

<u>Pay Item</u>	<u>Pay Unit</u>
55207 Structural concrete, class <u>E(AE)</u> for overlay	Square yard
55209 Repair concrete	Square foot
55227 Clean concrete surface	Square foot

Section 601.--MINOR CONCRETE STRUCTURES

601.03. Delete the first sentence and substitute the following:

Conform to Table 601-1 or furnish a concrete mix used locally by either a Federal or State agency for the construction of minor concrete structures. The mix shall meet the minimum 28-day compressive strength requirement of Table 601-1.

Section 602.--CULVERTS AND DRAINS

602.03 General. Delete this subsection and substitute the following:

602.03 General. Furnish culvert pipe with a wall thickness not less than that shown on the plans or determined from the fill-height tables included in the plans. Use the same material and coating on all contiguous pipe sections and special sections, such as elbows and branch connections. For culvert extensions, furnish the same material as the existing culvert.

The plans show the approximate location and length of culverts. Determine final location, skew, length, elevations, and grade according to Subsection 152.03(g). Do not order culvert material until the CO has accepted the final structure length and alignment.

Perform excavation and backfill work under Section 209.

602.03. Add the following:

Furnish culvert pipe from the following groups:

- Metallic coated corrugated steel pipe, Type I or II, 10 gage minimum.
- Aluminum alloy corrugated pipe, Type I or II, 10 gage minimum.
- Reinforced concrete pipe, Class 3.

602.03. Add the following:

When the proposed pipe is an extension of or connects to an existing pipe system, use the same material (group) as the existing pipe.

602.05 Laying Metal Pipe. Delete the second paragraph and substitute the following:

Join pipe sections together with soil tight bell and spigot joints or coupling bands according to AASHTO M 36 or M 196. Limit the use of bell and spigot joints to slopes of 10 percent or less and limit the use of coupling bands with projections (dimples) to attaching prefabricated flared end sections.

Section 604.--MANHOLES, INLETS, AND CATCH BASINS

604.01. Add the following:

This work also includes replacing metal frames and grates.

604.04. Add the following:

The Catch Basins, Type 2 in the Thompson Boat Center Parking lot are to be connected to the existing inlet and outlet pipes. Should these pipes have been damaged or sections removed during the removal of the existing inlets they shall be replaced or repaired as necessary.

604.09. Add the following:

Measure metal grates by the each.

Measure concrete inlet tops by the each.

The repair or replacement of sections of existing pipe to which new inlets are being connected will not be measured.

604.10. Add the following pay item:

<u>Pay Item</u>	<u>Pay Unit</u>
60413 Concrete inlet tops	Each
60414 Metal grate, type ___	Each

**Section 605.--UNDERDRAINS, SHEET DRAINS, AND
PAVEMENT EDGE DRAINS**

605.02. Add the following:

Furnish pipe for perforated or non-perforated underdrains from the following groups:

- (1) Metallic coated corrugated steel pipe for underdrains, Type III, 0.05 in (18 gage) minimum.
- (2) Aluminum alloy corrugated pipe for underdrains, Type III, 0.05 in (18 gage) minimum.
- (3) Concrete pipe, Type 1 or 2.
- (4) Plastic pipe.

Furnish steel pipe with a protective coating of polymeric material.

Furnish steel pipe with a protective coating of asphalt material.

605.03 General. Add the following after the second paragraph:

Do not install drain material until the CO has accepted the final location and length.

**Section 607.--CLEANING, RECONDITIONING,
AND REPAIRING EXISTING DRAINAGE STRUCTURES**

607.01. Add the following:

This work also consists of lining existing culverts.

This work also includes cleaning drainage structures, storm drain inlets.

607.01A. Material shall conform to the following Subsections:

Portland cement	701.01
Water	725.01

Furnish a cement mortar pipe lining conforming to AWWA C 602.

Furnish sand meeting the following gradation:

<u>Sieve Sizes</u>	<u>Percentage Passing</u>
14	100
20	95-100
30	85-95
40	15-35
100	1.5-5
200	1-3
37.5 μ m	0

The dry components of the cement mortar shall consist of the following proportions by weight: sand - 50%, and portland cement - 50%.

After addition of the water, provide a mortar that is well mixed and will provide a dense, homogeneous lining that will hold firmly against the pipe surface. Carefully control and keep the water-cement ratio to a minimum. Allow for any existing moisture on the walls of the pipe. Premix the mortar by machine for a sufficient length of time to obtain maximum plasticity, or 3 minutes minimum.

607.04. Add the following:

Provide for the control and disposal of any accumulation of water that interferes with construction.

Remove and dispose all silt, sand, debris, detritus, or other sedimentation or foreign material from within pipe to be lined, and from inlet and outlet areas.

Remove all dirt, rust, tubercles, scale, loose or deteriorated remnants of old lining materials, accumulated water, and all other foreign materials from the interior surface of the pipe before lining. After cleaning, the interior of the pipe shall present a surface free of all foreign material except nondeteriorated original coating.

Add the following after Subsection 607.06:

607.06A. Pipe Lining. Install pipe lining according to the manufacturer's recommendations. Hand-place cement mortar lining only at sharp bends and special locations where machine placing is impracticable.

Patch holes in the existing pipe with cement mortar before the application of the lining.

Pave existing culvert inverts with cement mortar if they are deteriorated to the extent that an acceptable lining would not be achieved before centrifugal application of linings. Fill cavities beneath badly deteriorated inverts with concrete, grout, or other method acceptable to the CO. Close the pipe at both ends to prevent the circulation of air. After the final pass with the machine, introduce water into the closed section to create a moist atmosphere and keep the lining damp. Maintain curing for a minimum of 3 calendar days.

607.06B. Cleaning Drainage Structures, Storm Drain Inlets. Clean existing inlets by removing all trash, debris and accumulated silt from the inlet including any trash and debris that may be wedged in the grate.

607.07. Add the following:

Lining materials will be evaluated under Subsection 106.03. Lining construction will be evaluated under Subsection 106.04. After curing, drill holes (1 per 50 ft) to verify lining thickness at random locations selected by the CO. Patch the hole after thickness verification.

607.08. Add the following:

Measure pipe lining by the foot along the slope.

Cleaning of culverts before lining will not be measured.

Measure cleaning drainage structures by the each.

607.09. Add the following pay item:

<u>Pay Item</u>	<u>Pay Unit</u>
60705 Lining ___-in pipe culvert	Linear foot
60710 Clean drainage structure	Each

Section 609.--CURB AND GUTTER

609.02.Add the following:

Furnish an air-entrained, portland cement concrete dry mix (1 part cement, 2 parts sand, 4 parts crushed stone) with just enough water added to the mix to make the mix adhesive.

609.04. Delete the second sentence of the first paragraph and substitute the following:

Set stone curb in dry-pack concrete so the curb face and top are to line and grade.

609.10.Delete the third paragraph and substitute the following:

Bed course material will not be measured.

Section 611.--WATER SYSTEMS

611.03. Add the following:

Adjust existing valves to the proposed grade.

Dig test pits to locate existing utilities in accordance with Section 638.

611.08. Add the following:

Measure locating utilities under Section 638.

Section 612.--SANITARY SEWER SYSTEMS

612.07. Add the following:

Measure manhole adjustments under Section 604.

Section 615.--SIDEWALKS, DRIVE PADS, AND PAVED MEDIANS

615.01. Add the following:

This work also includes construction of the Hiker/Biker trail.

615.04(a)(1) Expansion joints. Delete the text of this paragraph and substitute the following:

(1) Expansion joints. Construct at intervals not exceeding 20 feet. Use $\frac{3}{4}$ inch thick preformed expansion joint filler for the full depth of the joints. When joints are to be sealed, use joint sealant conforming to subsection 712.01(a)(5). Coordinate the location of expansion joints with expansion joints in the curb.

615.04(a)(3) Construction joints. Add the following to the end of the paragraph:

Seal joints using joint sealant conforming to subsection 712.01(a)(5).

615.04 (b) Finishes. Add the following after (2):

(1) Wheelchair ramps to have a truncated dome finish as shown on the plans. This portion of the ramp shall be precast and the Contractor shall submit a shop drawing showing the details of this finish or a sample to the CO for approval prior to any installation.

615.08. Add the following:

Measure wheelchair ramps by the square yard.

Measure the hiker/biker trail by the square yard

The aggregate base for the hiker/biker trail will not be measured.

615.09. Add the following at the end of the first paragraph:

The hiker/biker trail, measured as indicated above, shall be paid for under the item “ Asphalt

concrete sidewalk”.

615.09. Add the following pay item:

<u>Pay Item</u>	<u>Pay Unit</u>
61505B Portland cement concrete wheelchair ramp	Square yard

Section 617.--GUARDRAIL

617.01 Delete Subsection (d) and substitute the following:

(d) Terminal section types are designated as follows:

CRT	Cable releasing terminal
G4-BAT	Back slope anchor terminal
FAT-9	Flared anchor terminal, 30 feet long
FAT-6	Flared anchor terminal, 20 feet long
SBT-BAT	Back slope anchor terminal
Flared	Straight or parabolic flared W beam terminal
Tangent	Tangent W beam terminal

617.03 Posts. Delete this subsection and substitute the following:

617.03 Posts. Where pavement is within 3 feet of the guardrail, set posts before placing the pavement.

Where it is not possible to maintain a 2 feet minimum distance between the back of the guardrail post and the top of a slope 2:1 or steeper, increase the post length to 8 feet.

Where an impenetrable object is encountered, use a short post. Treat field cuts for wood posts with two coats of preservative treatment applied with a brush or a sprayer. Do not place field cuts in contact with the ground. Anchor short posts in concrete. Backfill and compact the remaining hole with acceptable material.

Do not use long or short posts in terminal sections.

Drive posts into pilot holes that are punched or drilled. The dimensions of the pilot hole shall not exceed the dimensions of the post by more than ½ inch. Set posts plumb, backfill, and compact.

617.03. Add the following:

The existing wood posts which are embedded in the existing concrete slope paving at the Pennsylvania Avenue bridge shall be used to mount the new steel backed wood rail.

617.04(b) Timber rail. Add the following after the second paragraph:

Field drill holes in the steel backing on curved sections or where required to correspond to the field cut wood rails at joints. Do not use a torch to cut holes.

The portion of the steel backed timber rail to be mounted on the existing post at the Pennsylvania Avenue bridge shall be provided with variable width space blocks that will align the face of the rail to match the face of the curb.

617.11. Payment. Add the following:

Payment for guardrail system, measured by the linear foot, shall include the cost of the variable width spacer blocks required to mount the rail on existing posts.

Section 619.--FENCES, GATES, AND CATTLE GUARDS

619.02. Add the following material:

Untreated structural timber and lumber	716.01
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619.03. Add the following:

Fence the staging area with an 8 foot high wood stockade fence. Location is subject to approval by the CO.

Provide a 6 inch opening between the bottom of the fence and the ground. Furnish opaque fence, consisting of 3/4 inch rough-hewn lengths of No. 1 Northern Spruce or Cedar with 2 inch by 3 inch backer rails supported on 4 inch x 4 inch posts 8 feet on center buried a minimum of 1.5 feet into the ground.

619.09. Add the following:

Measure stockade fence under Item 15101.

Section 620 – STONE MASONRY

620.01. Add the following:

This work also includes resetting of salvaged stone masonry (granite cobbles) and furnishing and setting additional stone masonry (granite cobbles), as may be required, in the median from Virginia Avenue to approximate station 10+50.

620.02. Delete the mortar reference and substitute the following:

Mortar	712.05(a)
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620.03. Add the following:

Should the number of salvaged granite cobbles be insufficient to complete the median as designed, the Contractor shall use granite cobbles furnished by the NPS. Any additional granite cobbles furnished to complete the median shall match the salvaged cobbles in size, shape, color

and texture. Cobbles furnished by the NPS may need cleaning before placement.

620.04 Placing Stone. Delete the second sentence of the first paragraph and substitute the following:

Do not place stone masonry when the ambient temperature is below 32° F. Maintain completed masonry at a temperature above 40° F for 24 hours after construction.

620.04 Placing Stone. Add the following after the first paragraph:

When removing and resetting stone masonry, use hand tools to clean the exposed faces of the stones of all mortar before resetting.

Set each stone on a full mortar base of dry mix concrete.

620.11. Add the following:

Measure reset stone masonry by the square yard.

620.12. Add the following at the end of the first paragraph:

Payment will also be full compensation for coordination, selection and transportation of any cobbles furnished by the NPS.

620.12. Add the following pay item:

<u>Pay Item</u>	<u>Pay Unit</u>
62016 Reset stone masonry (granite cobbles)	Square yard

Section 622.--RENTAL EQUIPMENT

622.01. Add the following:

This work consists of equipment for mowing.

622.02. Add the following after the first paragraph:

Furnish mowers with a minimum rating of 9 kilowatts (12 Hp) and equipped with necessary accessories for mowing.

Section 624.--TOPSOIL

624.04. Add the following after the second paragraph:

Where topsoil will be placed on slopes on which the character of the subsoil will not blend with the topsoil, work the topsoil into the subsoil to eliminate any slip-plane between the two materials and leave a sufficient cover of topsoil to ensure germination of the seed.

Section 625.--TURF ESTABLISHMENT

625.01.Add the following:

This work also includes placing mulch to form a temporary hiker/biker trail.

The work does not include areas previously protected by soil erosion control measures according to Section 157, and upon which permanent suitable vegetation has started growth.

