GOVERNMENT OF THE DISTRICT OF COLUMBIA

DEPARTMENT OF TRANSPORTATION

INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION

SPECIAL PROVISIONS

INVITATION NO.: DCKA-2013-B-0147

PROJECT:
REHABILITATION OF 1ST STREET, N.E.
FROM MASSACHUSETTS AVENUE TO G STREET

FAP NO.: FTA-4000 (088)

Bids will be publicly opened by the:

Office of Contracting and Procurement
55 M Street S.E., Suite 400
Washington, D.C. 20003

Bids Will Be Opened On _____ At 2:00 P.M.

GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

TITLE PAGE – SPECIAL PROVISIONS

ISSUING OFFICE:
Department of Transportation
Office of Contracting and Procurement
55 M Street, S.E., Suite 400
Washington, D.C. 20003

BID DOCUMENTS
Where refundable deposits are required for the specifications and drawings they shall be returned without MARKS, NOTES, OR MUTILIATIONS 10 days after bid opening or deposit will be forfeited.

Requests for clarification or interpretation of Bid Documents prior to date of Bid Opening:

ADDRESS TO:

Program Manager, Ward 5 & 6
Infrastructure Project Management Admin.
Department of Transportation
55 M Street, S.E., Suite 400
Washington, D.C. 20003

Prospective Bidders

To bid this contract, detach the Bid Form package which is bound to the back of this book, fill out all forms along with the Bid Guaranty as required, and submit it to the Issuing office prior to the time of bid opening.

TABLE OF CONTENTS

TABLE OF CONTENTS

APPENDICES

SPECIAL PROVISIONS

This document contains provisions, requirements, and instructions pertaining to this contract:

REHABILITATION OF 1ST STREET N.E., FROM MASSACHUSETTS AVE NE TO G STREET NE

INVITATION NO. DCKA-2013-B-0147

This is a Federal-Aid Contract; Form FHWA-1273, REQUIRED CONTRACT PROVISIONS, FEDERAL-AID CONSTRUCTION PROJECTS, applies.

This document consists of:

-SPECIAL PROVISIONS: Pages i thru v; pages 1 thru 134; and appendices A thru N.

-BID FORM AND PROPOSALS: Pages 1 thru 27 including PAY ITEM SCHEDULE (12 pages).

-CONTRACT PLANS: Consisting of sheet 1 thru 93.

-ADDENDA, if any, issued prior to bid opening, further supplement and modify the proposed contract

Bidders should satisfy themselves that they have a complete document. Missing pages will not constitute the basis for a valid claim.

This document supplements and modifies the District of Columbia Department of Transportation STANDARD SPECIFICATIONS FOR HIGHWAYS AND STRUCTURES, 2009, SUPPLEMENTAL SPECIFICATIONS 2007, and STANDARD DRAWINGS, 2009, incorporated herein by reference.

Reference to Division Numbers, Section Numbers, and Article Numbers refers to the STANDARD SPECIFICATIONS FOR HIGHWAYS AND STRUCTURES, 2009.

The S.P. number refers to the section of these SPECIAL PROVISIONS.

In the PAY ITEM SCHEDULE, the first three-digit portion of each pay item refers to the section of the STANDARD SPECIFICATIONS in which the item is described.

1. CONTRACT TYPE

In accordance with the District of Columbia Municipal Regulations, Title 27, Chapter 24, the contract type will be fixed fee or lump sum.

2. CONTRACT ADMINISTRATION

Contracting Officer: Contracts may be entered into and signed on behalf of the District Government only by contracting officers. The contracting officer is the only District official authorized to contractually bind the District. The contracting officer is the:

Agency Chief Contracting Officer (ACCO)
Department of Transportation
55 M Street, S.E., Suite 700
Washington, DC 20003
Phone: (202) 671-2200.

Authorized Changes by the Contracting Officer:

A. The Contracting Officer is the only person authorized to approve changes in any of the requirements of this contract.

B. The Contractor shall not comply with any order, directive or request that changes or modifies the requirements of this contract, unless issued in writing and signed by the Contracting Officer

C. In the event the Contractor effects any change at the discretion of any person other than the Contracting Officer, the change will be considered to have been made without authority and no adjustment will be made in the contract price to cover any cost increase incurred as a result thereof.

Contracting Officer's Technical Representative (COTR): The term COTR is synonymous with the term Engineer. The Engineer for this contract is:

Mr. Ali Shakeri, PE
Program Manager / Wards 5 & 6
District Department of Transportation
55 M Street, S.E., Suite 400
Washington DC 20003

The COTR will have the responsibility of ensuring that the work conforms to the requirements of this contract and such other responsibilities and authorities as may be specified in the contract. The COTR will act as the contracting officer's representative for technical matters, providing technical direction and discussion, as necessary with respect to the specifications or statement of work, and monitoring the progress and quality of the contractor's performance. Other responsibilities include the following:

A. Keeping the CO fully informed of any technical or contractual difficulties encountered during the performance period and advising the ACCO of any potential problem areas under the contact;

B. Coordinating site entry for Contractor personnel, if applicable;

C. Reviewing and approving invoices for fixed-price deliverables to ensure receipt of goods and services. This includes the timely processing of invoices and vouchers in accordance with the District's Payment provisions; and

D. Maintaining a file that includes all contract correspondence, modifications, records of inspections (site, data, equipment) and invoices/vouchers.

It is understood and agreed, in particular, that the COTR is not a contracting officer and does not have the authority to:

A. Award, agree to, or sign any contract, delivery order or task order. Only the ACCO shall make contractual agreements, commitments, or modifications;

B. Grant deviations from or waive any of the terms and conditions of the contract

C. Direct the accomplishment of effort, which is beyond the scope of the statement of work in the contract;

D. Increase the dollar limits of the contact or authorize work beyond the dollar limit of the contract, or authorize the expenditure of funds by the Contractor:

E. Change the period of performance; and

F. Authorize the furnishing of District property, except as specified under the contract.

When in the opinion of the contractor, the COTR requests effort outside the existing scope of the contract, the contractor shall promptly notify the contracting officer in writing. The contractor under such direction shall take no action until the contracting officer has issued a modification to the contract or until the issue has been otherwise resolved.

3. CONTRACTOR IDENTIFICATION

All contractors doing business with the District of Columbia Government shall have a federal Tax Identification Number.

Please refer any questions regarding this matter to the office of the Chief Financial Officer, (202) 671-2300, of the D.C. Department of Transportation.

4. PRE-BID CONFERENCE

Prospective bidders are invited to attend a meeting to discuss the proposed work under this contract. Representatives of the Department will be available to answer questions relative to the work. Bidders who expect to attend should inform the Department prior to the meeting date. Any pertinent data or change resulting from the conference will be included in any addendum issued to all perspective bidders after the conference; however the importance of attending the meeting is stressed. Any questions or conflict identified prior to bid should be brought out during this meeting.

The date, time and location of this pre-bid conference will be identified through an addendum to the contract.

5. PRE AWARD APPROVAL

Pursuant to Section 2201 of the Fiscal Year 2003 Budget Support Amendment Congressional Review Emergency Act of 2003 D.C. Act 15-27, effective February 24, 2003, the Mayor must submit to the Council for approval any contract action over one million dollars.

6. COORDINATION WITH OTHERS:

In preparation of his/her bid, the bidder is advised to take into consideration the fact that other contracts have been, will be, or may be let for work in the vicinity of the project area. The Contractor shall coordinate his work and cooperate fully with all others in order to eliminate or curtail delays and interference of any kind. Particular attention shall be made with regard to proper maintenance of highway and pedestrian traffic through the project area. The Contractor shall perform his

lane closing and reopening so as not to cause interference with others or to be in conflict with performance of traffic maintenance by others.

The District assumes no liability for contract delays or cost resulting from performance or non-performance of others.

The District will not consider any claims for compensation due to delay, without a written authorized time extension.

7. BID GUARANTY

This S.P. supplements Section 102.1, Article 12(A):

The bid guaranty period shall be **ninety (90) calendar days** after bid opening.

An Irrevocable Letter of Credit or United states government securities that are assigned to the District which pledge the full faith and credit of the United States are acceptable.

The bid guaranty includes an amount to cover the Contractor's bid price.

8. PAYMENT BOND

Article 12C of the Instructions to Bidders of the **STANDARD CONTRACT PROVISIONS 1973**, is amended to incorporate the provisions of Section 504(b) of the District of Columbia Procurement Practices Act of 1985, which require payment bonds in an amount not less than fifty (50) percent of the amount payable by the terms of the contract.

9. AWARD OR REJECTION

This S.P. supplements Section 102.1, Article 18:

The Department of Transportation intends to award this contract within ninety (90) calendar days. However, if for administrative reasons, the District is unable to make an award within this period, the Department will request the Contractor and his/her surety extend the bid bond.

10. SPECIFICATIONS AND DRAWINGS

The following replaces Section 103.1, Article 2. Order of Precedence:

The Contractor shall keep on the work site a copy of Contract drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the contract drawings, or shown on the Contract drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both.

All contract requirements are equally binding. Each Contract requirement, whether or not omitted elsewhere in the Contract, is binding as though occurring in any or all parts of the Contract.

The District of Columbia Department of Highways and Traffic Standard Specifications (2009) and amendments thereto are incorporated by reference into this contract. In case of discrepancy:

1. The Contracting Officer shall be promptly notified, in writing, of any error, discrepancy or omission, apparent or otherwise.

2. Applicable Federal and D.C. Code requirements have priority over: The Contract Form, General Provisions, Labor Provisions, Change Orders, Addenda, Contract Drawings, Special Provisions and Specifications.
3. The Contract Form, General Provisions and Labor Provisions have priority over: Change Orders, Addenda, Contract Drawings, Special Provisions and Specifications.

4. Change Orders have priority over: Addenda, Contract Drawings and Specifications.

5. Addenda have priority over: Contract Drawings, Special Provisions and Specifications. A later dated Addendum has priority over earlier dated Addenda.

6. Special Provisions have priority over: Contract Drawings and other Specifications.

7. Shown and indicated dimensions have priority over scaled dimensions.

8. Original scale drawings and details have priority over other different scale drawings and details.

9. Large scale drawings and details have priority over small scale drawings and details.

Any adjustment by the Contractor without a prior determination by the Contracting Officer shall be at his/her own risk and expense. The Contracting Officer will furnish from time-to-time, such detail drawings and other information as he may consider necessary, unless otherwise provided.

11. EQUITABLE ADJUSTMENT OF CONTRACT TERMS

Provisions of Article 103.01, Article 4, Significant changes in the character of work, paragraph 4(b), replace 125 percent with 200 percent and replace 75 percent with 50 percent.

12. DISPUTES

All disputes arising under or relating to this contract shall be resolved as provided herein.

A. Claims by a Contractor against the District.

Claim, as used in Section B of this clause, means a written assertion by the Contractor seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract. A claim arising under a contract, unlike a claim relating to that contract, is a claim that can be resolved under a contract clause that provides for the relief sought by the claimant.

(a) All claims by a Contractor against the District arising under or relating to a contract shall be in writing and shall be submitted to the Contracting Officer for a decision. The contractor's claim shall contain at least the following:

(1) A description of the claim and the amount in dispute;

(2) Any data or other information in support of the claim;

(3) A brief description of the Contractor's efforts to resolve the dispute prior to filing the claim; and

(4) The Contractor's request for relief or other action by the contracting officer.

(b) The Contracting Officer may meet with the contractor in a further attempt to resolve the claim by agreement.

(c) For any claim of $50,000 or less, the Contracting Officer shall issue a decision within sixty (60) calendar days from receipt of a written request from a Contractor that a decision be rendered within that period.

(d) For any claim over $50,000, the Contracting Officer shall issue a decision within ninety (90) calendar days of receipt of the claim. Whenever possible, the Contracting Officer shall take into account factors such as the size and complexity of the claim and the adequacy of the information in support of the claim provided by the Contractor.

(e) The Contracting Officer's written decision shall do the following:

(1) Provide a description of the claim or dispute;

(2) Refer to the pertinent contract terms;

(3) State the factual areas of agreement and disagreement;

(4) State the reasons for the decision, including any specific findings of fact, although specific findings of fact are not required and, if made, shall not be binding in any subsequent proceeding;

(5) If all or any part of the claim is determined to be valid, determine the amount of monetary settlement, the contract adjustment to be made, or other relief to be granted;

(6) Indicate that the written document is the contracting officer's final decision; and

(7) Inform the Contractor of the right to seek further redress by appealing the decision to the Contract Appeals Board.

(f) Any failure by the Contracting Officer to issue a decision on a contract claim within the required time period will be deemed to be a denial of the claim, and will authorize the commencement of an appeal to the Contract Appeals Board as authorized by D.C. Official Code § 2-309.04.

(g) (1) If a Contractor is unable to support any part of his or her claim and it is determined that the inability is attributable to a material misrepresentation of fact or fraud on the part of the Contractor, the Contractor shall be liable to the District for an amount equal to the unsupported part of the claim in addition to all costs to the District attributable to the cost of reviewing that part of the Contractor's claim.

(2) Liability under this paragraph (f) shall be determined within six (6) years of the commission of the misrepresentation of fact or fraud.

(h) The decision of the Contracting Officer shall be final and not subject to review unless an administrative appeal or action for judicial review is timely commenced by the Contractor as authorized by D. C. Official Code § 2-309.04.

(i) Pending final decision of an appeal, action, or final settlement, a Contractor shall proceed diligently with performance of the contract in accordance with the decision of the Contracting Officer.

B. Claims by the District against a Contractor

(a) Claim as used in Section C of this clause, means a written demand or written assertion by the District seeking, as a matter of right, the payment of money in a sum certain, the adjustment of contract terms, or other relief arising under or relating to this contract. A claim arising under a contract, unlike a claim relating to that contract, is a claim that can be resolved under a contract clause that provides for the relief sought by the claimant.

(b) (1) All claims by the District against a Contractor arising under or relating to a contract shall be decided by the Contracting Officer.

(2) The Contracting Officer shall send written notice of the claim to the Contractor. The Contracting Officer's written decision shall do the following:

(a) Provide a description of the claim or dispute;

(b) Refer to the pertinent contract terms;

(c) State the factual areas of agreement and disagreement;

(d) State the reasons for the decision, including any specific findings of fact, although specific findings of fact are not required and, if made, shall not be binding in any subsequent proceeding;

(e) If all or any part of the claim is determined to be valid, determine the amount of monetary settlement, the contract adjustment to be made, or other relief to be granted;

(f) Indicate that the written document is the Contracting Officer's final decision; and

(g) Inform the Contractor of the right to seek further redress by appealing the decision to the Contract Appeals Board.

(3) The decision shall be supported by reasons and shall inform the Contractor of his or her rights as provided herein.

(4) The authority contained in this clause shall not apply to a claim or dispute for penalties or forfeitures prescribed by statute or regulation which another District agency is specifically authorized to administer, settle, or determine.

(5) This clause shall not authorize the Contracting Officer to settle, compromise, pay, or otherwise adjust any claim involving fraud.

(c) The decision of the Contracting Officer shall be final and not subject to review unless an administrative appeal or action for judicial review is timely commenced by the District as authorized by D.C. Official Code §2-309.04.

(d) Pending final decision of an appeal, action, or final settlement, the Contractor shall proceed diligently with performance of the contract in accordance with the decision of the Contracting Officer.

13. PROTEST

This S.P. deletes the last two sentences of the 1st paragraph of Section 103.1, Article 8, and replaces it with the following:

The protest shall be filed in writing, with the:

Contract Appeals Board
441 4th Street NW, Suite 350N
Washington, D.C. 20001

The aggrieved persons shall also mail a copy of the protest to the Contracting Officer for the solicitation.

For more information visit online: www.cab.dc.gov

14. WORK AND STORAGE SPACE

This S.P. supplements Section 103.1, Article 17 (B)

No work and storage area is being designated. The Contractor shall be fully responsible for seeking necessary space and undergoing all required

negotiations with the owner of the property to secure its use and for restoring the area to its original condition and to the satisfaction of the Engineer.

15. APPLICABLE WAGE DECISION/WAGE RATES

In accordance with the applicable provisions of 29 CFR, Part 1 which requires that the correct wage determination and the appropriate wage rates therein be incorporated into this contract. **General Wage Decision No. DC130001 08/23/2013 DC1** is bound herein and contains the specific applicable wage rates which are:

(A) All work commonly recognized in the construction industry as Road or Highway Rehabilitation or Upgrading is to be performed utilizing:

Heavy and Highway Rates

Further, as set forth in 29 CFR, Part 1, Section 1.6(c) (3) (IV), if the intent to award letter is not issued within ninety (90) days of bid opening, all intervening modifications (or new wage decision) are applicable. The contractor will be reimbursed this added labor cost.

16. SCOPE OF WORK

This S.P. supplements section 104.01:

Work under this contract consists of the reconstruction of First Street NE from Massachusetts Ave NE to G Street NE within the District. All work shall be performed within the exsisting right of way as shown on the typical sections. The work includes, but is not limited to, the following items:

1) Full depth concrete base widening from north of Massachusetts Ave NE to G Street NE
2) Resurfacing and wedge/level of 1st Street NE from north of Massachusetts Ave NE to G Street NE
3) Reconstruct sidewalk, driveways, and pedestrian ramps to comply with ADA requirements
4) Upgrade storm sewer system along 1st Street NE from north of Massachusetts Ave NE to G Street NE
5) Install cycle track along 1st Street NE from north of Massachusetts Ave NE to G Street NE
6) Modifications to traffic signals at 1st Street NE & crosswalk at Union Station/Postal Museum
7) Upgrade streetlighting along 1st Street NE from north of Massachusetts Ave NE to G Street NE
8) Replacement and/or resetting of granite curb
9) Signing and Pavement marking
10) Traffic control, Sediment & Erosion Control, Tree protection

In addition to the above, any incidental items of work necessary for a complete and finished product are included as part of this contract.

17. SCOPE OF WORK - MAINTENANCE OF HIGHWAY TRAFFIC

This S.P. supplements and modifies 104.02. Reference to the MUTCD shall be to the 2009 edition.

GENERAL - Work consists of proper maintenance of vehicular and pedestrian traffic within and adjacent to the project and includes, but is not limited to the following for contract duration: safety officer, flaggers and watchmen; public convenience and safety; furnishing, placing, maintenance, removal and disposal of all traffic control devices as defined in the MUTCD (Manual on Uniform Traffic Control Devices for Streets and Highways, latest edition, U.S. Department of Transportation, Federal Highway Administration and subsequent revisions).

Minimum requirements are presented below. Work includes all operational needs for proper traffic maintenance and coordination with the District of Columbia Department of Transportation (DDOT) traffic requirements outside the project area.

The contractor shall contact DDOT's Traffic management center for operational issues during construction:

DDOT Traffic Management Center	202-671-3368

(A) TRAFFIC FLOW RESTRICTIONS – First paragraph of 104.02(A) is deleted and replaced with the following:

Requirements for maintaining open lanes vary by roadway, type of work, and time of day as indicated by the following table:

Roadway	Type of Work	Traffic Flow Requirements	Hours Applicable
First Street NE from G Street NE to Massachusetts Avenue NE	Milling and overlay, pavement marking applications, signage, streetlighting, and other miscellaneous work not behind approved temporary traffic barriers	Maintain at least one lane for southbound direction using MUTCD-compliant flagger control. Maintain pedestrian access on at least one side of street and to all building entrances.	9:30 AM-3:30 PM Monday-Friday*
First Street NE from G Street NE to Massachusetts Avenue NE	Utility, Roadway or Sidewalk reconstruction, signage, streetlighting, and other miscellaneous work behind approved temporary traffic barrier	Maintain at least one lane for southbound direction using MUTCD-compliant flagger control. Maintain pedestrian access on at least one side of street and to all building entrances.	8:00 AM-7:00 PM Monday-Friday*

*Night work and weekend work must be approved by the COTR and in accordance with Noise and Lighting Specfications

Exceptions to the maintenance of traffic flow requirements for legal holidays shall be as determined by the Engineer on an individual basis.

All temporary traffic lanes shall be a minimum of 11' -0" wide, except as shown on the plans. No materials or equipment shall be placed or stored on city travelways when work is not actually in progress, unless specifically authorized.

(B) TRAFFIC CONTROL PLAN (TCP) – The third paragraph of 104.02(B) is deleted and replaced with the following:

The Contractor may use the traffic control plans in the contract documents without submitting them for approval. If the Contractor wishes to accept the TCP for use on the project, he shall so certify by letter to the Contracting Officer. The Contractor shall schedule an appointment with the COTR to discuss how the plan will be implemented. If the Contractor wishes to use an alternative traffic control plan, a Traffic Control Plan (TCP) for each work phase shall be submitted to the Engineer for approval, based upon the requirements and intents of the contract documents, the MUTCD, the D.C. Temporary Traffic Control Manual, 2009 Edition and the traffic flow restrictions found in this S.P., prior to starting any construction.

If the TCP does not cover any portion of work within the project limits, the contractor shall prepare a supplemental TCP.

This TCP shall be based upon the requirements and intents of the contract documents, the MUTCD, the D.C. Temporary Traffic Control Manual, 2009 Edition and the traffic flow restrictions found in this S.P., prior to starting any construction.

All costs for preparation, submission, revising and resubmittal, if necessary, of this TCP will be borne by the Contractor. This Traffic Control Plan (TCP) shall:

(1) Show in detail the arrangement, size and location of all appropriate warning signs, channelizing devices, Type III Barricades, barrier, crash attenuating devices, and any other devices deemed necessary for each phase of construction.

(2) Contain an itemized summary for each phase of the type and quantity of all traffic control devices which will be needed for that phase.

(3) Maintain equal or greater traffic flow capacity and lane widths as shown in the suggested TCP.

A copy of the approved TCP and permits must be on site at all times available for review by DDOT personnel.

The Contractor shall give the District a minimum of two weeks advance notice of intent to modify the traffic control as shown in the approved plans. The Contractor shall provide seventy-two (72) hours prior notice to the District when making a change in traffic flow patterns or temporarily closing alleys based on approved plans.

(C) TRAFFIC CONTROLS

(1) GENERAL. The second paragraph of 104.02(C)(1) is deleted and replaced with the following:

Work shall be performed within the specified hours. The Contractor shall obtain approval from the Engineer before working at any other times. Traffic flow shall be maintained as indicated on the plans. The time required to implement and remove closures and install and remove traffic control devices shall be included within the stated time periods.

The following is added at the end of 104.02(C)(1):

The Contractor shall coordinate alternative access with property owners before closing driveways, garages, or loading docks for adjacent construction. If alternative access is not available, the Contractor shall schedule the closure

for a time within the indicated sub-phase that is acceptable to the property owner.

Proper security measures shall be taken to keep unauthorized persons from entering into the opened construction areas of the project.

All traffic control devices shall be in new or like new condition. All traffic control devices used on this project shall meet the testing and evaluation criteria specified in NCHRP (National Cooperative Highway Research Program) Report No. 350. Certifications that all traffic control devices meet said criteria shall be submitted to the Engineer for approval prior to use.

Approved warning signs, channelizing drums, cones, arrow panels, etc. shall be provided to insure motorists of positive guidance in advance of and through the work zone. Erection of regulatory signs such as stops, speed limit and no parking signs must be specifically authorized.

The work site shall be made safe for traffic during night time hours by installing electronically illuminated warning lights that operate during night time hours. These devices shall be used in conjunction with other traffic control devices, and their flashing sequence and light intensity shall meet the requirements cited in the MUTCD. All traffic control devices shall be reflectorized during nighttime hours.

The temporary signs and markings placed in or adjacent to the work zone shall be consistent and visible at all times. The existing signs and markings may be covered and /or removed temporarily if the intended function of these signs and markings will not be applicable during construction. However, they shall be replaced promptly when work is completed. All temporary signs no longer applicable to the work zone shall be removed, covered or turned away from traffic. The Contractor shall document all existing pavement markings and signage that is removed due to their work. The Contractor shall place temporary pavement markings at the end of each workday. The COTR shall approve all temporary and permanent markings.

Traffic control devices not in use during the current phase of work shall be removed from the work zone. Construction signs not in use shall be 100% covered. All traffic control devices used for maintenance of traffic shall remain the property of the Contractor and shall be removed from the project site upon completion of work.

The Contractor shall perform all traffic signal construction during the construction sub-phase indicated on the traffic signal plans.

(2) TRAFFIC SAFETY OFFICER. Add to 104.02(C)(2) the following:

The traffic safety officer shall coordinate with DDOT and its data collection contractors to allow monitoring of traffic within the work area. This may include providing space for DDOT or its contractors to locate traffic count equipment within the work area or within the temporary lanes.

(3) PEDESTRIAN CONTROL. Add to 104.02(C)(3) the following:

The Contractor shall coordinate with property owners to maintain pedestrian access to all buildings. The Contractor shall construct sidewalk sections and pedestrian ramps near intersection corners as shown. Temporary pedestrian barrier shall be used to separate pedestrians from the work area.

Steel plates shall be placed over areas left excavated during previous phases or sub-phases that are not within the construction areas shown. Temporary ADA compliant handicap ramps and/or protective walkways are also the responsibility of the Contractor. The cost for steel plates and temporary walkways shall not be paid for separately, but rather the cost shall be distributed among the various pay items.

The Contractor shall provide pedestrians with a 6' walkway (minimum 4'). This walkway should be safe, convenient and replicate as nearly as possible the most desirable characteristics of sidewalks or footpaths. Pedestrians should not be led into direct conflict with the work site operations or mainline traffic moving through or around the work site. All pedestrians including blind, hearing impaired and physically challenged need protection. All necessary signs and supports for closing sidewalks and detouring pedestrians shall be the Contractor's responsibility.

(4) LANE CLOSURES. Add to 104.02(C)(4) the following:

Areas of the construction work zone that are immediately adjacent laterally to an active temporary travel lane shall be protected either with portable precast concrete barriers with sand barrel or other type crash cushion attenuators or with portable water-filled temporary traffic barrier. As shown in the plans or otherwise modified in the field by the contractor, portable water-filled temporary traffic barrier shall only be used where the barrier needs to be placed along a horizontal radius shorter than 100 feet to allow space for movement of vehicles or pedestrians.

Portable changeable message signs will be required to give the motoring public advance notification of road conditions and road work two weeks prior

to start of work and during construction work. These devices shall be used in conjunction with other traffic control devices, and their flashing sequence and light intensity shall meet the requirements as outlined in this S.P.

No material or equipment shall be placed or stored on the designated roadway during any phase of construction unless otherwise authorized.

The Contractor shall furnish all necessary flaggers that may be required during the course of construction activities. It is the responsibility of the Contractor to ensure that trained personnel administer flagging. They shall be equipped with safety vests, hard hats and hand signaling devices per section 6F-2 of the MUTCD. The devices shall be pole-mounted Stop/Slow paddles, 24 inches in diameter, with 6 inch Series C letters. The cost of providing flaggers is incidental. No measure will be made. Payment for providing flaggers shall be reflected in the bid for Construction Lane Closing.

(5) ROADWAY CLOSURES. Add to 104.02(C)(5) the following:

The Contractor shall set detours and turn restrictions as shown in conjunction with intersection sub-phase construction. To maintain the integrity of the detours and provide adequate pedestrian access, no part of any two sub-phase plans with different letter designations (i.e. 1A & 1B) should be implemented at the same time.

(6) PAVEMENT MARKINGS. Add to 104.02(C)(6) the following:

The Contractor shall remove existing pavement markings which conflict with temporary pavement markings or channelizing devices during construction. When existing pavement markings are removed, the area shall be painted with emulsified or cut back asphalt.

The Contractor shall furnish and install temporary pavement markings as shown and shall remove these markings and existing markings without damaging the finished pavement surface, in accordance with this TCP and/or as directed by the Engineer.

Temporary white and yellow pavement markings placed on concrete prior to final asphalt surface construction shall have a 2” black outline to provide contrast.