625.02.Add the following:

The following seed mixture or an approved equal shall be used:

Redcoat Tall Fescue	39.9%
Barlexas Tall Fescue	39.84%
Impact Kentucky Bluegrass	9.84%
Catalina Prenal Ryegrass	9.78%
Other	0.64%

Use straw mulch for turf establishment.

Use wood fiber for the temporary hiker/biker trail.

625.03. Delete the first sentence and substitute the following:

Apply turf establishment to finished slopes and ditches within 14 days after completion of construction on a portion of the site.

625.06. Add the following:

Apply limestone and fertilizer at the following rates:

<u>Item</u>	<u>Rate</u>
Agricultural Limestone (85% CaCO ₃)	3094 lb/acre
Fertilizer	704 lb/acre

625.07. Add the following:

Apply seed during the following seasons and at the following rates per acre:

1. **February 15 – November 15.** Apply seed at the rate of 250 lbs / acre.
2. **November 15 – February 15.** Apply seed at the rate of 300 lbs / acre.

Apply seed after the seed bed has been prepared and approved by the CO. Do not apply seed during drought, excessive moisture, high winds, when ground is frozen, and when the temperatures are 32° F or less, or any other condition as determined by the CO to likely damage the seed or adversely impact germination.

625.08. Add the following:

Apply mulch for turf establishment at the following rates:

<u>Mulch</u>	<u>Rate</u>
Straw	4992 lb/acre (1 to 2 inch mat)

625.08. Add the following after subsection 625.08:

625.08A. Hiker/Biker Trail. Apply mulch for the temporary hiker/biker trail at the locations, depth and width as indicated on the plans.

After the new trail is opened to traffic the temporary trail (mulch) shall be removed and the area restored to its original condition. The dead grass shall be stripped from the mulched area and turf established.

625.09. Delete the last sentence and substitute the following:

Apply supplemental fertilizer at a rate of 401 lb/acre. Apply supplemental seed at the same rate as the initial seeding. Apply supplemental mulch at the same rate as the initial mulching and hold in place with a stabilizing emulsion tackifier.

625.11. Delete paragraph four and add the following:

Turf establishment will not be measured. Payment for turf establishment is included in other items in the contract.

Measure mulch for the hiker/biker trail by the square yard. The removal of the mulch and the restoration of the mulched area, turf establishment will not be measured.

625.12. Add the following pay item:

<u>Pay Item</u>	<u>Pay Unit</u>
62505A Mulching, dry method (temporary hiker/biker trail)	Square yard

Section 627.--SOD

627.02. Add the following:

Furnish sod from the same seed mixture as turf establishment, Section 625.02.

627.03. Add the following:

Cut Tall Fescue, Kentucky 31 sod to a depth equal to the growth of the roots, but not less than 1

in.

Lay sod between April 1 and September 30.

627.05. Add the following after the second paragraph:

Grade the finished surface of the sod bed to a smoothness comparable to results obtained by hand raking, leaving it clean and free of stones over 1 inch in size, debris, and depressions.

Apply fertilizer and agricultural limestone at the same rates specified in Section 625.

Protect all areas to be sodded from pedestrian traffic before and after the sodding operation.

627.06. Add the following:

Do not lay sod until the CO has approved the prepared sod bed.

Lay sod within 12 hours after delivery to prevent drying out and deterioration.

Place sod by hand. Install sod with close joints that do not overlap. Plug all gaps between sections of sod, and openings at angles, with topsoil and pieces of sod cut to fit.

Install sod smooth and flush with adjoining paving, and transition smoothly to existing grass areas.

Thoroughly water the sod, immediately after installation, to a depth of 4 in.

After sod and soil have dried sufficiently to prevent damage, roll sodded areas to ensure good bond between sod and soil and remove minor depression and irregularities.

Section 633.--PERMANENT TRAFFIC CONTROL

633.02. Add the following:

Fabricate sign panels from aluminum with Zee Bar mounting bracket.

633.04. Add the following:

Mount signs on wood posts.

633.05. Delete the first sentence and substitute the following:

Furnish Type III retroreflective sheeting.

633.05. Add the following:

Furnish fluorescent yellow-green retroreflective sheeting for pedestrian crossing signs.

Place signs on poles and posts so that no space is left between the top and bottom edges of adjacent signs.

633.07. Add the following:

Salvage existing signs from removed streetlight poles, as directed by the CO. Relocate the salvaged sign to the nearest replacement streetlight pole, on the same side of the road. Face the sign in the same direction as prior to removal.

633.08. Add the following:

Signs removed from existing streetlight poles and reset to new streetlight poles will be measured under Section 203.

633.09. Delete the text “Measure sign posts by the foot” and substitute the following:

Measure sign post by the each.

633.10. Add the following pay item:

<u>Pay Item</u>	<u>Pay Unit</u>
63311 Post (<i>description</i>)	Each

Section 634.--PERMANENT PAVEMENT MARKINGS

634.01. Add the following:

The centerline markings for the Parkway shall be Type D, broken reverse pattern, 30 ft. paint and 10 ft. skip.

634.03. Add the following after the sixth paragraph:

Place traffic markings before a winter suspension of paving operations.

634.03 General. Add the following:

Remove all conflicting pavement markings according to subsection 635.13.

634.14. Add the following pay item:

Pay Item	Pay Unit
63401DB Pavement markings, Type D, reverse broken (30 ft. paint and 10 ft. skip)	Linear foot

Section 635.--TEMPORARY TRAFFIC CONTROL

635.02. Add the following:

Temporary snow fence – 3-feet, 6-inches high with 2-inch wide wood slats secured with galvanized wire to steel posts, spaced at maximum 8-foot intervals.

635.03 General. Add the following after paragraph (h):

(i) Furnish temporary traffic control devices that meet the NCHRP Report 350, Recommended Procedures for Safety Performance and Evaluation of the Highway Features, crashworthiness standards.

635.05, 635.06, 635.07, 635.08, 635.14, and 635.19. Add the following:

For all traffic control devices, submit a certification that the devices have been successfully crash tested to meet the requirements of NCHRP 350 and/or have been accepted by the FHWA.

635.05 Barricades. Delete the second sentence and substitute the following:

Use type III sheeting.

635.07 Construction Signs. Delete the first sentence and substitute the following:

Use type III, VII, or IX retroreflective sheeting.

635.07. Add the following:

Where signs require orange color, use fluorescent orange color with Type III sheeting or better.

Furnish 16 inches by 16 inches flags for high level warning devices that are orange or fluorescent red orange in color.

Where signs are mounted on existing poles use metal straps.

635.08 Drums. Delete the third sentence and substitute the following:

Use type III retroreflective sheeting.

635.11. Delete the second paragraph and substitute the following:

Mount flexible plastic 6 inches by 6 inches delineators with Type III or IV retroreflective sheeting to the top of concrete barriers on 25 foot centers. Furnish white sheeting when the delineator is to the right of traffic and yellow when to the left.

635.11. Add the following:

Barriers must meet tensile and moment resistance. Submit, in writing, a certification that the barriers meet the requirements of NCHRP 350 and/or have been accepted by the FHWA.

635.13 Temporary Pavement Markings and Delineation. Delete the entire subsection and substitute the following:

635.13 Temporary Pavement Markings and Delineation. Before opening a pavement surface to traffic, remove all conflicting pavement markings by sandblasting or other methods that do not damage the surface or texture of the pavement. Make the removal pattern uneven so it does not perpetuate the outline of the removed pavement markings. Lightly coat sandblasted or removal areas on asphalt surfaces with emulsified asphalt.

Provide acceptable pavement markings or delineation and signing according to Section 156 and the MUTCD. Install and maintain temporary pavement markings that are neat, crack free, true, straight, and unbroken. For temporary pavement markings, use preformed retroreflective tape, traffic paint, or temporary raised pavement markers as follows:

(a) Preformed retroreflective tape. Apply according to the manufacturer's instructions. Remove all loose temporary preformed retroreflective tape before placing additional pavement layers.

(b) Traffic paint. Do not apply temporary traffic paint to the final surface. Apply traffic paint as the temporary pavement marking if no work will be performed on the project for at least 30 consecutive days. Apply temporary traffic paint at a 0.02-inch minimum wet film thickness (0.01 gallons per square foot). Immediately apply type 1 glass beads on the paint at a minimum rate of 6 lb per gallon of paint.

(c) Raised pavement markers. Do not use raised pavement markers during seasonal suspensions. When chip seals, slurry seals, or tack coats are used after marker placement, protect the markers with an approved protective cover, which is removed after the asphalt material is sprayed. Temporary raised pavement markers may be used as temporary pavement markings as follows:

(1) 10 foot broken line. Four pavement markers spaced 3 feet apart followed by a 30 foot gap.

(2) 3 foot broken line. Three pavement markers spaced 2 feet apart followed by a 36 foot gap.

(3) 2 foot broken line. Two pavement markers spaced 2 feet apart followed by an 18 foot gap.

(4) Solid line. Pavement markers on 5 foot centers.

Remove all temporary raised pavement markers before placing additional pavement layers.

Remove all temporary pavement markings from the surface course before placing permanent pavement markings.

635.14 Vertical Panels. Delete the last sentence and substitute the following:

Use type III retroreflective sheeting.

635.17. Add the following:

Patch the travelway after milling to provide a smooth, uniform traveling surface before reopening travel lanes to traffic as directed by the CO.

635.18 Variable Message Sign. Delete the entire subsection and substitute the following:

635.18 Portable Changeable Message Signs. Conform to the standards and guidance of MUTCD Section 6F.52.

635.19 Temporary Crash Cushions. Delete the entire subsection and substitute the following:

635.19 Temporary Crash Cushions. Furnish and install a redirective, non-gating crash cushion meeting the minimum TL-2 criteria level of crashworthiness per NCHRP Report 350, *Recommended Procedures for the Safety Performance and Evaluation of the Highway Features*. FHWA-approved crash cushions are available at http://safety.fhwa.dot.gov/programs/roadside_hardware.htm.

635.21. Add the following:

Provide and install temporary snow fence as indicated on the plans and in accordance with the applicable sections of Section 619.

635.26 (g) Add the following:

Do not measure strap supports where signs are mounted on existing poles.

Section 636.-SIGNAL, LIGHTING, AND ELECTRICAL SYSTEMS

636.01. Add the following:

This work includes the installation of inductive loop detector and associated cable and pullbox (handbox) for the traffic signal at Rock Creek Parkway and Virginia Avenue, NW.

This work also includes replacement of existing streetlights with new a system (steel pendant posts and No. 14 poles) and associated electrical conduits, manholes and junction boxes.

636.02. Add the following:

Manholes (Streetlights) and hand boxes (Signals)

Manholes and hand boxes shall be constructed on locations shown on the individual plans. These may be pre-cast or cast-in-place and shall comply with the following requirements.

1. PCC Mix Design – Shall conform to *DDOT Specifications*¹ 817.03 for Class B,

¹ *Standard Specifications for Highways and Structures*, District of Columbia Department of Public Works, 1996

structural, minimum 28-day compressive strength of 4,500 psi on field test cylinders made in the field and cured in the laboratory.

2. Curing Material – Shall conform to *DDOT Specifications* 814.03 for Membrane Cure.
3. Reinforcing Steel – Shall conform to *DDOT Specifications* 812.02, for Grade 60.
4. Frame and covers – Shall be gray iron casting conforming to the requirements of *DDOT Specifications* 815.04.
5. Pre-cast Reinforced Concrete - Shall meet the requirements of *DDOT Specifications* 821.04.
6. Cable racks shall be galvanized steel with cable insulators.

Luminaires

Luminaires shall be Metal Halide with the following wattage:

1. Rock Creek and Potomac Parkway – 400 watts.
2. Thompson Boat Center Parking Lot – 150 watts.

The following callout reproduces the cited DDOT Specifications:



817.03 DESIGN CRITERIA. Proportions of concrete shall be such that the design criteria herein are met for the respective class of concrete.

(A) **CLASSES OF CONCRETE.** Unless otherwise specified, the following classes of concrete shall be used.

CLASS	DESIGNATION	USES
A	Structural Trap Rock	Bridge Decks, sidewalks, and medians for superstructures. Suitable for all uses specified for Class B, Structural.
B	Structural	Reinforced structures, footings, slabs, approach slabs, beams, girders, columns, piers, abutments, walls, arch ribs, box culverts, precast piles, traffic barriers, and cribbing. Sewer and water work except thrust blocks and pipe cradle.
C	High Early Strength	For special and emergency uses as approved by the Engineer.
D	Prestressed	Used for prestressed or post tensioned members.
E	Paving	Alleys, alley and driveway entrances, curbs and gutters, pavements and base.
F	General	For general use and in sidewalks, curb, and gutter, bike paths or as specified.
H	Lightweight	As specified.
I	Low Slump	As specified.
J	Latex Modified	As specified.

(B) **DESIGN REQUIREMENTS.** Granulated slag may be used in an amount not to exceed 40 percent by weight of cement. Cement factor and water-cement ratio is determined on basis of combined granulated slag and cement weight.

Fly ash and granulated slag may not be used in the same mixture.

- a. The Engineer may approve, pending 28 day strength results, mix designs on the basis that 7 day compressive strength results equal or exceed 85 percent of the minimum average strength requirement as determined in 817.01(C) provided no accelerators or early strength cements are used.
- b. Crushed traprock per 803.02 shall be used in Class 1 concrete if used in concrete for bridge deck, sidewalk and median of superstructures.
- c. Consistency limits are those allowable with water. A maximum slump as limited by the mix design will be allowed for concrete approved with water reducing admixtures.