Add the following at the end of 104.02:

(D) FAILURE TO MAINTAIN TRAFFIC - Failure on the part of the Contractor, at any time, to comply with the provisions of 104.02, 616 and this S.P. will result in the immediate notification of the Contractor by the Engineer to comply with the required maintenance of traffic provisions. In the event that the Contractor fails to make the needed corrections to unsatisfactory site maintenance so as to conform to the provisions of 104.02 and 616 within 24 hours after receipt of such notice, the Engineer may notify the Contractor to suspend all work at the contract work site until such time that the maintenance of traffic deficiencies are corrected. In the event that the Contractor fails to respond to a notice of unsatisfactory maintenance of traffic deficiencies within 24 hours after receipt of such notice, the Engineer may immediately proceed with other forces and equipment to maintain the project. The entire cost of this maintenance by the District will be deducted from monies due the Contractor on the next monthly invoice.

An appropriate deduction will be made from the Contractor's next Progress Estimate for each day, or portion thereof, that Maintenance of Traffic deficiencies exist and will continue until the deficiencies are corrected and accepted by the Engineer. Any portion of a day will be considered a full day deduction. The amount prorated will be the per diem amount established by using the Calendar Days (based upon Calendar Dates when required) divided into the total value of the bid item. The amount of monies deducted will be a permanent deduction and will not be recoverable.

Upon satisfactory correction of the deficiencies, payment of the Maintenance of Traffic items will resume.

(E) TEMPORARY ASPHALT CONCRETE – All metal plates used for traffic shall be protected by asphalt concrete for smooth ride for the vehicles. This work shall be governed by Specification Section 411 except that this work will be considered as incidental to the items under Maintenance of Traffic and will not be measured for payment.

18. VALUE ENGINEERING CHANGE PROPOSALS

This S.P. Modifies 104.03

Replace first paragraph of 104.03(A) with the following:

GENERAL – This contract allows the use of Value Engineering Change Proposals (VECPs) which are initiated and developed by the Contractor to change the Contract drawings and specifications, or other requirements of the Contract for the purpose of reducing the total cost of construction without reducing design capacity, or quality of the finished product.

19. SHOP AND WORK DRAWINGS

This S.P. supplements 105.02 (B) (2).

Shop Drawings and Working Drawings shall be submitted to:

Program Manager, Ward 5 & 6
Infrastructure Project Management Administration
District Department of Transportation
55 M Street, S.E., Suite 400
Washington, D.C. 20003

Shop and Working Drawings for Sewers and Water-mains shall be submitted to:

Chief, Utility Inspection Section
D.C. Water
5010 Overlook Avenue, S.W.,
Washington, D.C. 20032

Materials certifications and laboratory test reports shall be submitted to:

Chief, Materials Development and Research Branch
DC Department of Transportation
55 M Street, S.E.
Washington, DC 20003

20. UTILITY STATUS

The District of Columbia Department of Transportation maintains coordination with the utility companies. The Contractor shall be required to maintain and continue this coordination throughout the construction of the project. Construction delays as a result of inadequate coordination shall be the Contractor's responsibility.

Utility company work outside the scope of the project is anticipated. It will be necessary for utility companies to perform work before, during, and/or after construction related to the contract work being performed. This work will consist of:

a) Inspection of furnished materials and utility supports installed by the Contractor
b) Being present for demolition or concrete placement in the vicinity of their facilities.

c) Relocation and/or adjustment of existing facilities such as laterals, mains, lines, ducts, or manhole frames.

The Contractor's involvement and coordination with utility companies includes, but is not restricted to, the following:

a) Adjustment and resetting of utility manholes and manhole frames respectively to new grades.

b) Support of existing utility lines and poles.

c) Location and verification of existing utility lines (as shown on the plans)

d) Maintenance, protection and assurance of continuous review for the duration of the project of utility company facilities within the project limits.

e) Installing proposed water line, appurtenances, and service connections.

f) Accomodating the relocation of gas lines and service connections proposed by others.

Adjusting or resetting manhole frames other than sewer and water will be performed by the respective utility company in conjunction with reconstruction.

All other utility work (sewer, water, surface and sub-surface drainage work) shall be performed by the Contractor.

21. WEEKEND WORK

This S.P. modifies article 105.10 and 105.11.

The normal work hours for this contract are:

Monday thru Friday 8:00 AM to 7:00 PM

Most scheduled work will be initiated and completed between the work hours provided above. However weekend work may be required as determined by the Engineer in congested areas where serious traffic difficulties would result if the repairs were performed during the normal work week.

It is estimated that the amount of weekend work will not exceed fifteen percent (15%) of total work to be performed under the contract.

22. NIGHT WORK

Replace table in 105.11(A) with the following:

D.C. MAXIMUM PERMITTED NOISE LEVEL

Zone	Maximum Noise Level, dBA	
	Daytime	Nighttime
Residential, Special Purpose, or Waterfront Zone	60	55
Commercial or Light Manufacturing Zone	65	60
Industrial Zone	70	65

23. PROJECT SECURITY

(A) **GENERAL** – Portions of the general project site will be open to the public during construction. The Contractor shall take the necessary measures to prevent vandalism and theft of materials, equipment and tools as well as the completed work on the project site. The D.C. Department of Transportation shall not be held liable for any loss or damage resulting there from.

(B) **MEASURE AND PAYMENT** – No direct measure or payment will be made. The cost of the project security shall be reflected, and distibuted among the various contract Pay items.

24. SALVAGED MATERIAL:

Existing light and traffic signal fixtures and other electrical appurtenances designated by DDOT as reusable are to be removed and delivered by the Contractor to a designated DDOT storage yard. Prior to removal and delivery the Contractor shall contact the Traffic Operations Administrator at (202) 671-2700 to make arrangements. Payment for delivery of salvaged material shall be included in various bid items for electrical work.

Existing granite curb shall be salvaged and returned to DDOT storage yard location as directed by the Engineer. The cost of salvaging existing granite curb shall be incidental to the various contract items.

25. ADDITIONAL EQUIPMENT

This S.P. supplements requirements of Section 106.02:

The Contractor shall provide the Project Engineer with supply containers and molds to obtain samples (specimen) for the duration of the contract.

Examples of containers and molds are cure boxes, molds for beams and concrete cylinders, jars for tack coat sampling, labels and other miscellaneous supplies. The Project Engineer may request some special containers and molds at his discretion. The Office of Materials Development and Research Branch may request additional containers and molds.

The Contractor should schedule the delivery of these containers and molds to the Project Engineer to insure that this delivery will not disrupt the work in progress. No measure and payment will be made. The cost of providing containers and molds shall be included in the unit price of the material sampled.

26. ADDITIONAL LABORATORY EQUIPMENT

This S.P. supplements the requirements of 106.06:

The Contractor shall also furnish, maintain and replace as necessary, the following equipment:

No.	Description
1	Mold and Tamping Rod for testing the slump of plastic concrete, conforming to requirements of AASHTO T-119-82 (Slump of Portland Cement Concrete).
1	Pressure Pot for Air Entrainment Testing.
2	Digital Thermometer

An independent laboratory shall properly calibrate the above air meters and their certification furnished to the Engineer.

All equipment included under this item shall remain the property of the Contractor at the end of the contract.

No separate measure will be made for this work. Payment for Additional Laboratory Equipment will be included under Engineer's Field Facilities, Item 642 002.

27. INSURANCE

Refer to Section 107.13 of the Specifications.

28. UTILITY PROTECTIVE ALERT

This S.P. modifies section 107.16

On the top of page 100, delete table and replace with the following:

NAME	TELEPHONE NO	FACILITIES
Miss Utility (Wash. Gas, Verizon, Pepco, AT&T Comcast)	1-800-257-7777	Gas lines, telephone, electric, communication conduits and cables
DCWater	202-612-3400	Water and sewer mains
DDOT	202-671-4625 (Desk) 202-359-2678 (Cell)	Street Lights
DDOT	202-437-8061	Traffic Signal System
DDOT	202-671-3368	Traffic Management Center

29. TITLE VI ASSURANCE

During the performance of this Contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as

follows:

(1) COMPLIANCE WITH REGULATIONS

The contractor shall comply with the Regulations relative to Non-Discrimination in Federally Assisted Programs of the Department of Transportation, Title 49, Code of Federal Regulations, Part 21, (hereinafter referred to as the "Regulations"), as they may be amended from time to time, which are incorporated by reference and made a part of this contract.

(2) NON-DISCRIMINATION

The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, gender or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. A contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

(3) SOLICIATIONS FOR SUBCONTRACTORS, INCLUDING PROCUREMENTS OF MATERIALS AND EQUIPMENT
In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, gender, or national origin.

(4) INFORMATION AND REPORTS
The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts and other sources of information, and its facilities as may be determined by DDOT or the Federal Highway Administration to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the contractor shall so certify to DDOT, or the Federal Highway Administration, as appropriate, and shall set forth what efforts it has made to obtain the information.

(5) SANCTIONS FOR NON-COMPLIANCE
In the event of the contractor's non-compliance with non-discrimination provisions of this contract, DDOT shall impose such contract sanctions as it or

the Federal Highway Administration may determine to be appropriate, including, but not limited to:

- withholding of payments to the contractor under the contract until the contractor complies, and/or

- cancellation, termination, or suspension of the contract, in whole or in part.

(6) INCORPORATION OF PROVISIONS
The Contractor shall include the provisions of paragraphs (1) through (6) of this Assurance in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto.

The contractor shall take such action with respect to any subcontract or procurement as DDOT or FHWA may direct as a means of enforcing such provisions including sanctions for noncompliance provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of this direction, the contractor may request DDOT to enter into such litigation to protect the interests of DDOT, and in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

30. SUBCONTRACTING

The subcontractor approval request form included herein should be used to request approval of subcontractors on this project. The form should be completed for each subcontractor requested for approval and submitted to:

Attention:
Contracting Officer
District Department of Transportation
Office of Contracting and Procurement
55 M Street, S.E., Suite 400
Washington, DC 20003

Copies of these forms are available upon request.

Copies of subcontracts shall be made available for review at any time by representatives of the District Department of Transportation.

31. CONSTRUCTION SCHEDULING

This Special Provision replaces Article 108.03 of the Standard Specifications in its entirety.

A. DEFINITIONS.

The following definitions pertaining to construction schedules shall apply with respect to all scheduling provisions set forth in the Contract:

1. Activity: Any task, or portion of a project, that takes time to complete.

2. Baseline Schedule: The initial CPM schedule representing the Contractor's original work plan, as accepted by the Engineer.

3. Controlling Operation: The activity within that series of activities defined as the Critical Path, which, if delayed or prolonged, will delay the time of completion of the Contract.

4. Critical Path: The series of activities that determines the earliest completion of the project (Le., the Forecast Completion Date) in accordance with the terms and conditions of the Contract.

5. Critical Path Method: A mathematical calculation that determines the earliest completion of the project in accordance with the terms and

conditions of the Contract and that includes a graphic representation of the sequence of activities showing the interrelationships and interdependencies of the elements composing a project.

6. Current Contract Completion Date: The date for completion of the Contract based on the total number of days, or fixed completion date as specified for full and final completion of the work in the contract documents.

7. Differential Completion Time: The difference in time between the Current Contract Completion Date and the Contractor's scheduled early Forecast Completion Date as shown on the Baseline Schedule, or schedule updates and revisions thereto.

8. Float: The amount of time between the early start date and the late start date, or the early finish date and the late finish date, of any activity or group of activities in the network. See Free Float and Total Float.

9. Forecast Completion Date: The Early Finish date of the last scheduled work activity identified on the Critical Path.

10. Fragment: A section or fragment of the network diagram comprised of a group of activities.

11. Free Float: The amount of time an activity can be delayed without delaying the Early Start of a successor activity.

12. Hammock Activity: A non-critical activity added to the network to span an existing group of activities for summarizing purposes.

13. Milestone: An activity that represents a significant point in time, and may be used to indicate the start or end of a series of related activities and/or contract accomplishment. A milestone has zero original and remaining duration, and does not increase the Contract time.

14. Revision: A change in the schedule that modifies logic, revises the current contract completion date, adds or deletes activities, or alters activities, sequences, descriptions, calendars, actual dates, or durations.

15. Tabular Listing: A report showing schedule activities, their relationships, durations, scheduled and actual dates, float, resources, and all log notes where comments are inserted for an activity.

16. Total Float: The amount of time that an activity may be delayed without affecting the total duration of the project.

17. Update: The modification of the most current Contractor CPM progress schedule through a regular and periodic (at least monthly) review to incorporate actual progress to date by activity. Update shall indicate changes to the activity's percent complete, actual start and actual finish dates.

B. PRE-CONSTRUCTION SCHEDULING CONFERENCE.

The Engineer will schedule and conduct a Pre-Construction Scheduling Conference with the Contractor's Project Manager and Construction Scheduler within fifteen (15) working days after the Bidder has received the Contract for execution.

At this meeting, the requirements of the Special Provisions regarding scheduling will be reviewed with the Contractor. At the Pre-Construction Scheduling Conference, Contractor shall furnish a Preliminary Baseline Schedule as discussed in section C, and be prepared to discuss both its proposed methodologies for fulfilling the scheduling requirements and its sequence of operations.

At the Pre-Construction Scheduling Conference, the Contractor shall be prepared to discuss the requirements for all off-site material testing and submittals applicable to the Contract, discuss their respective preparation, and review durations.

C. PRELIMINARY BASELINE SCHEDULE.

The Preliminary Baseline Schedule shall use the Critical Path Method, and indicate all major activities of work required under the Contract, from commencement of the work to completion of the work. These activities shall be detailed significantly small enough to communicate the Contractor's understanding of the construction sequencing and phasing of the project. For each major activity, the Contractor shall indicate the amount of time necessary to perform the activity and the anticipated beginning and completion date of each activity. In addition, the Preliminary Baseline Schedule shall indicate the

sequence of performing each major activity and the logical dependencies and inter-relationships among the activities.

The Preliminary Baseline Schedule shall include all submittals and required offsite material testing required by the Contract. Furthermore, the schedule shall include activities for the Engineer's review, with the corresponding allowable period of days specified in the contract, for each submittal and offsite testing activity.