- d. Fine aggregate shall conform to 803.01.*
- e. Fine aggregate shall conform to 803.07.*
- f. Latex emulsion conforming to 821.17 shall be added in an amount of 3.5 gallons per sack of cement. The latex will weigh approximately 8.40 to 8.55 pounds per gallon. Proportions of cement to fine aggregate to coarse aggregate on a dry weight basis shall be 1 to 2.5 to 2.0 with a tolerance of 10 percent on the fine and coarse aggregate ratios.*
- g. Latex emulsion is included as part of the maximum water.*
- h. Fly ash may be substituted for cement such that not more than 15 percent by weight of cement is removed. The mix may require more fly ash added than cement removed. Cement factor and water-cement ratio determined on basis of combined fly ash and cement weight. Fly ash shall conform to the requirements of 821.09(B).*

(C) PROTECTION OF CONCRETE AGAINST ALKALI REACTIVITY

Fine and coarse aggregates for use in concrete that will subject to humid atmospheric conditions or contact with moist ground shall not contain any material that is deleteriously reactive with alkalis in the cement in an amount sufficient to cause excessive expansion of mortar or concrete, except that if such materials are present in injurious amounts, the fine and coarse aggregates may be used with a cement containing less than 0.6 percent alkalis calculated as sodium oxide or with the addition of a material that has been shown to prevent harmful expansion due to the alkali aggregate reaction.

When the concrete will be subjected to external sources of alkalis and/or chlorides, the aggregates used shall not contain more than 3 percent reactive constituents as defined by ASTM C 295, and pass at least one of the following criteria as may be applicable in accordance with ASTM C289, C 227, C 586, C 9 and P 214.

814.03 LIQUID MEMBRANE CURING COMPOUNDS

- (A) Membrane curing compound shall meet the requirements of AASHTO M 148, Type 1D with fugitive dye, Class B.*
- (B) For walls, membrane cure shall meet the requirements of AASHTO M 148, Type I, Class B.*

812.02 DEFORMED REINFORCING STEEL

Reinforcing steel shall meet the requirements of AASHTO M 31, Grade 40 or Grade 60, as specified, except that reinforcing steel for sewer-water structures shall be Grade 60.

Reinforcement shall be newly rolled in an approved mill and accurately fabricated to the dimensions shown in the Contract Documents. Rail-steel bars are prohibited.

Hooks and stirrups shall be bent using dimensions and diameters defined by ACI Standard Hooks in the Manual of Standard Practice of CRSI.

All reinforcing steel radii bends regardless of size shall be dimensioned and payment will be made as correctly dimensioned.

815.04 GRAY IRON CASTINGS

Gray iron castings shall conform to the requirements of AASHTO M 105, Class 30 A.

Iron castings shall be true to pattern in form and dimensions, free from pouring faults, sponginess, cracks, blow-holes and other defects in position affecting their strength and value for the service intended.

Castings shall be boldly filleted at the angles and the arises shall be sharp and perfect.

All castings must be sandblasted or otherwise effectively cleaned of scale and sand so as to present a smooth, clean and uniform surface.

821.04 PRECAST PCC SEWER-WATER UNITS

Precast PCC sewer and water manhole and casing units, basin tops with cover, grade rings, drip stones and cheek blocks shall be as per AASHTO M 199.

636.04 Add the following:

The existing roadway and parking lot lighting systems must remain in operation until the new systems have been connected and tested.

636.04. Add the following:

Electrical Cables for Traffic Signals

Electrical cable for traffic signal construction shall conform to the requirements of *DDOT Specifications* 618.16, “Wiring Systems”; 618.17, “CABLE CONNECTIONS” ; 618.18, “Circuit Identification” ; and the contract documents. Electrical cables shall be looped in and out of controller cabinets, manholes, hand boxes, to provide a minimum 3 feet of slack. Cable shall be pulled to ensure minimum stress on cables, conductors and connectors. All cable runs are to be continuous with no splices permitted in conduits, manholes, transformer bases, poles, or hand boxes.

Electrical cables for traffic signals shall be routed through conduits, and manholes as shown on individual plans. Cable routings shall be adapted to match field changes resulting in conduit, manhole, or hand box relocations.

Detector Lead-in Cables: The cables running between the traffic signal controller and specified detection equipment (loop detector in this case) shall be 4 conductors 18 AWG shielded, stranded cable. This cable is “Non IMSA spec” and frequently goes by the catalog code as No. 4C18 B7 OS-F. Cables serving loop detectors shall be coiled in the appropriate pullbox (hand box).

Connectors and Terminals: Connections and terminals shall conform to the requirements of NEC 110 for the type of cables specified in the plans and shall conform to the manufacturer’s recommendations.

Installation Procedures:

All cable segments shall be identified with a waterproof tag securely affixed to the cable in the controller cabinet, all pull boxes, hand boxes, and manholes, and in all transformer bases. All cable shall satisfactorily pass the megger tests. Cable failing the megger test shall be replaced by the contractor at no additional cost.

Cables shall be pulled through electrical conduits, manholes, controller cabinet, in accordance with the following procedures.

Cables shall be installed and pulled so as not to damage the cable or exceed the manufacturer’s recommendations for bending radius or pulling tension.

Cables may be installed or removed in duct lines that may contain energizing cables. All duct rodding shall be performed with a non-conductive rod and appropriate safety precautions shall be followed.

Cables shall be pulled in and through the conduit with a cable grip designed to provide a firm

hold on the exterior covering of the cable. Cable shall be pulled with a minimum of dragging on the ground or pavement.

Powdered soapstone, talc, or other approved lubricants may be used to facilitate the pulling of cable. In any event, lubricants for assisting in the pulling of jacketed cables shall be those specifically recommended by the cable manufacturer.

Cables shall be looped in and out of the controller cabinet, manholes, and hand boxes, to provide adequate slack and the minimum amount of stress on conductors and connectors. Cable runs shall be continuous with no splices in the conduit, manholes, hand boxes.

No branch splices of cable shall be permitted between the traffic signal controller and any signal head, detection device, or communications facility. Straight splices of cable are permissible only with the approval of the engineer utilizing splice kits which totally encapsulate the cable and produce a waterproof splice.

Cables shall be racked neatly and securely supported in all manholes.

All cables shall be identified with a waterproof tag securely affixed to all cables in each manhole, hand box, transformer base and controller or termination cabinet. The contractor shall prepare and affix each cable tag. Traffic signal system cables entering or leaving a controller cabinet shall be tagged to identify the type of signal head (vehicle, pedestrian, flasher, electronic sign) or detection device (push button, microwave detector, loop detector) being serviced, and the signal head or detector number as defined by the signal configuration package or the traffic signal sequence of operation. Communications cable shall be identified by trunk and cable pair number. Identification tags shall contain the following minimum information:

CABLE No. 2, PED P.B.A – for cables serving pedestrian push buttons
 CABLE No. 3, HANDBOX A, LOOP L-1 – For cables to be spliced into specific loop detectors in designated handboxes

The following additional provisions apply to loop detector lead-in cables:

1. All cable to contain 4 conductors.
2. The cable to be used shall be 18 AWG, stranded, twisted, shielded cable.
3. A separate segment of cable shall be rerouted from the controller cabinet to each loop detector.
4. In the event of a cable malfunction involving cable installed in accordance with these policies, a new segment of 18 conductor cable shall be pulled from the controller cabinet to the loop detector. Under no circumstances will it be permissible to replace the defective segment of cable utilizing straight splices connecting the new with the old cable.
5. Unless otherwise specified in the plans, all cable is to be furnished and installed by the traffic signal installation contractor.
6. If inspection of the traffic signal work by the NPS or District of Columbia forces shows any unauthorized deviation from the provisions of this policy, the contractor shall be obligated to make appropriate revisions at no additional cost.

The following additional provisions apply to loop detector cables:

7. All cable to contain 1 conductor.
8. The cable to be used shall be 14 AWG, stranded, THHN manufactured according to the latest IMSA specifications.
9. The cable is to be routed from the loop detector hand box, around the slot cut into the pavement and back to the loop detector hand box.
10. The dimensions of the loop detector and the number of turns of cable required will be clearly identified on the plans.
11. The cable shall contain no splices other than those made with the shielded lead-in cable in the hand box.
12. In the event of a cable malfunction, a segment of 1 conductor cable shall be pulled in a newly cut pavement slot according to the provisions of item 3. Under no circumstances will it be permissible to replace the defective segment of cable utilizing straight splices connecting the new with the old cable.
13. Unless other specified in the plans, all cable is to be furnished
14. and installed by the traffic signal installation contractor.
15. If inspection of the traffic signal work by the NPS or District of Columbia forces shows any unauthorized deviation from the provisions of this policy, the contractor shall be obligated to make appropriate revisions at no cost before final payment for the job is released.
16. All splices between the loop detector cable and the loop detector lead-in cable shall be made in the loop detector hand box utilizing waterproof, encapsulating splice kits.
17. Whenever practical, loop detectors shall be cut in the PCC roadway base before the surface course is applied. The megger test shall be given to the loop detector cable both before and after the surface course is applied. The loop detector shall be recut, if the cable fails the megger test. It will be permissible to cut the loop detector in the surface course after the surface course has been applied.

The following callout reproduces the cited DDOT Specifications:

618.16 WIRING SYSTEM

The Contractor shall furnish and install the type, and size of copper wire cables indicated on the plans and/or specified herein in strict compliance with all codes and standards cited in 618.02. Wires shall be drawn into place free from electrical and mechanical injury. No lubricant other than an approved type will be permitted to be used on wire installed in conduit. All wires shall be permanently marked with approved fiber tags as described to expedite tracing of circuits where device terminals are not otherwise identified. Wire shall be placed in rigid conduit unless otherwise specified and the total cross sectional area of the wire shall not exceed 40 percent of the conduit cross section area.

618.17 CABLE CONNECTIONS

All wire and cable shall be continuous from origin to destination without running splices in intermediate trays, pull boxes or manholes. In cases where splices are necessary because of long lengths, approval of splice locations shall be obtained from the Engineer. Splices will not be permitted in conduits, ducts, or trays.

Splices in 600-volt rubber insulated wires and cables (where permitted) shall be accomplished by means of compression connectors. The connector shall be suitable for the size wire used and shall be of one piece tubular tinned copper construction. The indentation shall be such as to assure maximum electrical connection and sufficient physical strength. The connection shall be covered with No. 88 Scotch Plastic Electrical Tape as manufactured by Minnesota Mining and Manufacturing Company, Type CW as manufactured by Plymouth Manufacturing Company, or approved equivalent as manufactured by Bishop Manufacturing Company, half-lapped to a thickness not less than 50 percent greater than the conductor insulation.

If approved soldered connections are specified in the Special Provisions, each splice shall be covered with polyvinylchloride plastic insulating tape to provide insulation equivalent to that on the wire. Neoprene tape shall then be applied over the splice in half-lap wrappings to a thickness equivalent to the wire or cable outer jacket. Two final laps of polyvinylchloride tape shall be applied and the splice shall then be painted with an approved air drying insulating varnish.

618.18 CIRCUIT IDENTIFICATION

The Contractor shall furnish and install identifying tags on all circuit cables, in all junction boxes for line and luminaire identification. Tags shall be as per 819.14. Identification markings, designated by the Engineer, shall be stamped on the tags by means of small tool dies. Each tag shall be securely tied to the proper conductor by non-metallic core plastic. Self-adhesive plastic tags shall not be used unless approved by the Engineer.

Each conductor passing through a junction or splice box or terminating in a street light or outlet shall be permanently identified as to circuit number and phase.

Electrical Cables (Streetlight)

The Contractor shall furnish all labor, materials and equipment necessary to furnish and install current carrying conductors, as shown in the contract document. The conductors will be installed in, but not be limited to, manholes, existing conduit, new conduit, transformer bases and poles. All cables shall be installed in continuous lengths and without splices between termination points. The Contractor shall provide adequate and proper equipment for the pulling of cables. The Contractor shall pull the cables through conduits without over stressing, scoring or cutting the wire and without damaging the insulation or outer covering.

Where strain on the cables is likely to be excessive, the Contractor shall use an approved cable lubricant, such as Yellow 190 manufactured by Ideal or an approved equal. Where more than one cable is to occupy the same conduit, they shall be installed at the same time.

The cable ends shall be sealed to prevent the entrance of moisture, if the Contractor is not making the final splices at the same time. The Contractor shall install slack cable in each manhole to allow for racking. Each phase shall be identified using standard color markings. All cables located in PEPCO manholes shall be tagged to show ownership, circuit number and voltage. Cables in NPS-owned manholes shall be marked to indicate phase. The neutral conductor shall be marked with white tape or paint.

After cables have been spliced, racked, and prior to final connection by the PEPCO, each phase conductor and neutral shall be given an insulation resistance test between conductors and ground. The test shall be performed in the presence of the CO. The Contractor shall furnish all labor, materials and test equipment. The test equipment shall be tested and certified yearly by a certified testing lab or the equipment manufacturer. Copies of the certification shall be supplied to the CO.

Each conductor shall indicate a value of not less than fifteen (15) megaohms. If a fault is found to exist, the Contractor shall locate the faulty cable section, and furnish and install a new cable. If it is definitely established that the fault is due to a splice, the decision to correct the splice or to replace that cable section shall rest with the CO.

The Contractor is responsible for notifying PEPCO to reestablish the service when the new

equipment has been installed. Coordination with PEPCO will be the responsibility of the Contractor.

Grounding and Bonding

Grounding shall be accomplished as soon as materials are in place to which the grounding wires are to be attached.

The grounding electrode conductor shall be sized in accordance with Table 250-94 on the National Electric Code, and the equipment grounding conductor shall be sized according to Table 250-95, however, the smallest size conductor shall be #8 AWG.

All ground rods shall be copper-clad steel, size as noted in the relevant contract document.

All sizes specified in these specifications or shown on the plans are American Wire Gauge sizes.

The grounding wire or cables shall conform to the requirements of ASTM B33 or ASTM B189. Standard cable shall conform to the requirements of ASTM B8.

All non-current-carrying metal parts for the roadway lighting system shall be solidly grounded.

Each metal lighting standard shall be grounded to the adjacent manhole with a No. 8 copper wire, which shall be connected to the pole shaft and the manhole with a solderless bolted connector post or lug, with non-corrosive components. In case of fiberglass posts, connect the grounding wire from the manhole to the ground rod at the base of the post.

The ground rod shall be a high strength copper clad steel rod. The rod shall have a minimum diameter of 3/4" and a minimum length of 10'. In all installations the rod shall be sized so that there is a minimum of eight (8) feet in contact with earth.

PCC Foundation for Streetlight Poles

This item of work consists of constructing concrete foundations for streetlight poles complete with necessary electrical conduit, anchor bolts, ground rod, and other work as required in the contract document. The contractor shall use a modified DDOT standard foundation detail.

The materials for reinforced Portland cement foundations shall meet the following requirements:

1. PCC Mix Design - Shall conform *DDOT Specifications* 817.03 for Class B, Structural, minimum 28-day compressive strength of 4,500 psi on field test cylinders made in the field and cured in the laboratory.
2. Curing Materials - Shall conform *DDOT Specifications* 814.03 for Membrane Cure.
3. Reinforcing Steel - Shall conform *DDOT Specifications* 812.02, for Grade 60.
4. Anchor Bolts - Shall conform *DDOT Specifications* 821.06 for High-Strength Bolts.
5. Conduit - Sleeves shall conform to Conduit Section of the specification.
6. Galvanizing - Shall conform to *DDOT Specifications* 811.07.
7. Ground Rods - Shall be copper-clad rods conforming to the requirements of UL-467. Ground rods shall have a diameter of at least 3/4 inches and a length of at least 15 feet with minimum 8 feet of soil contact.

8. Ground Wires - Shall be No. 8 AWG for streetlight conforming to the requirements of ASTM B2.
9. Ground Clamps - Shall be heavy-duty bronze or brass or galvanized malleable iron conforming to the requirements of ASTM A220, any grade.

The exposed portions shall be formed to present a neat appearance. The bottom of concrete foundations shall rest on firm undisturbed ground.

Forms shall be true to line and grade. Conduit ends and anchor bolts shall be placed in proper position and to proper height, and shall be held in place by means of a template until the concrete sets.

Conduit ends shall extend a minimum of two inches (2") and a maximum of four inches (4") above the top of the finished foundation.

The new foundations will be installed at the locations identified in the contract documents. The foundation shall be installed 36 inches from face of curb to centerline of foundation, but not resulting in a usable sidewalk width of less than 36 inches minimum. A 2" conduit shall be installed with a sweep bend for conductors, and a 1" conduit shall be installed through the foundation for the installation of the ground rod. The ground rod and connection shall be included in the cost for this pay item.

In case of lead feeder cable, up to two (2) additional 2"-conduits shall be installed.

The contractor is responsible for ensuring that all anchor bolts, ground rods, conduit and other appurtenances are properly located before concrete is poured. The anchor bolts shall be set to the correct bolt circle and are to project 3" above the foundation. Where existing conduit is reused it shall be connected with new PVC conduit going into the new foundation using approved electrical couplings. The conduit for the electrical conductors shall be set as close to the center of the foundation as possible. All foundation caps shall be set 1" above grade. The foundation shall be allowed to set for a minimum of three (3) days before installing the post.

Included within this pay item is the temporary patching of the trench and maintenance of the patch until final repairs have been made.

The following callout reproduces the cited DDOT Specifications:

821.06 ANCHOR BOLTS

- (A) **PAVING.** Anchor bolts shall be 9/16 inch in diameter and at least 11 inches long. The bolt shall be equipped with an expansion device on one end and a hook on the other. The bolts shall meet the requirements of AASHTO M 31, plain bars, Grade 40.
- (B) **MISCELLANEOUS.** Self-anchoring bolts shall be per FSS FF-S-325 for Group I, Type 2, Styles 1 and 2; Group II, Type 4, Class 1 and 2; or Group III, Types 1 and 2. Bolts shall be galvanized per AASHTO M 232 and be capable of withstanding a proof test load 4 times greater than the design working load.

811.07 GALVANIZING

Galvanizing shall refer to the coating of steel or iron parts with metallic zinc by the hot dip process.

All metal parts to be galvanized shall be thoroughly cleaned before application of zinc, and for steel and iron castings this cleaning shall include sandblasting. Hot-dip galvanizing of metal shall conform to the requirements of AASHTO M 111.

Galvanizing of iron and steel hardware, unless otherwise specified, shall conform to AASHTO M232.

Removal of Streetlight Poles

The Contractor shall furnish all labor, material and equipment to remove streetlight posts and associated equipment, (conversion Kits, lamps, photo cells, wiring within the poles, street signs and posts) as shown on the project plans. All posts that are to be reinstalled as part of this contract shall be carefully removed. All damaged parts caused by the contractor will be replaced by the Contractor at no additional cost. All posts shall be disassembled and inspected by the Contractor for parts that can be reused at a later time.

If the pole is in good condition and are to be reused in the project, the contractor shall transport the pole to its own storage site.

Backfill and compact all holes created by removing existing metal light poles except holes that will be used again for new light poles. Backfill materials shall consist of suitable soils or granular material.

Removal of Streetlight Foundations

The contractor shall supply all labor, equipment and materials necessary to remove streetlight pole foundation. The contractor shall remove the foundation completely. The Contractor shall seal the conduit, remove the anchor bolts and the ground wire or rod. If the foundation is located within a dirt tree space, the contractor shall backfill the excavation with dirt to grade. Where the foundation is located in a paved area the contractor shall backfill with dirt to within 6" of grade and then install a temporary asphalt patch. All material removed shall become the property of the contractor and will be disposed of at no additional cost.

Payment to PEPCO for Connection and Disconnection

The Contractor must schedule his work around two (2) PEPCO manhole entries per manhole; any more visits will be the responsibility of the Contractor at no more additional cost. The Contractor shall include in his bid the amount shown in the Pay Item Schedule to pay PEPCO for their work performed as required in the contract. PEPCO will submit all invoices to the Contractor for payment. After payment has been made, the Contractor shall submit the paid invoices to the CO. The Contractor will be paid only the invoice amount. No Contractor mark up will be allowed.

636.05. Add the following:

Concrete Encased PVC Conduit (for Signal)

The Contractor shall furnish and install electrical conduits conforming to the requirements of *DDOT Specifications* 618.14 and 819.12 and the contract documents. One 4" conduit will be used between DC manhole to the handbox.

The contractor shall install electrical conduits in conformance with the provisions of DDOT's Sheet 11 of 22, D.C. Drawing No. S-2100 (reproduced in the detail plans of this contract).

All conduits shall be rigid, gray, Polyvinyl Chloride (PVC) Schedule 40 conforming to the requirements of UL – 651 and UL 514, if direct buried, and EB 35 or better for encased conduits. Conduits and fittings shall bear the Underwriter's Laboratories, Inc. label. Conduit shall be provided in factory-supplied lengths, and shall be marked with the manufacturer's name, trade name or trademark, nominal trade size, and type of material. All joints shall be watertight and secure. Solvent cement used for joining PVC conduit shall conform to the requirements of ASTM D2564.

Conduits shall be installed to proper line and grade. Conduits shall be installed with a minimum 36 inches of cover below final grade, or at greater depths only if necessary to obtain necessary clearance from other utilities. Conduits shall slope at a minimum rate of 3 inches per 100 feet of length to a foundation or manhole. Conduit runs shown on the plans may be changed to avoid underground obstructions only with written approval from the CO.

The conduit shall be installed at full lengths using standard manufacturer supplied elbows, bushings, reducers, bends, nipples, couplings, and other hardware of the same material and treatment as that of the straight conduit pipe. If the contractor is required to make field cuts of the conduit, the conduit ends shall be reamed to remove any rough edges before coupling. All conduit runs shall be cleaned and swabbed before cables are installed. Joints between conduits shall be cleaned and cemented, and conduits shall be joined together tightly. All joint fittings shall be watertight. Where two or more conduits are being installed in the same trench, the contractor shall use spacers between the conduit runs. All bends in the conduit shall be of long sweep, free from kinks, and of such easy curvature as to permit cable pulling without undue tension on conductors or damage to insulation.

If and when the contractor is required to penetrate existing PEPCO Manholes with proposed conduit, the wall penetration of PEPCO manholes will be performed in accordance with all PEPCO rules and regulations, and under the supervision and direction of PEPCO field personnel. The penetration of D.C. manholes will be performed under the supervision and direction of District of Columbia personnel. Conduit entering any PEPCO or DC Manhole or DC hand box shall be terminated flush with the inside wall of the manhole or hand hole. Cut conduits shall be reamed to remove rough edges. The space remaining between the conduit and the manhole wall shall be filled or patched with concrete over the full width of the manhole or hand box wall so that there will be no leakage. The inside of the conduit shall be cleaned of all patching debris immediately before the concrete sets.

At the end of each workday the contractor shall seal the ends of all conduits to prevent the entrance of dirt, water and other foreign materials into the conduit system.

After concrete encasement has been completed, all wood forms and trench shoring shall be completely removed during the backfill operation. Backfill shall be done in layers of 6 inches and compacted before the next layer is added. In paved areas, the backfill shall be brought to within 6 inches of the surface and temporarily patched. In all unpaved areas, the top six inches shall be composed of topsoil and sod.

All soil, broken paving, wood forms, trench shoring and trash shall be removed from the work site at the end of each workday.

The contractor shall furnish and install pull tape or dragline in each conduit run installed. The dragline shall be continuous, extend the entire length of the conduit and contain at least 3 feet of slack at each end. The dragline shall be comprised of materials which cannot conduct electricity and shall be of sufficient strength and design to allow the contractor to easily pull cable through the conduits without damage or excessive pressure on cable insulation and conductors.

PCC mix design for encased conduits shall be conform to *DDOT Specifications* 817.03 for Class F General Use, minimum 28-day compressive strength of 3,500 psi on field test cylinders made in the field and cured in laboratory. All conduits shall be encased to provide a 4 inch minimum cover all around the conduit.

If existing utilities or conduits are present in the trench, these utilities or conduits shall be surrounded with an encasement of at least 3 inches of sandy fill, free from objects, which might damage the conduit. PCC encasement shall then be placed over that sand encasement to the appropriate level.

The use of dry pack PCC mix 2500 psi for conduit encasement is prohibited. Wet mix encasement, as described herein, shall be used.

Backfilling over or placing any materials over PCC encasement shall not commence for at least four hours after the PCC encasement has been placed, except as directed by the Engineer.

Conduit encasement shall not be begin until the D.C. Inspector surveys the conduit installation and approves the placement of concrete. The contractor shall be required to make needed adjustments to correct confirmed discrepancies before concrete is poured.

The following callout reproduces the cited DDOT Specifications:

618.14 CONDUITS

Conduits shall be of the size shown on the plans and/or as specified herein and shall be concealed in the structure and under the roadways in compliance with all codes and standards cited in 618.02. The spacing and location of conduits shall conform to the dimensions shown on the drawings. All conduits shall be rigidly supported in an approved manner during pouring of concrete. Ends of all conduits shall be plugged or capped to prevent seepage of grout, concrete, water, or dirt into the conduit during construction.

Conduits shall be dripped at low points to prevent accumulation of condensate by sloping to boxes or installing "T" drains.

Where conduits pass through joints in concrete, approved expansion fittings shall be installed.

A copper TW insulated wire not smaller than No. 12 AWG shall be pulled into and left in each unused conduit for a drag wire. Rigid conduit shall be cleared after installation by drawing an iron shod mandrel through each section of conduit line between pull boxes as it is constructed. The mandrel shall not be more than 1/4 inch smaller than the internal diameter of the conduit and shall have a rubber or leather gasket slightly larger than the bore of the conduit. Defective conduits shall be repaired and the mandrel again drawn through.

Rigid metal conduit shall be installed with a minimum of bends and in no case shall the total angle of bends between outlet boxes of junction boxes exceed 180 degrees. Except for factory ells, the center line radius of conduit bends shall not be less than 12 internal diameters of the conduit. All bends shall be regular and symmetrical and the conduit shall not be flattened or distorted. The conduit shall be coupled and connected at the conduit fitting, junction and outlet boxes and expansion fittings, to assure electrical continuity

throughout the entire metallic conduit system. Conduit shall be terminated in the junction boxes with insulated bushings to protect the wires. The use of running threads is prohibited and in lieu thereof an Erickson coupling shall be used.

Conductive compound shall be applied to all threaded ends.

819.12 ELECTRICAL CONDUIT

Conduit and fittings specified in the Special Provisions and where shown on the plans shall conform to the following:

(A) METALLIC CONDUIT.