The Engineer will be allowed 15 working days to review the Preliminary Baseline Schedule and to provide comments regarding it. The Preliminary Baseline Schedule does not require the Engineer's acceptance, but all comments from the Engineer with respect to the Preliminary Baseline Schedule shall be incorporated within the Baseline Schedule. Re-submittal of the Preliminary Baseline Schedule is not required. Further, late review of the Preliminary Baseline Schedule by the Engineer shall not restrain the Contractor's submittal of Baseline Schedule. No site disturbance shall be allowed until the Engineer has reviewed and commented on the Preliminary Baseline Schedule, or the 15-day review period has elapsed.

D. BASELINE SCHEDULE.

Within Twenty (20) working days of the Notice to Proceed, Contractor shall submit to the Engineer a Baseline Schedule, which shall incorporate any and all comments provided by the Engineer regarding the Preliminary Baseline Schedule.

The Baseline Schedule shall have a date of the effective date of the Notice to Proceed and shall not include any work prior to that date. The Baseline Schedule shall be accompanied by a Baseline Schedule Narrative as described in Section H. The Baseline Schedule shall depict how the Contractor plans to complete the work of the Contract and shall show all those activities that defines the Critical Path. The scheduled time for each activity shall be reasonable, depicting a realistic time to perform the activity. The Baseline Schedule shall provide for the adequate planning of the project, as well as the Engineer's monitoring and evaluation of progress and analysis of time impacts. Contractor shall not attribute any negative float to any activity depicted on the Baseline Schedule. The Engineer will be allowed thirty (30) calendar days to review and approve the Contractor's submittal of the Baseline Schedule. Should the Engineer reject Contractor's submittal of the Baseline Schedule, Contractor shall resubmit a revised schedule within fifteen (15) working days of receipt of Engineer's review comments, at which time a new thirty (30) calendar day review period by the Engineer will begin.

E. GENERAL REQUIREMENTS REGARDING SCHEDULES.

The Baseline Schedule and all schedules submitted thereafter by the Contractor shall comply with the following requirements.

All schedules shall be created, updated and provided to the owner in print copy and also electronically in the most current version of Primavera and shall comply with (1) any and all interim target dates and/or milestones specified by the Contract; (2) all constraints, restraints or sequences specified by the Contract; and (3) the number of days set forth in the Contract for completion of the work.

All schedules submitted to the Engineer shall be depicted graphically by network diagrams. The Contractor's network diagrams shall be time-scaled to show a continuous flow of information from left to right. The critical path shall be clearly and graphically identified on the network diagrams.

All network diagrams prepared by Contractor shall be organized in a logical fashion. The activities shown on the diagrams shall be sorted and grouped per work structure, with the work covered by each Contract Item separately designated by distinct schedule activities.

All schedules shall identify, at a minimum, the following activities:

1. Identification of utility relocations and interfaces as separate activities, including activity description and responsibility coding that identifies the type of utility and the name of the utility company involved.

2. Identification of all tests, submission of test reports, and approval of test results required under the Contract.

3. Identification of Punch list and final clean up required by Contractor to complete the work. Contractor shall designate not more than thirty (30) days for Contractor's performance of Punch list and final clean-up activities.

4. Identification of any manpower, material, or equipment restrictions, as well as the specific identification of any activity requiring unusual shift work, such as double shifts, 6-day weeks, specified overtime, or work at times other than regular days or hours.

Each activity depicting Contractor's operations at the work site shall have duration of not more than fifteen (15) working days and not less than one (1) day

unless permitted otherwise by the Engineer. All activities shown in the schedule, with the exception of the first and last activities, shall have a minimum of one (1) predecessor and a minimum of one (1) successor activity.

The Schedule shall be resource loaded, indicating resource allocations for each type of labor craft and each equipment class with respect to each and every activity indicated in the schedule. The resource loading shall include sufficient labor and equipment to properly execute the activity with respect to the Original Duration depicted in the Schedule. Contractor shall optimize and level labor to reflect a reasonable plan for accomplishing the work of the Contract and to assure that resources are not duplicated in concurrent activities.

For each activity in the network, the Contractor shall determine the contract value of the work activity. Administrative activities, Owner activities and milestones shall have an assigned cost of zero. The summation of the costs of all activities shall be equal to the cost of the project, or the Contractor's approved bid for the construction of the project. These costs are to be incorporated into the Schedule and the anticipated daily earnings computed for both early and late starts. These earnings are to be graphically displayed in a time-cost chart ("S" curve).

Float shall not be considered as time for the exclusive use of or benefit of either the Owner or the Contractor but shall be considered as a jointly owned, expiring resource available to the project and shall not be used to the financial detriment of either party. Any schedule, including the Baseline Schedule and all updates thereto, showing an early completion date shall show the time between the forecast completion date and the Contract Completion Date as "project float".

In connection with the submittal of the Baseline Schedule and all updates thereto, Contractor shall require all of its subcontractors to submit in writing a statement certifying that the subcontractor has concurred with the schedule and that the subcontractor's related schedule has been incorporated accurately, including the duration of activities and labor and equipment resource loading.

Engineer's acceptance of a Contractor schedule shall not constitute a change of any portion of the Contract. Failure of the Contractor to include any element of work required by the Contract in its schedules shall not relieve the Contractor from completing the work within the time limit specified for completion of the Contract. If the Contractor fails to define any element of work, activity or logic, and the omission or error is discovered by either the Contractor or the Engineer, it shall be corrected by the Contractor in regard to the next monthly update or revision of the schedule.

Should the Baseline Schedule or any update thereto show variances from the scheduling requirements of the Contract, Contractor shall make specific mention of the variations in the letter of transmittal, in order that, if accepted, proper adjustments to the project schedule can be made. Notwithstanding the foregoing, Contractor will not be relieved of the responsibility for completing all work required by the Contract.

In the event that the Baseline Schedule, or any updates or revisions, show completion occurring prior to the Completion Date and/or interim milestones, the Contractor must demonstrate to the Engineer that the schedule is reasonable, practical and achievable. Moreover, it is expressly understood and agreed that (i) Contractor shall have no claim against the Owner for delay, disruption, hindrance, or other impact based on any early completion indicated in Contractor's schedule(s); (ii) a delay is critical if and only if to the· extent that the delay extends the completion of the entire work to a date that is beyond the contractually specified date for full completion of the work, regardless of Contractor's planned early completion; and (iii) the contract price includes full compensation for all time-related costs associated with the Contractor working at the project site for the full duration of the time set forth in the Contract, even if Contractor represents that Contractor plans to fully finish the work in less than the time established by the Contract for full completion of the work.

Contractor shall not incorporate any changes or delays to the work in the Baseline Schedule and in all schedules submitted thereafter without the Engineer's approval.

The submittal of all schedules shall also be accompanied by computer-generated mathematical analysis tabular reports for all activities included in the network diagrams. The tabular reports (8 1/2" x 11" size) shall consist of a report detailing the following:

1. Activity number and description;
2. Activity Codes Line
3. Original and remaining durations;
4. Earliest start date (by calendar date);
5. Earliest finish date (by calendar date);
6. Actual start date (by calendar date);
7. Actual finish date (by calendar date);
8. Latest start date (by calendar date);
9. Latest finish date (by calendar date);
10. Identify activity calendar ID;
11. Total Float and Free Float, in calendar days;
12. Percentage of activity complete and remaining duration for incomplete activities;

13. Detailed Predecessor and;
14. Detailed Successor.
15. Resources assigned to each activity
16. Cost associated with each activity.

Unless otherwise specifically noted elsewhere in these Special Provisions, network diagrams and the tabular reports shall be submitted to the Engineer in the following quantities:

1. 4 sets of the network diagrams on "E" size (36" x 48") sheets
2. 4 sets of the network diagrams on reduced-size (11" x 17") sheets;
3. 8 copies of a II tabular reports (8 1/2" x 11" size);
4. 8 copies of the "S" curve; and
5. 2 copies of electronic files of the Primavera data and the schedule narrative report on CD-ROM.

F. WEEKLY PROGRESS MEETINGS.

Engineer and the Contractor shall hold weekly progress meetings to discuss, among other things, (i) the near-term schedule activities; (ii) the current status of as-Built documentation, RFI's, Contractor Daily Reports, Quality Control, submittals, correspondence, and Contract Change Orders; and (iii) Jobsite safety, cleanup, traffic control, and coordination issues. Furthermore, the meeting shall address any long-term schedule issues discussion of any relevant technical issues. Contractor shall develop a look-ahead schedule identifying the previous week; current week and a 2-week look ahead. Contractor's look-ahead schedules shall provide sufficient detail to address all activities to be performed and to identify issues requiring Owner action or input. Twenty-four hours prior to the weekly progress meetings, the Contractor shall furnish the look-ahead schedule in hard copy and electronic format to the Engineer for review.

No later than 2 days prior to the Weekly Progress Meeting, Contractor shall furnish a list of critical items relating to the look-ahead schedule. During the meeting the parties will jointly determine whether additional items need to be listed, the priority of items, the parties responsible for resolving the critical item and the scheduled resolution date. The updated list will be distributed with the weekly meeting minutes. Nothing herein shall be construed to excuse Contractor's obligation to timely provide either a Notice of Delay or a Notice of Potential Claim.

G. MONTHLY UPDATE SCHEDULES.

Monthly Update Schedule. Contractor shall regularly update the approved Baseline Schedule to reflect the current status of the project. On the day following the estimate cut-off date, the Contractor shall submit a Monthly Update Schedule to the Engineer. The update shall include all information available and status of the project as of the estimate cut-off date, or such other date as established by the Engineer. All Monthly Update Schedules described below shall comply with the requirements indicated in Section F, above.

All Monthly Update Schedules shall incorporate all changes previously approved by the Engineer.

Each Monthly Update Schedule shall reflect all as-built activities performed as of the effective date of the update schedule. The Monthly Update Schedule shall include the period from the last update to the effective date and for the remainder of the project. The current period's activities shall be reported as they actually took place. In the updated schedule, Contractor shall indicate the actual dates that activities were started, completed, or split. Ongoing activities shall have an indication of the percent complete and the remaining duration to complete such activities.

Portions of the schedule on which activities are complete need not be reprinted and submitted in subsequent updates. However, the electronic file of the submitted Monthly Update Schedule and the related reports shall constitute a clear record of the actual progress of the work from the effective date of the Notice to Proceed to the effective date of the update, as well as the projected future work up to final completion of the project.

The Monthly Update Schedule, and any other relevant information available, will be used to determine the effect of any contemplated or actual changes or delays to the work.

H. SCHEDULE NARRATIVE REPORTS.

Schedule Narrative Reports. Contractor shall also prepare Schedule Narrative Reports, which are to be submitted to the Engineer concurrently with each CPM submittal.

Baseline Narrative Report. The Baseline Schedule Narrative Report shall describe, in a narrative fashion, the logic of the schedule. It shall

identify the critical path and other areas of schedule delay risk. The narrative shall include a listing of all decision/approval points in the schedule.

Progress Narrative Reports. The Progress Narrative Report shall describe the physical progress of work performed by Contractor during the report period. In addition, the report shall indicate the Contractor's plans for continuing the work during the forthcoming report period, actions planned to correct any negative float, and any delays or problems and their estimated impact on the contract completion date for the project. In addition, Contractor shall include for consideration by the Engineer alternatives for possible schedule recovery to mitigate any potential delay. The report shall follow the outline set forth below:

1. Contractor's Transmittal Letter.
2. Work completed during the report period, including the labor craft and equipment class resources employed to complete the work identified during the report period.
3. Description of the current critical path of the schedule.
4. List of any and all delayed activities.
5. Status of the Contract Interim Milestone and Contract Completion Dates.
    a) On schedule
    b) Ahead of schedule and number of days
    c) Behind schedule and number of days
6. Listing of any changes to the schedule activities or logic

Narrative reports containing non-factual, subjective statements, judgments or opinions, which appear to assign responsibility or to make conclusions as to excuse ability, responsibility, or compensability for delays shall be cause for rejection of the narrative report.

On a monthly basis, and on a date to be determined by the Engineer, Contractor shall meet with the Engineer to review the Monthly Update Schedule and the Schedule Narrative Report. The Engineer will be allowed fifteen (15) working days after the meeting to review and accept or reject the Monthly Update Schedule and the Schedule Narrative Report. Rejected schedules and/or reports shall be revised and resubmitted to the Engineer within ten (10) working days, at which time a new ten (10) working day review period by the Engineer will begin. All efforts shall be made between the Engineer and the Contractor to complete the review and the approval process prior to the cut-off date for the next update schedule. To expedite the process, a second meeting

between the Engineer and the Contractor shall be held, as determined to be necessary by the Engineer.

I. SCHEDULE RELEASABLE TO THE GENERAL PUBLIC.

Concurrent with all official schedule submission described in the preceding sections, the contractor shall prepare and submit a separate milestones schedule in MS Project format that is consistent with the official Primavera schedule submission. The sole purpose of this separate MS Project schedule will be to provide information to the general public as to the progress and anticipated schedule of work.

J. SCHEDULE REVISIONS.

Contractor Proposed Revisions. Once the Baseline Schedule is accepted, the Contractor shall not make any revisions to the schedule without first obtaining the approval of the Engineer.

Possible revisions to the Baseline Schedule include, but are not limited to, changes to the logic and sequence of the activities depicted in the schedule; changes to the duration of a particular activity; and addition or deletion of activities to be included with the schedule.

Contractor's request to revise the approved Baseline Schedule shall be made in writing. The request shall set forth the reasons for the change and the proposed revisions to the activities, logic and duration of the approved schedule. In addition, Contractor shall submit a schedule analysis showing the effect of the revisions on the entire project. The analysis shall include the following:

1. An updated schedule that does not include the proposed revisions. The schedule shall have a data date just prior to implementing the proposed revisions, and the schedule shall indicate the current contract completion date;

2. A revised schedule that includes the proposed revisions. The schedule shall have the same data date as the updated schedule, and the schedule shall indicate the current contract completion date;

3. A narrative explanation of the revisions and their impact to the schedule, including any revised resource allocations for the activities depicted in the two schedules; and

4. Computer files of the updated and revised schedules, on duplicate sets of CD-ROMS.

The Engineer will be allowed 15 working days to consider Contractor's request for revision to the approved schedule. Should Engineer provide his acceptance of the proposed revision, Contractor shall incorporate the revision into the next monthly update of the schedule. However, if Engineer does not accept the proposed revision, the Contractor shall not make any change to the schedule.