- (1) Hot-dip galvanized steel conduit shall conform to the requirements of ASTM A 53, UL 6 and FS WW-C-581E, be rigid, and bear the UL label.
- (2) Zinc-coated steel conduit shall conform to the requirements of UL 6 and FS WW-C-581E and bear the UL label, and shall be rigid.
- (3) Plastic coated galvanized steel conduit shall conform to the requirements of UL 6 or ASTM A 53, be rigid and hot-dip galvanized, including threads and have a PVC plastic coating of at least 40 mils in thickness, intimately bonded to the outer galvanized surface. The threads and the interior surface shall be bonded with urethane coating.
- (4) Corrosion resistant steel conduit shall conform to ASTM A 333, Grade 9, except that the chemical requirements are amended to read phosphorous, maximum .095 percent.
- (5) Aluminum conduit shall conform to the requirements of UL 6 and bear the UL label.

(B) NON-METALLIC CONDUIT.

- (1) Heavy wall PVC conduit, Type II or Schedule 40, shall conform to Federal Specification 1094A and UL 651, and bear UL label.
- (2) High density polyethylene conduit, Type III, shall conform to UL 651 and bear the UL label.

(C) BITUMINOUS-FIBER CONDUIT. Bituminous fiber conduit, Type II, shall conform to FS W-C-581 or W-C 575.

(D) FIBERGLASS REINFORCED EPOXY CONDUIT. FRE conduit shall be heavy wall type and conform to NEMA TC-14 and bear the UL label.

Electrical Conduits (For Streetlights)

Two types of installations will be used for streetlighting conduits – trenching and boring. The Contractor shall furnish all labor, tools, material and equipment necessary for excavation, directional boring, and installation of conduit(s). All conduit placed under existing pavement shall be installed with no disturbance to the existing roadway.

The Contractor shall bore or trench the conduits as called for by the engineering drawings. Conduit(s) shall be PVC schedule 40 (for trenching) and 4" rigid galvanized steel (for boring) or as specified in the plans, and shall be installed to proper line and grade. Conduit(s) shall be installed with a minimum of 36 inches of cover in roadways and 24 inches in all other locations, and shall be installed in dry trenches. The conduit shall be installed in full lengths using manufacturer's supplied bends and couplings.

Conduit(s) shall be installed to slope toward manhole. The slope of duct bank runs shall be at least 10 inches per 300 ft. All conduit runs shall be complete and points of penetration of the wall of the manholes shall be sealed before any dry mix concrete encasement is installed. The wall penetration of PEPCO'S manholes will be done under the supervision and direction of PEPCO field personnel. At the end of each workday, the Contractor shall seal the ends of all conduits to prevent the entrance of dirt and water into the conduit system.

The Contractor shall locate any and all underground utilities and tunnels before trenching or

boring.

At the Thompson Boat Center Parking Lot, directional boring methods are required for conduit installation, as directed by the CO, to minimize damage to specimen trees.

Manholes and Junction Boxes (Streetlights) and Pullboxes/Hand boxes (Signal)

The contractor shall furnish and install manholes, junction boxes and pullboxes (hand boxes) conforming to the requirements of *DDOT Specifications* 618.12, 618.19.

3'x3' manholes (for streetlights) shall be used in this contract, featuring the inside dimensions of 3 feet long by 3 feet wide by 3 feet deep. All manholes shall be load bearing. Knockout panels for electrical conduit shall be provided on all four manhole walls. The concrete floor of each manhole shall feature a hole for ground rod placement and a sump hole for water drainage. The top slab shall fit on top of the manhole in a tongue and groove pattern, and shall contain a circular hole in the center for the frame and cover. Manholes shall be installed flush with ground, pavement or sidewalk.

The pull boxes or hand boxes (for signal) to be used in this contract are shown on Detail Sheet E 636-D.

The junction boxes (for streetlights) to be used in this contract are shown in the detail plans of this contract.

Conduit entering manholes shall be terminated flush with the inside wall. Conduits shall be aligned in as nearly a straight line as possible to allow for easy of pulling cable. The space remaining between the conduit and the structure wall shall be filled or patched with concrete or acceptable equal so there will be no leakage. Manholes shall be seated on trench fill in order to prevent settlement.

The frame and cover shall be painted battleship gray before installation with one field coat of primer meeting the requirements of *DDOT Specifications* 811.03. The Cover for handbox (for signal) shall be clearly marked "DCSL-TS" on the outside. Marking shall be placed parallel to the long side of the cover. Each cover shall have two 0.875 inch pick holes to allow the cover to be removed.

The contractor shall be responsible for all excavation and shoring necessary in order to install the manholes and hand holes shown on the plans. A 0.75 inch x 10 foot long copper clad ground rod shall be installed in the bottom of each manhole and hand box. The ground rod shall extend not more than 6 inches above the floor. The contractor shall electrically ground all metallic objects comprising the manhole or hand hole including the frame and cover, cable racks and reinforcing steel, as appropriate. Cable racks shall be installed in the manhole, as directed by the CO.

The contractor shall adjust the manhole to grade using a poured concrete collar. The contractor shall also be responsible for temporary patching around the manhole and hand box and maintenance of the patch until permanent street cut repairs have been made.

The Contractor will submit catalog cuts of all precast manholes, hand boxes and junction boxes that he proposes to install as part of this contract.

All structures to be installed in roadway or areas subject to vehicle loading shall meet AASHTO's loading. The Contractor will not use brick in adjusting the neck of the manhole to grade.

The following callout reproduces the cited DDOT Specifications:

618.12 PULL BOXES

Pull boxes and covers shall be furnished as specified, and shall be located where designated on the plans. When required, excavation shall be performed as nearly as practicable to the outside dimensions of the pull box. After boxes are set to proper grades, excavated spaces around the boxes shall be backfilled with suitable material placed and thoroughly tamped in thin layers.

618.19 JUNCTION BOXES

Junction boxes of the sizes and types specified shall be furnished and installed as shown on the plans. All junction boxes embedded in concrete structures shall be provided with drains. Any necessary deviation from the plans resulting from existing grade conditions shall be done only under the direct approval of the Engineer in which case the method of installation for the junction box shall be determined by job conditions.

At each location in the electrical cable runs where the Contractor elects to make cable splices other than those shown on the plans or as specified, a junction box of the type indicated on the drawings for similar installations shall be furnished and installed at no additional cost to the District.

811.03 PRIME COAT

- (A) **BASIC LEAD SILICO CHROMATE.** *Factory-mixed basic lead silico chromate paint shall conform to the requirements of AASHTO M 229, Type V. This paint shall be used for spot painting on existing steel and intermediate coat on new and existing steel. On areas to receive two coats of this paint, the first coat shall be darkened with 1/4 ounce of lampblack paste per gallon of paint to provide a contrast between shades of the two coats, subject to approval by the Engineer.*
- (B) **ZINC DUST-ZINC OXIDE PRIMER PAINT.** *Zinc dust-zinc oxide primer paint shall conform to the requirements of the Federal Specification TT-P-641G, Type I. This paint shall be used for priming galvanized metal prior to field painting with finish coats. Minimum net weight of the finished paint shall be 23 pounds per gallon.*
- (C) **PETROLATUM PRIMER.** *Rust-inhibitive petrolatum primer shall conform to the requirements of the U.S. Maritime Administration Specification 52-MA-602, Type B Medium. This primer shall be used for coating field metal to metal contact surfaces, field weld areas, or other metal surfaces where a temporary rust-inhibitive coating is required. This primer may be removed by wiping with thinner (mineral spirits) conforming to requirements of 811.02.*
- (D) **WOOD PRIMER-SEALER.** *Wood primer-sealer shall conform to requirements of the Federal Specification TT-P-25E. This primer-sealer shall be used for priming new wood surfaces and weathered, previously painted wood surfaces prior to field painting with finish coats.*
- (E) **ZINC-CHROMATE, LOW-MOISTURE SENSITIVITY.** *Factory-mixed zinc-chromate low moisture sensitivity primer shall conform to the requirements of FS TT-P-1757, Composition L. This paint shall be used to coat surfaces of aluminum parts that will be embedded in concrete or masonry.*
- (F) **PRIMER FOR COATING ELECTRICAL WORK.**
 - (1) **SHOP COAT.** *Shop coat primer for coating electrical work shall conform to FS TT-P-645.*
 - (2) **FIELD COAT.** *Exposed conduits, supports and other galvanized fittings of Sec. 622, or exposed parts thereof shall be field painted with one coat of zinc oxide galvanized primer paint meeting the requirements of FS TT-P-641 B, Type II.*
- (G) **INORGANIC ZINC RICH PRIMER.** *Self-curing inorganic zinc-rich primers covered by this specification shall be two component solvent base vehicle type.*

- (1) **MATERIAL REQUIREMENTS.** *The pigment used in the formulation shall be basically zinc dust. Small amounts of color and extender pigments may be used provided the quantitative requirements of the complete paints are met.*

Zinc dust shall be per ASTM D520, Type I, modified to allow 0.1 percent retained on the number 100 mesh screen.

Vehicle shall be a solvent solution with silicates, curing aids, tinting colors, suspension and pot life control agents of the manufacturer's choosing.

The color of the inorganic zinc primer shall be such that a definite contrast is readily apparent between it and the color of blasted steel.

The pot life of the mixed paint shall be a minimum of 8 hours at 77_F and 50 percent humidity. The vehicle of the paint shall show no thickening, curdling, gelling, gassing, or hard caking after being stored unmixed for 9 months from date of manufacture in a tightly covered unopened container at a temperature of 50 to 90_F. Storage life shall be in accordance with ASTM D 1849.

- (2) **DRYING TIME.** *Set to touch time of mixed paint shall be determined in accordance with ASTM-D 1640 and shall be no more than 30 minutes at 77_F.*

Cure hard to recoat time of mixed paint shall be determined by the methyl ethylketone (MEK) rub test. Using a wadded piece of cheesecloth saturated with methyl ethyl ketone, rub back and forth with firm pressure over a one inch long section of the primer 50 times. Examine the surface of the primer. It shall show only burnishing, polishing, or trace removal of loose surface particles when the primer has been cured for 24 hours at 80_F and 90 percent relative humidity.

- (3) **OTHER COATS.** *The intermediate coat, if specified, shall be from the same paint supplier as the prime coat and shall be compatible with the primer and the topcoat.*

The topcoat, if specified, shall be from the same paint supplier and shall be compatible with the primer and intermediate coat.

The Contractor shall conduct tests to determine intercoat compatibility of approved primer, intermediate and topcoats to be used. Tests shall be conducted on areas of the structure as directed by the Engineer.

636.06. Add the following:

Streetlight Poles

The Contractor shall supply all labor, material and equipment necessary to furnish and install new streetlight poles and arms (with pendant posts) and transformer base (with pendant posts). All accessories, e.g., bolts, bolt caps, nuts, washers and clips necessary for installation, etc., are included. All equipment that the Contractor receives shall be stored according to manufacturer recommendations. The bases and shafts shall be installed true and level and any required shimming shall be done with factory-supplied shims.

The Contractor shall set the post with care so as not to damage the finish. All damage to the finish will be repaired and/or replaced at no additional cost. The Contractor shall replace any material damaged before the acceptance by NPS in kind at no additional cost.

Feeder cable and ground cables associated with the pole installation shall be included in this item.

Two types of streetlight poles are used in this contract:

Pendant Pole with Eight Foot Arm (Cobra head): It includes steel pendant post with eight foot (8') arms and all electrical wiring both power cables and ground wires.

No. 14 Streetlight Pole (Type Washington Globe): The contractor shall as part of this pay item drill or slot newly-installed base in order to install the pole on a new 10.5" bolt circle foundation. The contractor shall install the pole plumb shimming only with manufacturer's supplied shims. The contractor shall furnish new #14 casing and base doors.

For pendant posts, the Contractor shall supply all labor, equipment and materials to furnish and install breakaway or steel streetlight transformer bases and all electrical grounding, as specified in contract documents. The grounding connection to the base shall be made with factory-supplied lugs. All bases that the Contractor receives shall be stored according to the manufacturer's specifications. The bases shall be installed true and level and any required shimming shall be done with factory-supplied shims.

Luminaires and Conversion Kits

The contractor shall furnish all labor, materials and equipment necessary to install any lamp, photocell, metal halide luminaire (for pendant posts), and metal halide conversion kits and globes (for No. 14 upright poles). All metal halide luminaires installed under this section will be of Cut-off type.

It is the responsibility of the contractor to insure that the proper size luminaire is installed. Care must be taken during the installation of the luminaire, so that the conductors are not damaged. The new luminaire shall be attached securely to the supporting arm or bracket in accordance with the manufacturer's instructions. All luminaires installed must be leveled during the installation, in accordance with the manufacturer's instructions showing the proper way to level the luminaire

All conductors that terminate on the luminaire terminal block will be installed to ensure a good connection without damaging the conductors. The conductors should be pushed upward as far as possible, so they are away from the heat generated by the ballast that can cause damage to the conductors. The contractor will make sure that on luminaires with multi tap ballast, the taps are installed properly according to the manufacturer's instructions.

The Photoelectric Control should be oriented so that the word NORTH is directed towards true north. The contractor should check to make sure the eye of the control is not facing a foreign light source.

The contractor shall install a new lamp of the proper type and size. Before leaving the location, the contractor shall cover the photoelectric control and check that the light is operating properly.

For No. 14 poles, the Contractor shall install metal halide conversion kit, lamp and photocell and No. 192 globe. No. 192 globes shall be one-piece blow molded high impact strength polycarbonate. The globe shall sit in the No. 14 D.C. Casing. A returnable casing is available to prospective bidders. The globe shall be shatter proof and ultra-violet stabilized. It shall be stippled clear glass in appearance with initial 90% light transmission. During the installation, the contractor must make sure that the following conditions are met:

1. Kit is held in place by a minimum of three (3) bolts.

2. Conductors are not to be placed in direct contact with the ballast assembly, which could cause damage due to heat from the ballast.
3. Feeder conductors and photocell lead wires are placed on terminal block or butt end crimped in the appropriate splices and taped.
4. The kit installation does not interfere with the installation and proper tightening of the globe holding devices.
5. On the street side of the casing, the Contractor will place the appropriate decal indicating the type and size.
6. The kit should be mounted so that the lamp center is as close as possible to the center of the globe.

636.07. Add the following:

Loop Detector Installation

After receiving the CO's approval of catalog cuts, the contractor shall procure loop detection cable, loop detector slot sealant and waterproof, encapsulating splice kits conforming to the technical specifications contained herein.

The contractor shall furnish all labor, equipment and materials for the installation of inductive loop detector(s). Loop detectors locations and dimensions are shown on the project plans. The contractor shall utilize Sheet 12 of 22, D.C. Drawing No S-2100 (reproduced in the detail plans of this contract) as the guideline to be followed for typical loop detector installation. The following documents the scope of work to be performed.

The Contractor shall be familiar with the installation procedures and materials to be utilized, and shall visit the site in advance of actual installation. He shall plan and schedule daily operations as to accomplish all secondary tasks prior to commencing actual installation at a particular site. He shall complete the installation of the loop the same day.

Work shall consist of furnishing and installing loops, conduits and splices between loop detectors and lead-in cables, unless the contractor can protect the unfinished loops and/or saw cuts from traffic. The Contractor shall furnish all required materials for the work and shall perform tests on the system satisfactorily, as detailed herein.

The Contractor shall notify the DDOT when the loops are to be installed, at least 48 hours before the scheduled installation, and receive approval from them. The placement of loop wires, the megger test, and the sealing of the loops shall not be performed except in the presence of the DDOT representative.

Loop Layout – The Contractor shall lay out all vehicle loops and lead lines using spray paint, with or without template. No saw cutting of the pavement shall be done until the loop layout has been verified by the Engineer or inspector. Loop locations as shown on the plans must be maintained.

Loop Installation – The saw cut for the lead-in to the hand box shall be made as close as possible to the curb without marring the curb. The pavement chase from the saw cut end to the curb shall be made with a punch or drill and not by excavating methods.

One $\frac{3}{4}$ inch conduit for each loop lead shall be installed under the pavement from the end of the saw cut to the handbox. The part of the curb above the pavement shall not be drilled or cut for conduit installation. A bronze bushing shall be installed on the conduit stubout to prevent damage to loop lead-in wires.

The conduit shall be installed in a direct line with the saw cut so that the wires entering the conduit shall not need to be bent. The cover over the conduit shall be of the same material that is used to seal the saw cut.

Self-propelled concrete cutting equipment shall be utilized. The machine shall have the capability of utilizing either a local or tank-supplied water source of adequate pressure to act as a blade coolant, lubricant, and slot cleaner. The diamond blades to be utilized for the saw cut shall provide a clean, well-defined $\frac{5}{16}$ - inch width saw cut without damaging the adjacent area. The saw cut depth shall be $1\frac{3}{4}$ inches. The saw cuts shall be overlapped to provide full depth at all corners. All saw cuts requiring a right angle turnoff shall be cut at a diagonal to prevent sharp wire bends.

All cuts must be wired and sealed on the same day on which they are made. Loop installations shall not be made when the pavement is wet.

Vehicular traffic shall not pass over an open cut unless the cut is covered by a protective panel.

Immediately after the cutting operation, and just prior to the installation of the wire, the saw cuts shall be checked for the presence of jagged edges or protrusions; cleaned of all cutting dust, grit, oil and other contaminants, flushed by means of water stream; and cleared of water by means of an air stream. The blown air from the compressor shall be free of oil and water.

Care should be taken during the cleaning of the cuts to avoid blowing debris at passing pedestrians and motorists. It is imperative that the saw cut be clean and free of water before the wire installation proceeds.

Loop wires shall be installed from the hand box thru the turn in the loop cuts and back to the handbox in one continuous length, without in-line splices. The loop lead-in wires shall be twisted to provide a minimum of five (5) turns per foot from loop to pull box.

A minimum of thirty (30) feet of lead-in pair slack shall be coiled and left in the handbox for each loop. The wires for each detector shall be color coded for ease of identification of the separate loops.

The wire shall be type THHN #14 AWG minimum, stranded single conductor. All wire installations must be made without kinks, curls or other damage to the wire or its insulation. The Contractor shall replace any damaged wires at his expense.

The wire shall be installed as far down in the cut as possible. A blunt object, similar to a wooden paint stirrer, shall be used to seat the loop wire. In no case shall a screwdriver or other sharp tool be used for this purpose. The wire shall be held in place in the cut during installation by means of hold down strips. The "hold-down" strips shall be approximately two (2) inches in length and placed approximately every two (2) feet. These strips shall be left in the cuts during pouring of

the sealant. The strips shall be polyethylene foam sealant backers similar to Dow Chemicals Co. Ethafoam SB, or approved equal.

Prior to pouring the sealant, the loop detector shall be checked for continuity and resistance. In addition, the integrity of the installation shall be checked by applying a 1000 volts megger between each end of the loop lead-in and the nearest reliable electrical ground (e.g., streetlight, fire hydrant, etc.). In the event that no available ground exists, a suitable ground shall be established for the measurement (e.g., driven metal spike). The megger reading shall be in excess of 10 megohms under any condition. The inductance shall be between 60 and 100 microhenries.

The contractor shall record the location and megger readings, and indicate satisfactory compliance with continuity check. Reading and test equipment data shall be submitted for the record.

The contractor shall utilize loop detector slot sealant specified in the Appendix. The sealant shall not react with the cable insulation or adjacent pavement so as to create deterioration to these products.

The sealant shall be poured over the wire, half filling both the loop and lead in cuts. A check shall be made for air bubbles or material pile up and then the cuts are filled to roadway level. Excess sealant shall be removed by means of a "Squeegee". In all cases, there shall be neither a trough nor a mound formed.

The sealant when poured into a saw cut, shall completely surround the wires, displace all air there-in and completely fill the area of the cut, except for that portion filled with the wire hold down material.

The contractor shall allow sufficient time for the sealant to harden to accordance with manufacturer's instructions (minimum of two hours) before allowing traffic to move over the area unless it is covered by a protective panel. The Engineer will determine when the hardening is acceptable.

The contractor shall complete the loop detector installation by splicing in the hand box the loop detector cable with the loop detector lead-in cable. The splice kit used by the contractor shall create a waterproof splice totally encapsulating all conductors. The contractor shall maintain at least 3 feet of slack cable in both wires after splicing is completed.

Before leaving the site, the Contractor shall repeat the entire resistance and continuity test specified above. The report should be given to the Engineer for comparison with the first report, and shall show no appreciable change.

636.12. Add the following text:

Measure Traffic Detector Wire Loop by the linear foot, which includes all necessary loop wire embedded in the pavement and connected up to the pull box (electrical handbox).

Measure Conduit, 1-inch, Rigid Galvanized Steel (detector sleeve) by linear foot.

Measure Pull Box (Electrical Handbox) by the each

Measure Conduit, 4 inch, PVC (Schedule 40 concrete-encased) by linear foot.

Measure Traffic Detector Wire (Lead-In Cable, 4-Conductor #18 AWG) by linear foot, which include installing the cable from the handbox to the controller.

Measure Removal of Detector Wire by linear foot, which include the removal of existing loop detector cable running from the handbox to the Controller,

Measure electrical manhole adjustments by the each.

Measure Washington DC fixture globes by the each.

Measure lightpole foundation concrete by the each.

Measure Compensation for Utility Company Work by the CTSM (Contingent Sum.)

636.13. Add the following pay item:

<u>Pay Item</u>	<u>Pay Unit</u>
63614 Junction Boxes	EA
63617A Cable Connector Kits - Type 1	EA
63617B Cable Connector Kits - Type 2	EA
63617C Cable Connector Kits - Type 3	EA
63617D Cable connector Kits - Type 4	EA
63619 Trenching, Backfill	LF
63620 Breakaway Pole Base	EA
63621 Manhole, Electrical	EA
63626D Electrical Ground, 8AWG	LF
63637 Globes, Washington DC Fixture	EA
63640 Compensation for Utility Company Work	CTSM
63648 Traffic Detector Wire (Loop Wire)	LF
63648 Traffic Detector Wire (Lead-in Cable)	LF
63628A Lightpole foundation concrete	EA

Section 637.--FACILITIES AND SERVICES

637.02. Add the following:

Locate the Government field office at plan sheet location, as directed by the CO. Provide high-speed internet access, as described in Subsection 637.03(a)(6).

Locate the field office where high-speed internet access, as described in Subsection 637.03(a)(6), is available. For urban projects locate the field office within 5 miles of the project site and within 15 miles of the project site for rural projects. In remote locations where high-speed Internet service is not available, the field office distance range may be extended or waived by the

CO. All field office locations are subject to approval by the CO.

637.03(a) Add the following:

Divide the field office into three areas by permanent walls with hinged doors. If window air conditioning is provided, provide a separate unit for each room.

Clean the field office weekly to the approval of the CO.

Supply the following equipment in the field office:

(1) One self-feeding plain paper photo copying machine with the following minimum capabilities:

(a) Automatic document feeder;

(b) Making at least 8 copies per minute;

(c) Reproducing copies at standard sizes up to and including 11 x 17 inches (297 x 420 millimeters);

(d) Reducing 11 x 17 inches (297 x 420 millimeters) plan sheets to 8 ½ x 14 inches (210 x 358 millimeters) legal size and to 8 ½ x 11 inches (210 x 297 millimeters) letter size;

(e) Furnish all necessary supplies, except copy paper. Paper will be supplied by the Government.

(2) Two dual line telephones (touch tone, hold button, intercom and conference calling capabilities) with 2 separate lines, for the exclusive use of the CO.

(3) One digital answering device capable of answering, recording, storing, and playing back messages at least 30 minutes in length.

(4) One facsimile (FAX) machine capable of or having:

(a) Printing on plain paper and sending 8 ½ x 11 inch (210 x 297 millimeters) and 8 ½ x 14 inch (210 x 358 millimeters) documents;

(b) An automatic document feed with a minimum capacity of 20 pages;

(c) Automatic dial/redial.

Furnish all necessary supplies, except copy paper. Paper will be supplied by the Government.

(5) Provide three durable, hand held digital/cellular wireless phone(s), manufactured by Motorola/Nextel, or approved equal, for the use of the CO. The cellular phone(s) shall be similar or compatible with the Contractor's key field personnel (Project Superintendent,

and Traffic Control Supervisor) to enable the direct communication between the CO and the Contractor's field personnel. Each of the cellular phones shall have a minimum of the following:

- (a) Direct Connect feature, or equivalent to communicate onsite with contractor personnel;
- (b) Hands free device that can be used safely and effectively while driving, and is acceptable by the local law enforcement agencies;
- (c) Capability of a customized communication configuration, independent of the other units, so that the CO may limit any features if necessary;
- (d) Necessary telephone accessories including a cigarette lighter power adapter/charger;
- (e) Carrying case that can be worn on the belt, and is appropriate for use on construction projects.

The cellular phone plan shall provide the necessary amount of monthly Direct Connect airtime, and monthly Digital/Cellular airtime for use on the project. Ensure that each unit has unlimited Direct Connect capabilities, and each unit is equipped with a minimum of 600 minutes per month of local and long distance airtime for official business only.

(6) Provide, install, and maintain high-speed Internet access having at least 768kbps download and 256kbps upload speed. The high-speed Internet service can be provided via DSL, FIOS, a dedicated T1 line, or cable. Alternate service options may be submitted to the CO for approval. The system must include a modem and a router with a firewall or a router and a firewall appliance. The system must have the capability to support simultaneous Internet access of at least 3 workstations connected by Category 6 RJ45 LAN office drop cables. If the router supports wireless access, this feature must be disabled. Wireless access does not meet U.S.DOT security requirements and is not acceptable. The firewall configuration must be submitted to the CO for approval and cannot be changed after it is approved, unless a change request is submitted and approved in advance. Only U.S. DOT equipment is to be connected to the system.

If any equipment supplied becomes defective, is stolen, or for any other reason does not function as intended, replace the equipment with an equal or better unit at no additional cost to the Government. Replace any defective equipment within eight hours after being notified by the CO.

The Contractor will retain ownership of all equipment supplied by the Contractor. The CO will notify the Contractor when the equipment is no longer needed and request its removal.

Section 638.--LOCATING UTILITIES

Description

638.01 This work consists of locating existing utilities by excavating test pits to uncover the utility in question where a physical conflict with proposed construction is suspected and the test pit is ordered by the CO.

Material

638.02 Materials for restoring the test pit area to its original condition shall be replacement of the materials excavated or their equivalent in newly furnished materials meeting the various applicable sections of this specification.