The above provisions shall not be construed as a limitation on Contractor's obligation to accurately reflect the as-built progress of the work with respect to each Monthly Update Schedule. It is expressly understood and agreed that the term "revisions", as used herein shall refer to changes to the schedule with respect to work that will be prospectively performed up to completion of the project.

Engineer Required Revisions. Within fifteen (15) working days of Engineer's request, Contractor shall submit a revised schedule whenever the Engineer determines that there is a significant change in the Contractor's operations that affects the Critical Path;

K. MEASURE AND PAYMENT.

No direct payment will be made. This work is considered incidental to the scope of work being performed, the cost of which shall be considered when preparing bids.

The Owner will retain an amount equal to 25 percent of the total estimated value of all work performed during each period in which the Contractor fails to submit any of the schedules required herein, including Monthly Updates and Schedule Narrative Reports, and/or fails to conform said schedules with the requirements of this section, as determined by the Engineer.

Thereafter, on subsequent successive estimate periods the percentage the Owner will retain will be increased at the rate of 25 percent per estimate period in which the non-conformance with this specification continues. Retention due to this non-conformance shall be in addition to all other retentions provided for under the Contract. The retention for this non-conformance will be released for payment on the next monthly estimate for partial payment following the date the schedule information is brought back into compliance with this specification.

32. CONTRACT TIME

The Contractor shall start work on the date specified in a written Notice to Proceed issued by the Contracting Officer and shall thereafter complete the work within **six (6) months** or **one-hundred eighty (180)** consecutive calendar days.

33. ORDERING AND PAYMENT

This S.P. supplements Section 109.

The contractor shall not accept orders for items under this contract unless a purchase order has been issued. The participating agency shall be the Department of Transportation.

Invoices shall be submitted in duplicate to:

District Department of Transportation
Office of the Chief Financial Officer
Customer Care Division
55 M Street, S.E.
Washington DC 20003
Phone: (202) 671-2300.

Each invoice must provide the following minimum information:

1. Contractor's name, address, invoice number and date;
2. Contract line item number (CLIN) being billed for payment and total amount due;
3. Purchase order and contract number;
4. Addressee's name and address;
5. Period of service;
6. Description of services and deliverables provided;
7. Name, title, signature and phone number of preparer; and
8. Name of the contracting officer's technical representative.

Payment may be delayed for improperly prepared invoices.

34. TEMPORARY SUPPORT OF ADJACENT STRUCTURES

During excavation and adjacent construction, the contractor is responsible for supporting structures adjacent to or within the right of way. Adjacent structures may include, but are not limited to, buildings, retaining walls,

bulkheads, abutments, pavements, traffic/light/utility poles, underground utility structures, mains, laterals, and/or duct banks.

Prior to the start of construction the contractor shall perform a walk-through with the Engineer to determine what structures will require temporary support. As directed by the Engineer, the contractor shall submit shop drawings for the temporary support of adjacent structures, signed and sealed by a Professional Engineer, for approval of the Engineer.

Contractor shall notify PEPCO 7 days prior to disturbing pavement adjacent to existing utility poles. Contractor shall support exisitng utility poles as directed by PEPCO and the Engineer.

No additional payment will be made for support of adjacent structures or resulting damages to adjacent structures due to improper support during excavation and adjacent construction. No additional payment will be made for support of existing utility poles during construction.

Damages to adjacent structures or existing utility poles shall be repaired at the contactor's expense.

35. SAW CUTTING:

This S.P. modifies and supplements 202.03 and applies to all excavation and repair/Replace Items.

CONTRUCTION METHODS – During removal of existing roadways, sidewalks, curbs, gutters, alleys, driveways, concrete traffic barriers and wheelchair ramps, the portion to be removed shall be saw cut one-third (1/3) depth or as directed and/or approved by the Engineer, such that the existing materials can be removed to a neat line with a minimum damage to adjacent structures that are to remain in place. Any excessive damage done at these locations shall be repaired and restored by the Contractor at no cost to the District.

MEASURE AND PAYMENT – No measure and payment shall be made the cost of saw cutting shall be reflected and distributed among the various bid pay items.

36. ASPHALT PAVEMENT CORES:

This Special Provision supplements 401.17(A).

The Contractor shall obtain asphalt pavement cores at the direction of the Engineer within twenty-four (24) hours after lay-down.

37. ADJUSTMENT OF CONTRACT UNIT PRICE OF ASPHALT ITEMS BASED ON PRICE FLUCTUATIONS FOR ASPHALT BINDER:

This Special Provision replaces 401.18.

An adjustment will be made to the final Contract unit price of Hot Mix Asphalt items if the price of asphalt binder fluctuates significantly from the prevailing price set by DDOT as the base price or as quoted in the contract documents to the date of placement. The contract unit prices will be adjusted by the amount of fluctuation that exceeds plus or minus 10% for the contract scheduled to be paved within contract duration. Only the differential percent changes beyond the above noted plus or minus 10 percent will be used.

For the purpose of making these calculations, a monthly price index will be maintained by the DDOT. This index will be the average F.O.B. selling price of asphalt binder at the supplier's terminal in the District of Columbia or closest to the District of Columbia
The adjusted Contract unit price of Hot Mix Asphalt will be computed monthly by using the following formula:

$$F = (PP-PB)/PB \ X100$$

Where:
F = percent price increase/decrease of asphalt binder.

PP = index price of asphalt binder per ton at the placement date, and

PB = prevailing index price of asphalt binder per ton as specified in the Invitation for Bids or as fixed by DDOT.

Adjusted Contract unit price due Contractor when price of asphalt binder increases

$$A = B + (D \ X \ T \ X \ PB)$$

Adjusted Contract unit price due D-DOT when price of asphalt binder decreases:

$$A = B – (D \ X \ T \ X \ PB)$$

Where:
A= adjusted contract unit price per ton of Hot Mix Asphalt
B = Contract unit price per ton of Hot Mix Asphalt
D = differential percentage expressed as a decimal (F- .10 or F + .10 as defined above)

T = Design target asphalt content expressed as a decimal
PB= prevailing index price of asphalt binder per ton as specified in the Invitation for Bids or as fixed by DDOT.

Price adjustment will be shown as a separate entry on the monthly progress estimate; however, such adjustment will not be included in the total cost of the work for progress determination or extension of the contract time.

38. UNDERGROUND VAULTS

This S.P. supplements Article 16 of the General Provisions.

(A) The contractor shall take necessary measures to prevent damage to existing underground vaults within or adjacent to the project. It shall be the contractor's responsibility to determine the exact location for all underground vaults in the field.

(B) In the case of damage to underground vaults by the contractor, the contractor shall restore such underground vaults to a condition equivalent to that which existed prior to the damage by repairing, rebuilding, waterproofing or as may be directed by the engineer at the contractor's sole expense.

39. CONCRETE ENCASEMENT OF PVC CONDUITS

PCC mix design for encased conduits shall conform 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 the 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 2,500 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 twelve (12) 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.

MEASURE AND PAYMENT: No direct measure will be made. The cost of concrete encasement shall be incidental to the PVC conduit special provisions and to the various conduit pay items.

40. EMPLOYEE TRAINING: Item No. 000 003

Requirements of 103.04 apply.

41. WMATA ADJACENT CONSTRUCTION: Item No. 000 511

The project area is located adjacent to WMATA facilities.

Prior to construction, the contractor should review WMATA – Office of Joint Development and Adjacent Construction (JDAC) requirements on monitoring, inspections, and excavation support.

For more information, refer to WMATA-JDAC's Adjacent Construction Project Manual, which can be found online at:
http://www.wmata.com/business/joint_development_opportunities/adjacent_construction_information.cfm

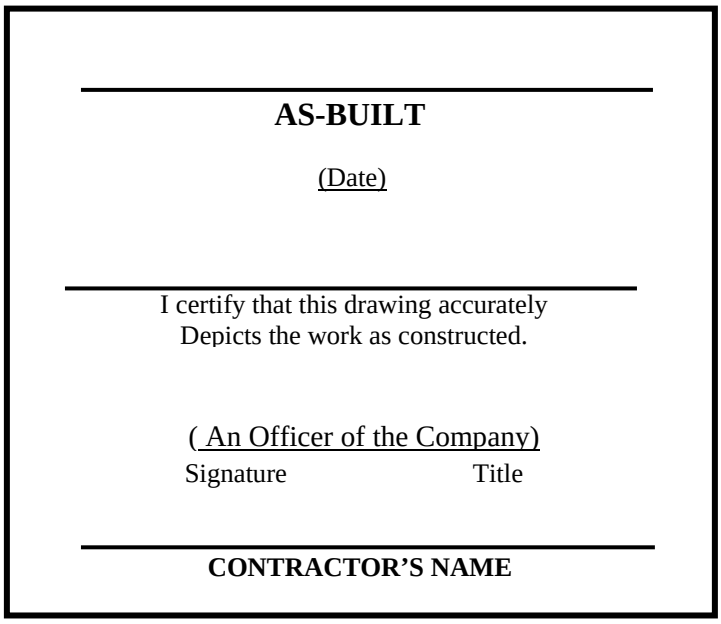
42. AS-BUILT DRAWINGS: Item No. 108 004

This S.P. modifies 108.12.

A. During the entire construction period, the Contractor shall maintain one complete record set of Contract Drawings. The Contractor shall annotate all deviations, field changes, changes accomplished by change order, horizontal and vertical locations of underground, electrical, and utility facilities referenced to survey data and temporary construction left in place.

B. The Engineer will furnish to Contractor the contract drawings electronically in Microstation (DGN) and PDF formats.. The Contractor shall use the electronic files to prepare as-built drawings by adding the information from the annotated record set. Drafting shall be performed by skilled drafters proficient in Microstation, using the DDOT workspace, matching original

Contract Drawings in line weights, symbols, fonts, and lettering style/size. The horizontal datum shall be the Maryland State plane and the vertical datum shall be the DC Engineer's datum. Completed as-built drawings shall bear the signature of an officer of the Contractor's organization, certifying compliance with as-built conditions, using a rubber stamp as follows:



C. The Contractor will resubmit final construction information to the appropriate DC Water inspectors for review and approval upon completion of installation of new services or abandonment of existing services. Submittal will be in accordance with the DC Water As-built specification, section 01 07 42. Files shall be converted and furnished to DC Water in DWG format.

D. MEASURE AND PAYMENT

Unit of measure will be lump sum.

Payment for AS-BUILT Drawings will be made at the contract lump sum price, which payment will include all performance of work specified herein.

43. COMMON EXCAVATION: Item No. 202 002

This S.P. supplements and modifies 202.02.

Common excavation shall include all excavation of existing hard surface pavement, existing subbase and existing subgrade, materials for the construction of roadway pavement, sidewalks, and curb & gutter, to be constructed to lines, grades and limits indicated on the plans and as directed by the Engineer.

Also included is special or hand excavation, as necessary, over, around, and under existing or new utility lines and appurtenances uncovered from such base undercutting. Suitable material removed as excavation under this item shall be used for backfilling the area behind the proposed curb and for sewer trench backfill.

Excavation for all other work i.e. storm and sanitary sewer structures, pipe, connecting pipes, utilities, foundations, etc. shall be paid as per the standard specifications and these special provisions.

Work under this item shall also include the removal of sidewalks, driveways, and other pavement as shown on the plans and as directed by the Engineer.

44. REMOVAL OF SOFT AND UNSUITABLE MATERIAL: Item No. 202 991

This S.P. supplements 202.02.

This is a contingent item and shall only be used as directed by the Engineer.

DESCRIPTION

The Contractor shall perform undercutting to remove soft and unsuitable material which may be encountered below the proposed permeable base, within the horizontal limits prescribed by the Engineer. Undercutting depth shall not exceed 12” below the bottom of the proposed permeable base without further review by a geotechnical engineer and approval by the Engineer. The Contractor shall furnish, place and compact the replacement material for undercutting using Geosynthetic Stabilized Subgrade using Graded Aggregate Base, Item 213002. Undercutting shall not exceed 35% of the total Common Excavation quantity.

MEASUREMENT

The unit of measurement for REMOVAL OF SOFT AND UNSUITABLE MATERIAL shall be the cubic yard.

PAYMENT
Payment for REMOVAL OF SOFT AND UNSUITABLE MATERIALS shall be made at the contract unit price per cubic yard, which payment will include all labor, equipment, tools, materials, and incidentals necessary to complete the work as specified herein.

45. BEDDING UNDER SEWER PIPES, AGGREGATE NO. 57: Item No. 208991

Aggregate for bedding under sewer pipes shall meet the requirements of Standard Specifications - Section 208 and 805.03.

Refer to AASHTO M43 for No. 57 gradation.

46. CLEAN SEWER STRUCTURES (ANY SIZE): Item No. 300004

(A) GENERAL – Work consists of cleaning selected storm sewer structures within the limits of the project, when directed by the Engineer.

The storm sewer structures shall be cleaned of all silt, deposits, leaves, and trash by either manual or mechanical means. Work shall also include removing debris to a distance of 2 ft. into the attached connecting pipe. Debris extracted from manholes or inlet must be removed from the work site by the end of each workday.

(B) MEASURE – The unit of measure for Clean Sewer Structure will be each and this measure shall include the elongated section, catchment chamber and the connecting pipe as specified.

(C) PAYMENT – Payment for Clean Sewer Structure will be made at the contract unit price per each, which payment will include all labor, equipment, tools, materials, and incidentals necessary to complete the work as specified herein.

47. DOUBLE THROAT WATER QUALITY BASIN: Item No. 310992-A

Double Throat Water quality basins shall meet the requirements of the Standard Specifications – Section 310.