Construction Requirements

638.03 General. Notify "Miss Utility," 48 hours prior to any excavation, at 1-800-257-7777 to have the utilities marked in the field.

Exercise special care and extreme caution in order to protect and avoid damage to any utility company facilities. Existing utilities have been generally located and shown on the plans, as they are believed to exist. The Government assumes no responsibility for the accuracy of locations shown on the plans. The Contractor is responsible for locating all existing utilities and the safety of same. He shall repair at his own expense, any damage resulting from his operation.

Locate by test pit any utility that may be in conflict with the proposed work. If a conflict appears to exist, then notify the CO in writing immediately and provide information on the location and elevation of the utility so that the CO can adjust the proposed work.

Locating Utility. Use electromagnetic devices to establish alignment of utilities where applicable. It may be necessary to thread a metal rod through non-metallic utility pipes to locate them. Where neither method is feasible, it may be necessary to locate the utility by perpendicular trench or trial pits.

Excavation. Excavate carefully so as not to disturb utility at it's assumed depth. When excavating within roadway pavements where traffic is being maintained, excavate by air-vacuum methods or equivalent, keeping the area of disturbance to a minimum. Uncover the utility sufficiently to make accurate measurements.

Record. Describe the utility found (size, material, function), determine the elevation of the top of utility, and prepare a field sketch of the pit. Indicate the date and the station and offset of the utility, noting whether the baseline or the centerline of proposed facility is being referenced.

Restoration. Backfill with original material, thoroughly compacting the material with a mechanical tamper. Restore aggregate base courses and pavement using equivalent materials and thicknesses. For portland cement concrete pavements, use fast setting concrete. For asphalt concrete pavements, cold patch, resurfacing of pit will be permitted so long as, in the opinion of the CO, it is thoroughly compacted.

638.04 Acceptance. Locating utilities will be evaluated under Subsection 106.02.

Measurement

638.05 Measure locating utilities by the each.

Payment

638.06 The accepted quantities, measured as provided above, will be paid at the contract price per unit of measurement for the pay item listed below. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
63801 Locate utilities	Each

Section 649.--MISCELLANEOUS ITEMS

Description

649.01 This work shall consist of removing and resetting parking meters at the Thompson Boat Center parking lot.

Material

649.02 Conform to the following Subsections:

Concrete	601
----------	-----

Construction Requirements

649.03 The Contractor shall exercise care in the removal and resetting of the parking meters so as not to damage the meter or the post. The concrete footing shall be removed from the existing post. The meters shall be reset at the new location so that the setback from the face of the curb and the height of the meter matches the other meters in the parking lot.

Perform excavation and backfill according to Section 209. Construct the concrete footing according to Section 601.

Measurement

649.04 Measure removal and resetting parking meters by the each.

Payment

649.05 The accepted quantities, measured as provided above, will be paid for at the unit price

per each. Payment will be full compensation for the work prescribed in the Section.

Section 702.—ASPHALT MATERIAL

702.01. Delete the first sentence and substitute the following:

Asphalt binders, including those with antistripping additives and binder blends with hot recycled mixtures, shall conform to AASHTO M 226, Table 2, for viscosity graded binders and AASHTO MP 1 for performance graded binders.

702.04 Delete **Table 702-1**, and substitute the following:

Table 702-1
Application Temperatures - Range EF

Type and Grade Of Asphalt	Temperature Ranges Minimum - Maximum	
	Spraying Temperatures	Mixing Temperatures ⁽¹⁾
Cut-back asphalt -		
MC-30	85 - ⁽²⁾	-
RC or MC-70	120 - ⁽²⁾	-
RC or MC-250	165 - ⁽²⁾	140 - 175 ⁽³⁾
RC or MC-800	200 - ⁽²⁾	165 - 210 ⁽³⁾
RC or MC-3000	230 - ⁽²⁾	175 - 240 ⁽³⁾
Emulsified asphalt -		
RS-1	70 - 140	-
RS-2	120 - 185	-
MS-1	70 - 160	70 - 160
MS-2, MS-2h	-	70 - 160
HFMS-1, 2, 2h, 2s	70 - 160	50 - 160
SS-1, 1h, CSS-1, 1h	70 - 160 ⁽⁴⁾	70 - 160
CRS-1	120 - 185	-
CRS-2	140 - 185	-
CMS-2, CMS-2h	105 - 160	120 - 140
Asphalt cement -		
All grades	350 max.	350 max.
PG grades	365 max.	365 max.

(1) Temperature of mix immediately after discharge.

(2) The maximum temperature at which fogging or foaming does not occur.

(3) Temperature may be above flash point. Take precautions to prevent fire or explosion.

(4) For fog seals and tack coats.

Section 703.--AGGREGATE

703.02. Add the following:

Gravel will not be permitted.

703.05(a). Delete items (3) and (4).

703.05(a)(5) Delete and substitute the following:

(5) Fractured faces, ASTM D 5821 50% min.

703.05(b). Add the following:

(3) Plasticity Index, AASHTO T90 3 Max

703.05(b). Add the following:

Material shall have a minimum California Bearing Ratio of 70 % as determined by AASHTO T 193 at 95% of maximum dry density in accordance with AASHTO T 180 (Method D).

703.05(b). Delete Table 703-2 and substitute the following:

**Table 703-2
Target Value Range for Subbase and Base Gradation**

Sieve Size	Percent by Mass Passing Designated Sieve (AASHTO T 27 and T 11)				
	Grading Designation				
	A (Subbase)	B (Subbase)	C (Base)	D (Base)	E (Base)
2 ½ in.	100 ⁽¹⁾				
2 in.	97-100 ⁽¹⁾	100 ⁽¹⁾	100 ⁽¹⁾		
1 ½ in.		97-100 ⁽¹⁾			
1 ¼ in.					
1 in.	65-79 (6)		80-100 (6)	100 ⁽¹⁾	
¾ in.			64-94 (6)	86-100 (6)	100 ⁽¹⁾
½ in.	45-59 (7)				
3/8 in.			40-69 (6)	51-82 (6)	62-90 (6)
No. 4	28-42 (6)	40-60 (8)	31-54 (6)	36-64 (6)	36-74 (6)
No. 40	9-17 (4)			12-26 (4)	12-26 (4)
No. 200	4.0-8.0 (3)	4.0-12.0 (4)	4.0-7.0 (3)	4.0-7.0 (3)	4.0-7.0 (3)

⁽¹⁾ Statistical procedures do not apply.

() Allowable deviations (+/-) from the target values.

703.05(b)(1) Add the following:

At the option of the Contractor, the gradation only of the aggregate base may conform to the requirements of:

Section 901.-AGGREGATES, Table 901A, Graded Aggregate - Base Design Range, as specified in the 1993 Edition of the Standard Specifications for Construction and Materials of the Maryland Department of Transportation, State Highway Administration, which is as follows:

<u>Sieve Designation</u>	<u>Percentage by Weight Passing</u>	<u>Allowable Deviation</u>
2 in.	100	-
1 ½ in.	95-100	±5
¾ in.	70-92	±6
3/8 in.	50-70	±7
No. 4	35-55	±6
No. 30	12-25	±4
No. 200	0-8	±3

Section 208.-SUBBASE AND AGGREGATE BASE MATERIAL, Table II-9, Size Nos. 21A or 21B, as specified in the January 1997 Edition of the Virginia Department of Transportation, Road and Bridge Specifications, which are as follows:

<u>Sieve Designation</u>	<u>Percentage by Weight Passing</u>		<u>Allowable Deviations</u>
	<u>Size No. 21A</u>	<u>Size No. 21B</u>	
2 in.	100	100	-
1 in.	94-100	85-95	± 6
3/8 in.	63-72	50-69	± 7
No. 10	32-41	20-36	± 6
No. 40	14-24	9-19	± 4
No. 200	6-12	4-7	± 3

Section 804.04(B) – GRADED CRUSHED STONE BASE as specified in the District of Columbia, Department of Transportation Specification which is as follows:

<u>Sieve Designation</u>	<u>Percentage by Weight Passing</u>	<u>Allowable Deviation</u>
2 in.	100	-2
1 ½ in.	95-100	±5
¾ in.	70-92	±8
3/8 in.	50-70	±8
No. 4	35-55	±8
No. 30	12-25	±5
No. 200	0-8	±3

703.07(a). Delete line (3) and substitute the following:

(3) Fractured faces, ASTM D 5821

75 min.

703.07(a). Delete item (4).

703.07(b). Delete item (1).

703.17 Superpave Asphalt Concrete Pavement Aggregate. Delete (a) thru (h) and substitute the following:

- (a) Los Angeles abrasion, AASHTO T 96 35% max.
- (b) Sodium sulfate soundness loss of coarse and fine aggregate (5 cycles), AASHTO T 104 12% max.
- (c) Coarse aggregate angularity, ASTM D 5821 Table 703-10
- (d) Fine aggregate angularity, AASHTO TP33 method A Table 703-10
- (e) Flat and elongated particles, 3 to 1 ratio, ASTM D 4791 10% max.
- (f) Sand equivalent value, AASHTO T 176, referee method Table 703-10
- (g) Gradation. Size, grade, and combine the aggregate fractions in mix proportions that result in a composite blend between the control points for the appropriate nominal maximum size is one sieve size greater than the first sieve to retain more than 10 percent of the combined aggregate. It is not recommended to produce mixes for a nominal maximum size aggregate that fall in restricted zone shown in Table 703-12 as appropriate. Test according to AASHTO T 11 and AASHTO T 27.
- (h) For the surface course, do not use aggregates known to polish, or carbonate aggregates containing less than 25 percent by mass of insoluble residue when tested according to ASTM D 3042.

Table 703-10, 703-11, 703-12, 703-13. Delete the tables and substitute the following:

**Table 703 -10
Superpave Aggregate Requirements**

Design ESALs (million)	Coarse Aggregate Angularity (Percent), minimum		Uncompacted Void Content of Fine Aggregate (Percent), minimum		Sand Equivalent minimum	Flat and Elongated (Percent), maximum 3:1 Ratio
	#4 in	> 4 in.	#4 in.	> 4in.		
< 0.3	55/-	-/-	--	--	40	--
0.3 to < 3	75/-	50/-	40	40	40	10
3 to < 10	85/80	60/-	45	40	45	
10 to <30	95/90	80/75	45	40	45	
≥ 30	100/100	100/100	45	45	50	

Note: "85/80" denotes that 85 % of the coarse aggregate has one fractured face and 80% has two or more fractured faces.

Table 703-14, 703-15, 703-16 & Figures 703-1, 703-2, 703-3. Delete the tables and figures and substitute the following:

**TABLE 703-11
SUPERPAVE AGGREGATE GRADATION**

	Nominal Maximum Aggregate Size - Percent Passing										
	Grading Designation										
	A		B		C		D				
	1 in.		¾ in.		½ in.		3/8 in.				
Sieve Size	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Target Values	Allowable Deviation	
1 ½ in.	100	--	--	--	--	--	--	--	--		
1 in.	90	100	100	--	--	--	--	--	*		
¾ in.	--	90	90	100	100	--	--	--	*		
½ in.	--	--	--	90	90	100	100	--	*		
3/8 in.	--	--	--	--	--	90	90	100	*		
No. 4	--	--	--	--	--	--	--	90	*	(6)	
No. 8	19	45	23	49	28	58	32	67	*	(6)	
No. 30	--	--	--	--	--	--	--	--	*	(4)	
No. 50	--	--	--	--	--	--	--	--	*	(3)	
No. 200	1	7	2	8	2	10	2	10	*	(2)	

* Contractor specified target values.

() Allowable deviations (±) from the target values.

**BLE 703-12
SUPERPAVE AGGREGATE GRADATION
RESTRICTION ZONES**

Sieve Size Within Restricted Zone	Minimum and Maximum Boundaries of Sieve Size for Nominal Maximum Aggregate Size (Minimum and Maximum Percent Passing)							
	1 in.		¾ in.		½ in.		3/8 in.	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
<i>No. 50</i>	11.4	11.4	13.7	13.7	15.5	15.5	18.7	18.7
No. 30	13.6	17.6	16.7	20.7	19.1	23.1	23.5	27.5
No. 16	18.1	24.1	22.3	28.3	25.6	31.6	31.6	37.6
No. 8	26.8	30.8	34.6	34.6	39.1	39.1	47.2	47.2
No. 4	39.5	39.5	--	--	--	--	--	--

Add the following after Subsection 703.17.

703.18 Crushed recycled concrete. Furnish a recycled material consisting of crushed concrete. A portion of the composite material may include recycled mortar or brick. The composite material shall be free of reinforcing bars or wire, organic matter, lumps or balls of clay, and other deleterious matter. Do not use material that breaks up when alternately frozen and thawed or wetted and dried. Conform to the following:

- (a) Los Angeles abrasion, AASHTO T 96 50% max.
- (b) Liquid limit, AASHTO T 89 25 max.
- (c) Plasticity index, AASHTO T 90 6 max.
- (d) California Bearing Ratio, AASHTO T 193 55% min.
- (e) Gradation. Furnish a gradation conforming to crushed recycled concrete material used locally in the construction and maintenance of highways by Federal and state agencies. Furnish a well graded crushed recycled material with a maximum size of 2 inches and not more than 12% passing the No. 200 sieve as determined by AASHTO T 27 and T 11.

Section 704. – SOIL

704.01. Add the following after 707.14:

Furnish AASHTO M 43 no. 57 crushed aggregate for foundation fill under pipe culverts and inlet structures.

704.06. Add the following:

Unclassified borrow placed behind curbs and sidewalk shall meet soil classification, AASHTO M 145 A-2, A-4, A-5, or A-2-6.

Section 710.--FENCE AND GUARDRAIL

710.08. Delete the text in the first and second paragraphs and substitute the following:

710.08 Steel-Backed Timber Rail. Furnish timber conforming to AASHTO M 168. Fabricate the 6 by 10-inch timber rail, the 4 by 9-inch blockouts, and the posts from dry, well seasoned, and dressed rough sawn Douglas fir, southern pine, or other species having a stress grade of at least 1450 psi. Treat the timber rail, blockout elements, and posts according to AASHTO M 133.

710.08. Add the following:

Rough sawn timber tolerance shall apply only to the timber cross section and post length.

710.09 Guardrail Posts. Delete this subsection and substitute the following:

710.09 Guardrail Posts. Conform to AASHTO-AGC-ARTBA “A Guide to Standardized Highway Barrier Hardware,” 1995 edition.

Do not use a wood guardrail post that has a through check, shake, or end slit in the same plane as, or a plane parallel to the bolt hole and extending from the top of the post to within 3 inches of the bolt hole.

For steel-backed timber rail posts, furnish 10 by 12- inch posts conforming to Subsection 710.08.

Furnish treated Southern Pine or Douglas Fir wood posts for guardrail conforming to AASHTO M 168.

710.12 Crash Cushion Barrels. Delete the entire subsection.

Section 712 - JOINT MATERIAL

712.01(a) Joint sealants and crack fillers. Add the following after paragraph, **712.01(a)(4)(h)**:

- (5) Multi-component joint sealant, conforming to TT-S-00227E, type I, class A or ASTM C 920, type M, grade P, class 25, use T. Provide sealant matching the color of the adjacent sidewalk. Conform to the sealant manufacturer’s recommendations for use of primers.

712.01(c). Delete the text and Table 712-1 and substitute the following:

712.01(c) Preformed joint seals and sleeves.

- (1) **Paving applications.** Conform to AASHTO M 220. Use a lubricant conforming to ASTM D 2835, which was manufactured within 9 months of use.

(2) Circular concrete sewer and culvert pipes using rubber gaskets. Furnish oil resistant gaskets conforming to AASHTO M 315M and the following:

(a) Minimum thickness	Recommendation of drainage element manufacturer
(b) Tear resistance, lb/in, ASTM D 624 (die B)	
(1) Ethylene propylene di monomer (EPDM)	230 lb/in min.
(2) Neoprene	115 lb/in min.

(3) Resilient connectors between reinforced concrete manhole structures and pipes. Conform to ASTM C 923M.

(4) Preformed flexible joint sealants for concrete pipe, manholes, and precast box sections. Conform to ASTM C 990M.

712.01(e). Delete the text and substitute the following:

712.01(e) Silicone joint sealant. Conform to ASTM D 5893 type NS.

712.01(f) Low-modulus silicone joint sealant. Conform to ASTM D 5893 type SL.

712.05. Delete the text and substitute the following:

712.05 Mortar for Masonry Beds and Joints.

(a) Material.

(1) Hydraulic cement.	Subsection 701
(a) <i>Portland cement</i>	Table 701-1, type I, IA, II, IIA, III, or IIIA
(b) <i>Blended hydraulic cement</i>	Table 701-1, type IS, IS-A, IP, IP-A, I(PM) or (PM)-A
(c) <i>Masonry cement</i>	Table 701-1

- | | |
|------------------------------|---|
| (2) Fine aggregate | Subsection 703.01 or AASHTO M 45 |
| (3) Lime | ASTM C 207, type S or SA. Type N or NA, if tests show it not to be detrimental to mortar soundness. |
| (4) Water | Subsection 725.01 |
| (5) Air entraining admixture | Subsection 711.02 |

(b) Composition. Conform to the proportions for one of the mixes in Table 712-3. Uniformly mix with water to a spreading consistency.

(c) Compressive strength, AASHTO T 106 2030 psi, 28-day min.

Table 712-3 Mortar Proportions by Volume

Mortar	Portland Cement	Blended Hydraulic Cement	Masonry Cement	Lime	Aggregate	Air (%)*
Cement - Lime	1	-	-	1/4 to 1/2	Not less than 2-1/4 and not more than 3 times total volume of cementous material	8 - 12
Masonry Cement	-	-	1	-		8 - 12
Blended Hydraulic Cement	-	1	-	1/4 to 1/2		8 - 12

* When air is required, determine air content per ASTM C 91 except use the same material and proportions used in construction.

Section 713.--ROADSIDE IMPROVEMENT MATERIAL

713.01. Add the following:

For furnished topsoil, submit a soil analysis report from the State University Agricultural Extension Service or other approved soil testing laboratory. Include in the report the soil textural classification (percentage of sand, silt, clay and organic matter) and additive recommendations.

713.02. Add the following:

Use a maximum of 0.17 lb of limestone per ft³ of topsoil in order to adjust an acidic condition.

713.03. Add the following:

Furnish fertilizer containing the following minimum available nutrients:

Total nitrogen	10%
Available phosphoric acid	10%
Water-soluble potash	10%

Fertilizer to be the slow release type.

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

Conform to the Federal Seed Act, the Federal Noxious Weed Act, and applicable State and local seed and noxious weed laws.

713.05 Mulch. (b) Hay. Delete this subsection.

713.06(b). Add the following:

The genus, species, and cultivar names shall agree with the nomenclature of the most current edition of "Hortus Third" by L.H. Bailey, Hortorium, Cornell University.

Provide durable tags, stating the date of installation, correct botanical name and size in weather-resistant ink or embossed letters. Secure the tags to each tree, shrub, and other plant materials in a manner which will not restrict growth. Leave the tags on all trees, shrubs, and other plant materials until final acceptance by the CO.

713.08. Add the following after 713.08(g):

(h) Tree protection. Tree protection shall be a flexible PVC pipe 4 inches in diameter, 12 to 13 inches in height.

713.16. Delete the text and substitute the following:

713.16 Silt Fence. Conform to AASHTO M 288.

Section 721.--ELECTRICAL AND ILLUMINATION MATERIAL

721.01(c). Add the following:

Furnish either ozone resistant cross-linked polyethylene (XLP) or polyvinyl chloride (PVC) insulated cable, with or without a nylon jacket, as applicable, conforming to the following:

XLP - IPCEA S-66-524 and NEMA WC-7 (code type XHHW)
PVC - UL 83, ANSI C33.80-1971, and Federal Specification J-C-304
(code types THWN or THW)

721.01(c). Add the following:

Furnish soft drawn or annealed copper conductors conforming to ASTM B 3, and stranding conforming to ASTM B 8. Furnish 7 strand for #10 AWG through #2 AWG, and 17 strand for #1 AWG through #4/0 AWG. Furnish #6 AWG minimum solid copper ground wires.

721.02(a). Add the following:

28'-6"/30' Pendant Post with Arm

The post will be octaflute monotube 11 gauge steel, 8" x 4" x 28'-6" (in case of 28'-6" pole) or 9.5" x 5.65" x 38'-6" (in case of 38'-6" pole) with a continuous 0.14 inches per foot taper.

The 28'-6" posts will include a single welded simplex to accommodate 3 to 8 foot single member arm, or a double welded simplex to accommodate 3 to 8 foot truss type arm for post installed on structures.

The shaft will be fabricated from 11 gauge steel meeting ASTM-A595 GR A with a yield point of a no less than 55,000 psi. A cast steel anchor base will be welded to the bottom of the shaft in an scalloped pattern. The base will have four (4) bolt holes per the drawing. The base will be complete with ornamental bolt covers and the attaching screws. All posts will have a strain cable grip installed to support the post cables.

All lighting standards for use on bridge structures shall be provided with a vibration damper and damper pads. A vibration damper consisting of a weighted device shall be attached inside the pole to dampen the vibration of the pole. The vibration damper shall be suitable for mounting in

steel poles and shall be fabricated from corrosion-resistant materials. The dampers shall be factory installed and blocked in place during shipping. A damper pad shall be provided at the base of each pole. The vibration and damper pads shall be tested and approved design and certified copies of test reports shall be submitted together with installation details for approval.

The arms will be fabricated from steel. The post and arm will be cleaned of all rolled-in mill scale, impurities and nonmetallic foreign materials. The welds will be cleaned of all weld flux. The post and arm to be degreased by immersion in a heated caustic solution, then pickled in a heated sulfuric acid solution. The base will then be rinsed in a fresh water bath to remove any residual effects of the caustic or acid baths. The post and arm will then be immersed in a concentrated zinc ammonium chloride solution and allowed to air dry before being galvanized. The post and arm are to be hot-dip galvanized to the requirements of either ASTM A123 or ASTM A153. The galvanized coating will be free of any debris or flux ash.

All galvanized exterior surfaces visually exposed are to be coated with a Urethane or Triglycidyl Isocyanurate (TGIC) polyester powder to a minimum dry film thickness of 2.0 mils. Prior to application, the surfaces to be powder coated are to be mechanically etched by brush blasting (ref. SSPC-SP7) and the zinc coated substrates preheated to 232°C (450° F) for a minimum of one (1) hour in a gas-fired convection oven. The coating will electrostatically applied and cured by elevating the zinc coated substrate temperature to a minimum of 177°C (350°F) in a gas-fired convection oven. The color will match appropriate Federal Color Chip (announced for each job or as directed by the Engineer).

The pole will be wrapped in either a 3/16" U.V. inhibited plastic backed packing foam or cradled in a 1" rubberized foam base. The arms will be wrapped in a 3/16" U.V. inhibited plastic packed packing foam.

As part of the catalog cuts, the contractor shall submit copies of the following certifications:

1. That the welds meet the requirements of AWS D1.1.
2. Material will be provided for all ASTM number referred to in this specification.
3. Copy of factory certification that it meets the requirement of American Institute of Steel Construction (AISC) category.
No. 14 Cast Iron Post

All cast iron components, regardless of the method by which they are produced and assembled, shall be uniform quality and appearance; true to pattern; fine surface texture; free from blow holes, porous spots, hard spots, shrinkage faults, wrap, buckle, cracks, die marks, and all other defects peculiar to the method of production used, which may adversely affect the use, appearance or strength of the component or post.

Each component shall be carefully and thoroughly cleaned of all sand, scale, fins, core anchors, welds, machine markings, projections, imperfections, etc., injurious to insulated electrical conductors or detrimental to its use or appearance.

Each separable component shall bear as pertinent a lot number, casting number, pattern number, or other identifying number for record purposes so that the production history may be traced and contractor shall make such history available on demand. The components shall not bear any other mark, lettering, numbering or identifying device not specifically authorized in writing by the CO.

All ornamentation and markings shall be sharp and clearly defined. The desired finish for these components shall be the finest surface of high-grade fabrication with a minimum of grinding, machining, dressing, etc., in accordance with normal foundry practices. Excess dressing shall be cause for rejection. Bolt holes must be clean and true with good alignment in the companion pieces to permit the interchangeability of castings. The shafts shall be straight and true with not more than 3/8" deflection along the length when rotated on the end centers.

The castings shall be Heavy Wall Cast Iron per ASTM A48-83 Class 30. All castings shall be true to pattern and of fine surface texture with a minimum of machining and/or grinding, and shall have a uniform wall thickness $\pm 1/8'$. All components shall receive a coat of iron oxide red both inside and out.

Paint

Furnish poles prime-painted inside and outside with an iron oxide paint unless not in accordance with the manufacturer's recommendations. Paint lamp posts using two coats of Benjamin Moore Ironclad Retardo Rust Inhibitive Paint 163, Color #80, Black Satin Finish, or approved equal. Clean all surfaces prior to paint application.

Submit all proposed methods of surface preparation and paint applications to the CO for approval. Conduct the work in accordance with local, State and Federal pollution rules and regulations. Be responsible for acquiring full knowledge of these rules and regulations and complying with them.

Handle posts carefully in order to prevent damage to the surface, preventing dents and scratches. Repair paint that is scratched or damaged prior to final acceptance, using matching paint.

721.02(c). Add the following:

Steel Transformer Base

The transformer base with a hinged door shall be fabricated with dimensions as detailed on the Standard Drawing. The base shall be fabricated from hot rolled carbon steel meeting ASTM-A36. The base shall be 20" high, 16" square at the base, and 13" square at the top. The top and bottom plates shall be made of $3/4"$ minimum thick steel plate. The body of the base shall be made of 7 gauge steel. The base shall be provided with 4 (four) loose steel plate anchor clips to fasten the base to the anchor bolts. Each base shall be provided with 1" x 3" bolts with nuts and washers to connect the post shaft to the base. The door opening in the base shall be 8-1/2" x 9" x 13-1/4". The door shall be secured in place with a stainless steel piano hinge at the top with 4 (four) stainless steel rivets and a latch locking device at the bottom. Each base will also include 4 " x 1" x 40" anchor bolts, nuts, and washers. The base will be cleaned of all rolled-in mill scale, impurities and non-metallic foreign materials. The welds will be cleaned of all weld flux. The base is to be degreased by immersion in a heated caustic solution, and then pickled in a heated sulfuric acid solution. The base will then be rinsed in a fresh water bath to remove any residual effects of the caustic or acid baths. The base will then be immersed in a concentrated zinc ammonium chloride solution and allowed to air dry before being galvanized. The base, door and anchor clips are to be hot dip galvanized to the requirements of ASTM A-123.