Double Throat Water quality basins shall be constructed in accordance with DC Water detail S-31.02, provided in Appendix N.

48. REMOVE EXISTING CATCH BASIN: Item No. 310992-B

Existing catch basins shall be removed as shown on the contract plans and disposed of by the contractor, prior to installation of new catch basins.

Removal of Existing Catch Basins shall be measured per each and paid at the contract unit price.

49. FLOWABLE CONCRETE FILL FOR ABANDONED PIPES: Item No. 313991-A

Flowable concrete fill for abandoned pipes shall meet the requirements of the Standard Specifications – Section 804.07.

50. REMOVE EXISTING MANHOLE: Item No. 313991-B

Existing manholes shall be removed as shown on the contract plans and disposed of by the contractor, prior to installation of new manholes.

Removal of existing manholes shall be measured per each and paid at the contract unit price.

51. REMOVE/ABANDON EXISTING 12" RCP STORM SEWER: Item No. 314991-A

Existing 12" RCP storm sewer pipe shall be removed/abandoned as shown on the contract plans and disposed of by the contractor, prior to installation of new storm sewer pipe.

Removal/abandonment of Existing 12" RCP storm sewer pipe shall be measured per linear foot and paid at the contract unit price.

52. 6-INCH PVC ROOF DRAIN: Item No. 314991-B

Installation of 6-Inch PVC roof drain shall meet the requirements of Standard Specifications – Sections 314, 316, and 808.

53. PCC DRIVEWAY, 7 INCH, CLASS C CONCRETE: Item 504992

This S.P. modifies 504.

CLASS C Concrete as per section 817 of the DDOT specifications will be used for the PCC driveway entrances at STA. 18+62 RT.

54. REPAIR PCC BASE: Item 506991 (CONTINGENT ITEM)

This S.P. modifies 506.

1.0 DESCRIPTION

Work consists of making repairs to PCC pavement, base, alley and driveway and alley entrances and includes the cutting, removal and disposal of the old material from cuts or openings for underground work to a depth equal to that of the surrounding concrete, or as directed by the Engineer. Unless otherwise mentioned in Section 506 or in the contract documents, materials, construction and methods and measure and payment shall meet the requirements specified for new construction of a similar type.

After the existing asphalt surface has been milled, the condition of the existing PCC base shall be evaluated by the Engineer. The limits and methods of PCC base repair shall be determined by the Engineer based on standard drawing nos. 501.05 thru 501.09. Standard drawing no. 501.10 (PCC Pavement Repair Method 5, Mid-slab repairs) is superseded by the contract drawings.

6.0 MEASURE AND PAYMENT

Measure and payment will be determined on a contigent basis by the Engineer.

The unit of measure for Portland Cement Concrete Pavement, Base and Alley Repair will be the cubic yard. The actual number of cubic yards measured complete in place will be paid for at the contract unit price per cubic yard, which payment will include sawing, removal and disposal of excavated materials, backfill, joint materials, load transfer devices, placement of dowels, tie rods and tie bars, curing, protection, joint sealing and all labor, materials, tools, equipment and incidentals necessary to complete the work as specified herein.

55. PRECAST CONCRETE CYCLE TRACK BARRIER CURB: Item 600009-A

1.0 DESCRIPTION

Work consists of the manufacture and construction of Precast Concrete Cycle Track Barrier Curb in accordance with these specifications at locations indicated in the contract documents and/or established by the Chief Engineer.

Construction shall include the assembly and erection of all component parts and furnishing all materials complete in place.

1.1 DISCREPANCIES

Manufacturer shall bring any real or perceived discrepancy concerning dimensions, quantities or location between the drawings, details or Specifications to the attention of the Owner's Representative for resolution before beginning that portion of the work. Materials produced without this clarification shall be at the sole risk of the manufacturer.

1.2 SUBMITTALS

Submittals are intended to provide detailed fabrication information to show compliance to specification and design. It is the contractor's responsibility to highlight any proposed variances from specification on submittals. Nothing in the submittal process should be interpreted as changing or overruling the contract documents.

1. Product Data – Submittals shall provide complete product data showing conformance to the project drawings and requirements, including, but not limited to materials used, and conformance to the appropriate standards and specifications.

2. Shop Drawings – Submittals shall include detailed shop drawings, showing design information for each unit, including type and design of concrete (including concrete mix design, or record of prior approval of mix design), size, class and placement of reinforcing steel, as well as supporting design calculations, if appropriate. Shop drawings shall be rendered to scale. A general schedule for production of the units shall be included for the purposes of inspection scheduling.

1.3 STANDARDS, SPECIFICATIONS AND REFERENCE DOCUMENTS

1. American Association of State Highway and Transportation Officials (AASHTO)
2. American Concrete Institute (ACI)

   ACI 211.1 – Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete.

   ACI 224.1R – Causes, Evaluation and Repair of Cracks in Concrete Structures

   ACI 304 – Guide for Measuring, Mixing, Transporting and Placing Concrete

   ACI 305 – Hot Weather Concreting ACI 306 – Cold Weather Concreting

   ACI 309R – Consolidating of Concrete

ACI 503 – Standard Specification for Repairing Concrete with Epoxy Mortars. ACI 517 – Accelerated Curing at Atmospheric Pressure

ACI SP-2 – Manual of Concrete Inspection

3. American Society for Testing and Materials (ASTM)

ASTM A 615 – Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement

ASTM A 706 – Standard Specification for Low-Alloy Steel Deformed Bars for Concrete Reinforcement.

ASTM A 775 – Standard Specification for Epoxy-Coated Reinforcing Steel Bars. ASTM

ASTM C 31 – Standard Practice for Making and Curing Concrete Test Specimens in the Field

ASTM C 33 – Standard Specification for Concrete Aggregates

ASTM C 39 – Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens

ASTM C 42 – Standard Test Method for Obtaining and Testing Drilled Cores and
Sawed Beams of Concrete.

ASTM C 94 – Standard Specifications for Ready-Mixed Concrete

ASTM C 143 – Standard Test Method for Slump of Hydraulic Cement Concrete

ASTM C 150 – Standard Specification for Portland Cement

ASTM C 172 – Standard Practice for Sampling Ready-Mixed Concrete.

ASTM C 231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.

ASTM C 260 – Standard Specification for Air-Entraining Admixtures for Concrete. ASTM C 293 – Test Method for Flexural Strength of Concrete (Using Simple Beam with Center-Point Loading)

ASTM C 403 – Standard Test Method for Time of Setting of Concrete Mixtures by Penetration Resistance

ASTM C 494 – Standard Specifications for Chemical Admixtures for Concrete.

ASTM C 618 – Coal Fly Ash or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.

ASTM C 989 – Standard Specification for Ground Granulated Blast Furnace Slag for Use in Concrete and Mortars.

ASTM C 1017 – Chemical Admixtures for Use in Producing Flowing Concrete. ASTM C 1064 – Standard Test Method for Temperature of Freshly Mixed Portland Cement Concrete.

ASTM C 1077 – Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.

ASTM C 1240 – Standard Specification for Silica Fume for Use in Hydraulic-Cement Concrete and Mortar.

ASTM C 1602 – Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete.

ASTM C 1603 – Test Method for Measurement of Solids in Water

ASTM E 329 – Standard Practice for Use in Evaluation of Testing and Inspection Agencies as Used in Construction.

4. American Welding Society (AWS)

   AWS D1.4 – Structural Welding Code – Reinforcing Steel

5. Concrete Reinforcing Steel Institute(CRSI) CRSI – Manual of Standard ractice

   CRSI – Placing Reinforcing Bars

   CRSI – Reinforcement Anchorages and Splices

6. International Code Council (ICC) Concrete Manual

7. DDOT Standard Specifications

ADDITIONAL REFERENCES – In addition to the above Standards and Specifications, the following resources may be referenced as well.

1. National Precast Concrete Association – NPCA Guide Specifications for Precast Concrete Products

2. Portland Cement Association – Design and Control of Concrete Mixtures

2.0 QUALITY ASSURANCE AND QUALITY CONTROL

All precast concrete product manufacturers shall have a Quality Assurance and Quality Control (QA/QC) program. Manufacturers have an option to develop their program with the following information as a minimum, or subscribe to an approved accredited certification program. Every approved precast concrete product supplier shall provide two copies of their QA/QC program for DDOT records.

If changes are made to the documented QA/QC plan, the manufacturer shall provide updated documentation that reflects these changes within 15 days from date of implementation. Such documentation shall include, at a minimum, the following information.

1. A detailed plan for record keeping, including:

    a Documentation of incoming materials, including, but not limited to; reinforcing steel, cement, aggregates, chemical admixtures, coatings and supplemental materials and all other material used in the manufacture or production of precast concrete products.

    b. Records of in-process inspections, including pre-pour and post-pour operations, curing times and temperatures and equipment checks.

    c. Production records.

    d. Sampling and testing results.

    e. In-house testing of products with associated documentation and test records.

2. Designation of individual(s) designated to the Quality Control function for the manufacturer, including qualifications and experience.

3. Individuals performing material sampling and testing shall be certified to take samples and perform tests. Minimum certification requirements are as follows:

    a. Concrete sampling and testing, including slump, air-content, temperature and compressive strength cylinders: ACI – Concrete Field Testing Technician Grade 1 or equivalent.

    b. Curing and breaking of compressive strength cylinder: ACI – Concrete Strength Testing Technician.

    c. Performing mix designs of concrete, controlling daily plant operations

d. When a certified weld is required, the manufacturing process welders will be certified in accordance to the requirements as outlined by the AWS (American Welding Society).

4. The Owner's Representative will be allowed access to all production areas of plant operation where and when materials are being manufactured. A minimum 24-hour notice shall be given to the Owner's Representative before the production of any materials for DDOT, and every attempt will be made by both parties to facilitate the DDOT's Quality Assurance inspections of the materials. The Owner's Representative will comply with all plant operational and safety requirements including personal protective equipment. DDOT reserves the right to inspect any and all materials produced for its use, and will reject all material/products manufactured without this inspection, or specific waiver of inspection.

3.0 CURING, HANDLING, STORAGE AND DELIVERY

1. Curing – All precast concrete products shall be cured in a manner to assure highest quality.

   a. If steam curing is utilized, the manufacturer shall provide adequate steam plant, enclosure, piping and other facilities for curing the concrete materials. The enclosure shall be such that the humidity shall be maintained so as to keep the materials moist at all times. The temperature shall be controlled per ACI 517 and records of curing temperatures shall be maintained as part of the daily inspection process. These records shall reflect initial temperature, rate of increase of temperature, maximum temperature attained and rate of cooling. Maximum temperature of the product shall never exceed 150° F as measured in the concrete mass being cured. Materials that exceed this curing temperature, or for which no temperature records are provided, will be rejected and replaced. Steam curing shall begin not sooner than one hour, nor more than 10 hours after completion of product, and shall be guided by determining the time of initial set, per ASTM C 403. Results of initial set tests shall be provided upon request.

      New tests will be run in the event of change of cement supplier, mix design, or as otherwise necessary to maintain a quality product.

b. Forms on wet-cast concrete shall not be removed until the concrete attains compressive strength equal to 2500 pounds-per-square-inch (psi) based upon field-cured cylinders, cured under conditions which equal the most severe conditions to which the product is exposed.

c. Test cylinders for determining "shipping strength" shall be cured with similar methods as the product that they represent. In lieu of actual curing with the product, cylinders may be cured in curing chambers correlated in temperature and humidity with the product conditions.

d. In such a case, the correlation shall be verified by use of recording thermometers in the curing chambers, and comparison with the temperature records of the product curing.

e. Any precast concrete product which freezes before attaining 500 psi compressive strength will be rejected.

2. Handling – It shall be the responsibility of the precast manufacturer to handle all materials in such a manner as to avoid all damage to product before and during delivery. This damage includes, but is not limited to, structural or spiderweb cracking, chips, spalls, pop-outs or other damage. Minor damage may be repairable, with written approval, but any structural damage to precast product will be cause for rejection and replacement.

3. Storage – All precast concrete products shall be stored in a manner that will maintain product quality, as well as provide damage protection from yard traffic.

4. Delivery – No precast concrete product shall be delivered to a jobsite or transported from the facility of origin until adequate quality and maturity has been attained, as described in these specifications.

- All products shall be a minimum age of 7 days.
- All concrete products shall attain at least the specified design strength.
- No product shall be delivered without Certification. Any product delivered without acceptable Certification will be subject to rejection.

4.0 MATERIALS

GENERAL – All materials used will be of good quality and will be subject to both appropriate Quality Control inspection by the manufacturer, and

Quality Assurance inspection by the DDOT or designated representative. Any materials that do not meet DDOT standards will be rejected.

CONCRETE – Concrete shall be of uniform quality and conform to the DDOT Standard Specifications and the mix designs as submitted for review and approval.

1. Concrete shall conform to ASTM C 94.
2. Cement shall be ASTM C 150, Type I/II, Type-II or Type-V.
3. Fly Ash shall be Class-F in accordance with ASTM C 618, Table 1 and 2.
4. Use of other mineral admixtures, such as Granulated Ground Blast Furnace Slag or Silica Fume will be considered with adequate submission of performance history for mix design evaluation. Such materials shall conform to ASTM C 989 for slag, and ASTM C 1240 for silica fume.
5. Water shall be clean and potable, containing less than 500 parts-per-million (ppm)
   chlorides and shall conform to ASTM C 1602.
6. Aggregates shall be per ASTM C 33, including gradation requirements.
7. Admixtures shall be supplied by a single manufacturer, and shall be compatible with each other. The listed classes of admixtures shall be the only acceptable materials used.
   a. Air-entraining admixture, ASTM C 260.
   b. Water-reducing admixture, ASTM C 494, Type A or D
   c. High range water-reducing admixture, ASTM C 494, Type F or G, and shall hold minimum slump of 5-inches for the duration of the concrete placement.

REINFORCEMENT – Reinforcement conforming to the following standards shall be steel bars or welded wire fabric, or a combination of both, unless otherwise noted.

1. Reinforcement shall conform to the minimum requirements of the referenced ASTM standards, Specifications and approved submittals.
2. All positioning chairs shall be made of non-corrosive materials.

EMBEDDED ITEMS - Do not use any embedded items without submittal of appropriate product data sheets for review and approval of the DDOT.

REPAIRS – All materials used for making repairs to products must be submitted and approved prior to execution of any repair.

5.0 EXECUTION

REINFORCEMENT – Reinforcement shall be fabricated from approved materials as noted and approved by the Owner's Representative prior to placement of concrete.

1. Reinforcement shall be held firmly in place during concrete placement.

2. Reinforcement cages shall be fabricated either by tying the bars, wires or welded wire fabric into rigid assemblies or by welding where permissible in accordance with AWS standard.

3. Secure cages in place using non-corroding "chairs" or spacers, such as plastic, or epoxy coated steel.

4. Reinforcement shall have a minimum cover of one-inch, or greater if shown on approved plans.

5. Tolerance on placement shall be 1/2-inch or as described in the specification, whichever is less. Tolerances are secondary to minimum cover requirements.

CONCRETE – After review of reinforcement and formwork by the Owner's Representative, place concrete, with the following general considerations.

1. Deposit concrete as close to its final position as practicable. Where necessary to avoid excessive "dropping" of concrete, use a tremie or other placement device as required.

2. All concrete placed within a form shall be homogeneous in nature. Take care to avoid segregation or separation of concrete.

3. Place all dry cast (zero slump) concrete within 45 minutes of the addition of mixing water to the cement. Placement of dry cast concrete shall be continuous. Any interruption in placement of dry cast material longer than 15 minutes will be cause for rejection.

4. Consolidate concrete in such a manner that segregation and separation do not occur. External "Stinger" type vibrators shall be operated in an appropriate manner, as described in the ICC Concrete Manual. Failure to follow these procedures will be cause for rejection.

Forms that use form vibrators shall have seams sufficiently tight and close to prevent grout bleeds and leaks. Use a sufficient number of vibrators to ensure uniform consolidation throughout the concrete. The vibrators shall have frequencies and amplitudes sufficient to produce well-consolidated concrete.

5. In cases of extreme temperature conditions, care shall be taken in concrete production and handling.

   a. Hot weather concreting: During hot weather proper attention shall be given to ingredients, production methods, handling, placing, protection and curing to prevent excessive concrete temperatures or water evaporation. Follow the recommendations given in ACI 305.

      The temperature of the concrete shall not exceed 90° F. at the time of placement.

      Assure that water content does not vary from mix design criteria.

      Maintain adequate moisture to the fresh concrete to assure proper curing.

   b. Cold weather concreting: During cold weather, proper attention shall be given to ingredients, production methods, handling, placing protection and curing to prevent freezing or other damage to fresh concrete. Follow the recommendations given in ACI 306.

      Provide adequate equipment to heat concrete and protect the uncured concrete during freezing and near freezing temperatures. All concrete materials, forms, fillers and the surrounding ground shall be free of frost.

      Do not use frozen materials or any materials containing ice.

      The temperature of the concrete shall not be below 55° F at the time of placement.

      Any precast concrete product which freezes before attaining 500 psi compressive strength will be rejected.

EMBEDDED ITEMS – Place all embedded items at the locations specified in the design documents and submittal shop drawings. Inserts, plates, lifting devices and other embedded items shall be held rigidly in place so that they do not move significantly during the casting operation.

REPAIRS – It is the intent of DDOT to buy new, undamaged products. Minor damage may be repairable, with written approval of the Owner's Representative, but any significant damage to, or deficiency in, precast products will be cause for rejection and replacement.

It is the responsibility of the manufacturer to develop repair methods and materials, for submittal and review, prior to use. Such submittals must include materials used, preparation methods application methods and curing. Manufacturers can propose such submittals on a case-by-case basis, or as general repair methods suitable to various types of repairable defects. Regardless of the method followed, the manufacturer must:

1. Inform the Owner's Representative of the proposed repair and get authorization to proceed.

2. Provide a minimum 24-hour notice to allow for inspection of the repair process.

2. Allow for inspection of the repair after completion and before product delivery. Any repairs performed without following this process will be rejected.
3.

6.0 MEASUREMENT

Measurement for PRECAST CONCRETE CYCLE TRACK BARRIER CURB shall be the linear foot, complete and in-place. Any excess barrier curb left-over from saw cutting units to length in the field shall not be measured.

7.0 PAYMENT

Payment for PRECAST CONCRETE CYCLE TRACK BARRIER CURB made at the contract unit price per linear foot, complete and in-place, which payment will include all labor, equipment, tools, materials, and incidentals necessary to complete the work as specified herein.

56. REMOVE AND RESET STONE COPING: Item No. 60009-B

DESCRIPTION
The existing stone coping at the southwest corner of 1st Street NE and G Street NE shall be removed and reset as shown in the contract drawings. Damaged coping shall be replaced in-kind.

MEASUREMENT AND PAYMENT
Measurement for Remove and Reset Stone Coping shall be the linear foot, complete and in-place. Payment will be made at the contract unit price per linear foot, including all labor, sawcutting, joints, equipment, tools, materials, and incidentals necessary to complete the work as specified herein.

57. REMOVE AND RESET METAL DUMPSTER SKIDS: Item No. 600011

DESCRIPTION – The metal dumpster skids located at the AMTRAK entrance (STA. 1004+35 RT) shall be removed and reset flush with the finished grade of the proposed driveway entrance, to the satisfaction of the Engineer and operator/owner of haul-off dumpster.

MEASUREMENT – Remove and Reset Metal Dumpster Skids will not be measured.

PAYMENT – Remove and Reset Metal Dumpster Skids will be paid at the contract lump sum price, which will include all labor, equipment, tools, materials, and incidentals necessary to complete the work as specified herein.

58. NON-TEXTURED ASPHALT PAVEMENT COATING APPLICATION FOR CYCLE TRACK: Item 600013-A

PART 1 – GENERAL

1.1 DESCRIPTION

A. Asphalt pavement coatings are suitable for application to most asphalt pavement applications including entranceways, parking lots, bike lanes, bus lanes, residential streets and driveways, sidewalks, plazas, medians, and cross-walks.

B. Asphalt pavement is considered a “flexible” pavement. Therefore, **asphalt pavement coatings** are scientifically formulated and designed specifically for use on asphalt pavement. Because of this flexibility, it is highly likely that paints and/or coatings that are not designed specifically for application to asphalt pavement will eventually fail if applied to asphalt pavement**.**

C. Only use high quality **asphalt pavement coatings** that have the optimal balance of performance properties to provide a durable, long lasting color and texture to asphalt pavement surfaces. Minimum performance properties are outlined in Section 2.1 of this specification some of which are wear and crack resistance, color retention, adhesion, minimal water absorption and increased friction properties.

D. Of particular importance is that the coating VOC meets or exceeds local and EPA requirements.

E. The coating used must have a proven record of success in the application to asphalt pavement.

F. This specification provides the recommended minimum ASTM performance properties for the **asphalt pavement coating**. These results must be backed up by a Certificate of Analysis from an independent laboratory or equal document that certifies these properties.

G. An **asphalt pavement coating** with a proven SRI value ≥ 29 can be used to help LEED projects qualify for LEED points in the Sustainable Sites category of some of the LEED rating systems.

H. Only use a contractor or applicator that has Accreditation or written approval from the coating supplier in the application of this coating.

1.2 REFERENCES

A. ASTM D-4541 Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Tester.

B. ASTM D-4060 Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.

C. ASTM D-2697 Standard Test Method for Volume of Nonvolatile Matter in Clear or Pigmented Coatings.

D. ASTM D522-93A Standard Test Method for Mandrel Bend Test of Attached Organic Coatings.

E. ASTM D1653 Standard test method for water vapor transmission or organic film coatings.

F. ASTM G-154 QUV Accelerated Weathering Environment. Standard Practice for Operating Fluorescent Light Apparatus for UV Exposure of Nonmetallic Materials.

G. ASTM D 2369 Weight Solids Standard test method for Volatile Content of Coatings.

H. ASTM D 1475 Standard Test method for Density of Paint, Varnish, Lacquer, Other related products.

I. ASTM D-2240 (2000) Standard Test Method for Rubber property – Durometer hardness.

J. ASTM D-5895 Standard Test Method of drying or curing during film formation of organic coatings using mechanical recorders.

K. ASTM D-570 Standard Test Method for water absorption of plastics.

1.3 DEFINITIONS

A. "Accredited Applicator" is an applicator who is accredited by the coating supplier to apply the **asphalt pavement coating**.

B. "The Work" is the application of the coating to the surface.

C. "Owner" means the Owner and refers to the representative person who has decision making authority for the Work.

1.4 REQUIRED BID SUBMITTAL DOCUMENTS

The following documents are required at bid submission:

A. A copy of the current year accreditation certificate available from the **Accredited Applicator** or written verification from the coating supplier that the contractor is qualified to perform this Work.

B. Written and published specification for the application of the selected **asphalt pavement coating.**

C. Confirmation of coating color(s).

D. Proof of coating performance through a Certificate of Analysis or equal document as provided by the **Accredited Applicator** or the coating supplier. Performance properties of the coating must meet or exceed the Properties as outlined in Table 1 of Section 2.1 of this specification.

E. Provide at least 5 reference sites that have been in use for 2 years or more where the coating proposed has been applied in a similar intended use as the Work contemplated here.

PART 2 – PRODUCTS

2.1 MATERIALS – COATING PERFORMANCE PROPERTIES

The following table outlines minimum performance properties required of the asphalt pavement coating. These properties are to be backed up by Certificates of Analysis produced by an independent qualified testing facility.

TABLE 1: TYPICAL MINIMUM PERFORMANCE PROPERTIES OF COATING

Characteris	Test	
Dry time (To re-coat)	ASTM D-5895 23℃; 37% RH	**< 40 min**
Taber Wear Abrasion Dry	ASTM D-4060 7 days cure	**< 1.0 g/1000 cycles**
Taber Wear Abrasion Wet	ASTM D-4060 7 days cure	**< 5.0 g/1000 cycles**
QUV E Accel. Weathering	ASTM G-155 2,000 hours (CIE units)	**∆E < 1.0 (brick color)**

Hydrophobicity	ASTM D-570	**< 10.0 % (9 days immersion)**	
Shore	ASTM D-2240	**63 Type D**	
Mandrel	ASTM D522-93A	**1/4" @ 21°C**	
Permeance	ASTM D1653	**3.45 g/m²/hr (52**	
VOC	EPA-24 ASTM D3960-	**< 25 g/l**	
Adhesion to Asphalt	ASTM D-4541	**Substrate Failure**	
Friction Wet	ASTM E-303 British Pendulum Tester	**WP***	**6**
		WP*	**5**
		AC**	**7**
		AC**	**6**

*WP – test conducted on asphalt in wheel path
**AC – test conducted on asphalt adjacent to curb.

2.2 EQUIPMENT
The Accredited Applicator is required to use the proper equipment in the application of the asphalt pavement coating as per the recommendation of the coating supplier.

PART 3 – EXECUTION
3.1 GENERAL
There are a number of factors that will affect the quality of the application of the **asphalt pavement coating**. These are as follows:

3.2 PRE-CONDITIONS
3.2.1 Pavement
Asphalt pavement must be stable, well compacted and generally in excellent condition for the application of the **asphalt pavement coating** to be successful. The Owner shall make the final determination as to the suitability of the existing asphalt pavement.

3.2.2 Asphalt Pavement Marking Removal
Pavement markings may be removed by sandblasting, water-blasting, grinding, or other approved mechanical methods. The removal methods should, to the fullest extent possible, cause no significant damage to the pavement surface.

The Owner shall determine if the removal of the markings is satisfactory for the application of the **asphalt pavement coating**. Work shall not proceed until this approval is granted.

3.3 APPLICATION OF ASPHALT PAVEMENT COATING

3.3.1 Surface Preparation

The asphalt pavement surface shall be dry and free from all foreign matter, including but not limited to dirt, dust, de-icing materials, and chemical residue.

3.3.2 Application of coating

A. Only employ an **Accredited Applicator** to complete the Work. Should the Owner choose a contractor who has not been properly accredited to perform this Work, the contractor must receive the proper training from the coating supplier.

B. **Asphalt pavement coating** shall only be applied in accordance with the supplier's instructions paying special attention to number of recommended passes, recommended coating coverage and achieved dry film thickness.

C. Only apply the **asphalt pavement coating** in the correct environmental conditions as instructed by the coating supplier.

D. The Owner may request the **Accredited Applicator** to provide proof that the coating was applied in accordance with the coating supplier's recommendations.

3.4 OPENING TO TRAFFIC

Refer to the instructions provided by the coating supplier for when the Work is ready to be open to traffic. Wait time is typically a function of dry rate of the coating and climate conditions.

PART 4 – WARRANTY

The non textured asphalt pavement coating shall have a three (3) year warranty from the end of the contract. The warranty will include all materials, equipment, and/or to repair or replace defective areas.

PART 5 – MEASUREMENT AND PAYMENT

5.1 MEASUREMENT

The measured area is the actual area of asphalt pavement that has received the **asphalt pavement coating,** measured in place. No deduction will be made for the area(s) occupied by manholes, inlets, drainage structures, bollards or by any public utility appurtenances within the area. The unit of measure will be the square foot.

If requested by the Owner, the applicator is to provide proof that the correct amount of coating is applied in accordance with the coating supplier's specification.

5.2 PAYMENT

Payment for NON-TEXTURED ASPHALT PAVEMENT COATING APPLICATION FOR CYCLE TRACK will be made at the contract unit price per square foot, which payment will include furnishing and placing all materials and all tools, equipment and incidentals needed to complete the work specified herein.

59. GEOTEXTILE WOVEN CLASS ST; Item 600014

A. GENERAL

Work consists of placing geotextile fabric on top of the approved subgrade and within underdrain trenches prior to placement of aggregate, as indicated on the contract drawings or as directed by the Engineer. Work does not include placing geotextile fabric in undercut areas. For this work, refer to GEOSYNTHETIC STABILIZED SUBGRADE USING GRADED AGGREGATE BASE, Item 213002

B. MATERIALS

Geotextile for separation of the permeable base and subgrade shall conform to Class ST of Section 822.09 of the Standard Specifications.

Geotextile for wrapping underdrain shall conform to Class PE Type 1 of Section 822.09 of the Standard Specifications.

C. CONSTRUCTION REQUIREMENTS

INSTALLATION

Place on bottom and sides of soil subgrade. Secure in place to prevent wrinkling from vehicle tires and tracks.

Adjacent geotextiles rolls shall be overlapped, sewn or joined as required below:

Subgrade CBR	Minimum Overlap
Greater than 3	300-450 mm (12 – 18 in)
1 - 3	600-1000 mm (24 – 36 in)

When sewn seams are required, the seam strength, as measured by ASTM D4632 shall be equal to or greater than 90 percent of the specified grab strength.

On curves, the geotextile may be folded or cut to conform to the curves. The fold or overlap shall be in the direction of construction and held in place by pins, staples, or piles of fill or rock.

Prior to covering, the geotextile shall be inspected by a certified inspector of the Engineer to ensure that it has not been damaged during installation. Damaged areas, as identified by the Engineer, shall be repaired immediately by covering the damaged area with a geotextile patch that extends an amount equal to the required overlap beyond the damaged area.

The subbase shall be placed by end dumping onto the geotextile, or over previously placed subbase aggregate such that at least the minimum specified lift thickness shall be between the construction equipment tires or tracks and the geotextile at all times.

Pretensioning Geotextile:
Proof roll with heavily loaded, rubber-tired vehicle. Wheel load of truck shall be equivalent to maximum expected for site. Vehicle to make at least four passes over first lift in each area of site.

Once design aggregate has been placed, use roadway prior to paving to prestress geotextile-aggregate system in key areas.

Staple or pin geotextile at overlaps to maintain position during construction activities. Use 250 to 300 mm (10 to 12 in) long nails placed at minimum 15 m (50 ft) on center for parallel rolls and 1.5 m (5 ft) on center for roll ends.

Do not place overlaps along anticipated primary wheel path locations. Place overlaps at end of rolls in direction of aggregate placement with previous roll on top.

When geotextile intersects an existing pavement area, extend geotextile to edge of old system. For widening or intersecting existing roads where geotextiles have been used, anchor geotextile at roadway edge.

Compact first lift of base aggregate with a tracking dozer and then compact with smooth-drum vibratory roller to obtain minimum compacted density.

Compaction of permeable bases shall meet requirements of Section 214 of the Standard Specifications. Perform construction parallel to road alignment. Fill ruts formed during construction to maintain adequate cover over geotextile. Do not blade ruts down.

PROTECTION
Atmospheric exposure of the geotextile to the elements following laydown shall be limited to 14 days to prevent damage.

Equipment may operate on roadway without aggregate for geotextile installation under permeable bases if subgrade is of sufficient strength.

For extremely soft soils, use lightweight construction vehicles for access on first lift.
Limit construction vehicles in size and weight to limit rutting in initial lift to 75 mm (3 in).

If rut depths exceed 75 mm (3 in), decrease construction vehicle size or weight or increase lift thickness.

Turning not permitted on first lift of base aggregate. Construct turnouts at roadway edge to facilitate construction.

D. MEASUREMENT
Measurement for GEOTEXTILE WOVEN CLASS ST used for separation of permeable base and subgrade shall be the square yard, complete and in-place. Overlapping material at seams and joints shall not be measured.

Measurement for GEOTEXTILE NON-WOVEN CLASS PE TYPE 1 for wrapping underdrain shall be the square yard, complete and in-place. Overlapping material at seams and joints shall not be measured.

E. PAYMENT
Payment for GEOTEXTILE WOVEN CLASS ST used for separation of permeable base and subgrade will be made at the contract unit price per square yard, which payment will include all labor, equipment, tools, materials, and incidentals necessary to complete the work as specified herein. Overlapping material at seams and joints shall not be paid.

Payment for GEOTEXTILE NON-WOVEN CLASS PE TYPE 1 for wrapping underdrain will be made at the contract unit price per square yard, which payment will include all labor, equipment, tools, materials, and incidentals necessary to complete the work as specified herein. Overlapping material at seams and joints shall not be paid.

60. PCC WHEELCHAIR/BICYCLE RAMP: Item No. 609202

This S.P. modifies 609.

Add the following paragraph after 609.04 (E) (2)

609.04 (E) (3) DETECTABLE WARNING SURFACE

1. **DESCRIPTION.** This work shall consist of furnishing and installing detectable warning pavers in construction of new wheelchair ramps in accordance with the details shown on the plans and/or as directed by the Engineer.

2. **DETECTABLE WARNING PAVERS/TRUNCATED DOMES.** Detectable warning pavers/truncated domes for a width of 24" for the entire width of the ramp as indicated on plans shall be installed on all wheelchair ramps.

   General – Detectable warning pavers shall consist of a surface of truncated domes aligned in a square grid pattern.

   Dome Size- Truncated domes in a detectable warning surface shall have a base diameter of 0.9 inches minimum to 1.4 inches maximum, a top diameter of 50% of the base diameter minimum to 65% of the base diameter maximum, and a height of 0.2 inches.

   Dome Spacing – Truncated domes in a detectable warning surface shall have a center-to-center spacing of 1.6 inches minimum and 2.35 inches maximum, and a base-to-base spacing of 0.65 inches minimum, measured between the most adjacent domes on square grid.

   Contrast – Detectable warning surfaces shall contrast visually with adjacent walking surfaces either light-on-dark, or dark-on-light.

   Size – Detectable warning surfaces shall extend 24 inches minimum in the direction of travel and the full width of the wheelchair ramp, landing, or blended transition.

   Sidewalk Ramps and Blended Transitions – The detectable warning surface shall be located so that the edge nearest the curb line is 6 inches minimum and 8 inches maximum from the curb line.

3. **MATERIALS.** Pavers will meet Americans with Disabilities Act (ADA) requirements for detectable warning pavers (truncated domes) either ASTM C 902 Pedestrian and Light Traffic Paving Block, Class SX, Type 1; or ASTM C 936 Solid Concrete Interlocking Paving Units; or ASTM C 1272 Heavy Vehicular Paving Brick, Type R.

   Acceptable manufacturers and products for detectable warnings and truncated domes pavers are:

Manufacturers	**Products**
Whitacre-Greer Fireproofing Company, 1400 S Mahoning Ave., Alliance, OH, 44601	ADA Paver, 4" x 8" x 2¼" Clear Red (Rustic) # 30
Hanover Architectural Products 240 Bender Rd., Hanover, PA 17331	Detectable Warning Paver, 11¾" x 11¾" x 2" Red or Quarry Red
Endicott Clay Products, PO Box 17, Fairbury, NE, 68352	Handicap Detectable Warning Paver, Nominal 4"x 8"x 2¼" Red Blend or approved equivalent

   Pavers will be laid on top of a 4" unreinforced concrete base. Setting bed and joints to be mortared in accordance with manufacturer's instructions or with a maximum ½" thick setting bed of latex modified cement mortar. Mortar joints to a width not greater than 5/32" and not less than 1/16". Pavers shall not be directly touching each other unless they have spacing bars.

   Joints are to be flush with top surface and struck so as to give a smooth surface. Pavers shall be laid such that joints are level with adjoining joints so as to provide a smooth transition from brick to concrete surface. The top surface of any two adjacent units should not differ by more than 1/8" in height for mortared brick paving. Pavers that do not conform to the smoothness requirement shall be removed and replaced at the expense of the Contractor as determined by the CO.

   Stamping or imprinting systems when used must be capable of uniformly providing the specified texture and pattern, and provide the minimum dry static coefficient of friction, as defined by ASTM C-1028, shall be 0.80.

4. **CONSTRUCTION.** The Contractor shall submit literature describing the following to the CO at least 30 days prior to the proposed installation:

   - The detectable warning paving material
   - All associated materials
   - Preparation requirements

- In addition, a minimum 12” x 12” sample of the detectable warning material shall be submitted.

The manufacturer shall demonstrate in writing and by providing references that the detectable warning paving materials have been satisfactorily used for roadway, path or flooring applications, in high pedestrian use and under weather conditions similar to those experienced in the District.

In no case shall the Contractor permit the application of any materials by untrained personnel or non-approved installers. The material manufacturer’s certification of compliance with this requirement shall be provided to the CO.

Prior to the start of work, the Contractor shall show evidence of successful completion of similar installations and provide a job site sample for the approval of the CO. The sample size shall be 4’ x 2’, minimum, and constructed at a location selected by the CO.

As many test panels will be constructed as are necessary to achieve a sample panel that meets the satisfaction of the CO. All work shall conform to the appearance of the approved sample to the satisfaction of the CO. The sample shall not be incorporated into the work and will be removed when ordered by the CO.

Follow all applicable manufacturers’ requirements for environmental conditions, surface preparation, installation procedures, curing procedures and materials compatibility. The Contractor is responsible for removing any material spatters from areas. The Contractor shall repair any damage that should arise from the installation or the clean-up effort.

Unless otherwise specified, the color of the detectable warning surface shall be yellow and shall be an approximate visual match to Munsell Book Notation 10YR 8/14. The color shall be uniform over the entire surface, and homogenous throughout the thickness of the material.

If a color other than yellow is specified in the Contract documents, the coloring material shall be an approximate visual match to the specified colors. The color shall be uniform over the entire surface and homogenous throughout the thickness of the material.

There shall be a minimum of 70% contrast in light reflectance between the detectable warning and adjoining surface. The detectable warning can optionally be “safety yellow”. The material used to provide visual contrast shall be an integral part of the detectable warning surface. Both the domes and the underlying surface must meet the contrast requirement.
The contrast in percent shall be determined by:

Contrast = [(B1 – B2) / B1] x 100

where B1= light reflectance value (LRV) of the lighter area and B2= light reflectance value (LRV) of the darker area. Note that in any application both white and black are never absolute; thus, B1 never equals 100 and B2 is always greater than 0.

When visual contrast other than “safety yellow” is used, provide verification of contrast.

Add the following to 609.04 (E)

(4) Ramps shall be provided with detectable warning surface pavers, an ADA requirement.

Delete 609.04(F) and 609.04(G) and replace with the following:

(F) MEASURE.
Unit of measure for PCC WHEELCHAIR/BICYCLE RAMPS will be each.

(G) PAYMENT.
Payment for PCC WHEELCHAIR/BICYCLE RAMPS will be made at the contract unit price per each, which payment will include furnishing and placing all materials and all tools, equipment and incidentals including Detectable Warning Pavers needed to complete the work specified herein.

61. TREE PROTECTION; Item No. 611999, 611005, 611051

Refer to the following Standard Specifications for tree protection requirements:

Tree protection (611)
Trenching and Boring (207, 611)
Pruning (611)

Pruning of trees shall be in accordance with industry standards (International Society of Arboriculture and Pruning ANSI A300, Part 1-2008) and performed by an ISA Certified Arborist or Tree Care Company.

Ward 6 Arborists phone numbers:

Steve McKinley-Ward – 202-527-5741
Simoun Banua – 202-557-4590

62. MAINTENANCE OF HIGHWAY TRAFFIC

MEASURE - The unit of measure will be that as required for the following pay items which will constitute the payment for the MAINTENANCE OF HIGHWAY TRAFFIC. The total for any item given below shall be the maximum number of that item required and furnished for any one phase of construction. The estimated quantities will be as listed in the PAY ITEM SCHEDULE.

Item No.	Unit	Description
407002	TON	TEMPORARY AC, SUPERPAVE SURFACE COURSE, 12.5 mm
616004	LS	CONSTRUCTION LANE CLOSING
616006	SF	REMOVE LANE MARKINGS
616008	EA	TEMPORARY CONSTRUCTION SIGN SUPPORTS
616012	EA	CONSTRUCTION WARNING AND DETOUR SIGNS
616024	EA	TYPE III PVC BARRICADE
616028	EA	TRAFFIC DRUMS
616060	LF	PAINTED LANE MARKING 4 INCH
616062	LF	PAINTED LANE MARKING 6 INCH
616994-B	LF	PAINTED LANE MARKING 12 INCH
616994-C	LF	PAINTED LANE MARKING 24 INCH
616994-D	LF	TRAFFIC CONTROL SPECIAL ITEM - WATER-FILLED TEMPORARY TRAFFIC BARRIER
616994-E	LF	TRAFFIC CONTROL SPECIAL ITEM - MOVE WATER-FILLED TEMPORARY TRAFFIC BARRIER

PAYMENT for pay items listed above will be made as specified in the Standard Specifications, as modified elsewhere in these Special Provisions and as follows:

No separate measure or additional payment will be made for preparing temporary control plans. No additional payment or measurement will be made for relocating and installing temporary signs and supports for following phase as shown on the traffic control plans.

63. CONSTRUCTION LANE CLOSING: Item 616 004

GENERAL - Work consists of providing the necessary personnel, materials and equipment to execute the provisions of highway traffic maintenance as detailed in the approved Traffic Control Plan (TCP), and as directed in this S.P.

MEASURE - The unit of measure will be the job. No direct measure will be taken.

PAYMENT - Payment for CONSTRUCTION LANE CLOSING will be made at the contract lump sum price, which payment will include providing all materials, equipment and personnel necessary to efficiently and safely execute the approved Traffic Control Plans and comply with the requirements of this S.P., provide a Traffic Safety Officer and maintain the roadway surface for thru traffic.

64. REMOVE LANE MARKING: Item 616 006

Supplements 616 as follows:

All grinding marks on PCC Pavement shall be painted with a mixture of Concrete Slurry and Epoxy (Mix ratio to be determined by the Engineer). Work includes removal of the existing raised Reflective Pavement Markers. Any damage done to the pavement shall be repaired, as required by the Engineer, at the Contractor's expense.

65. THERMOPLASTIC PAVEMENT MARKING, 4 INCH: Item 616 040
THERMOPLASTIC PAVEMENT MARKING, 6 INCH: Item 616 044
THERMOPLASTIC PAVEMENT MARKING, 12 INCH: Item 616 050
THERMOPLASTIC PAVEMENT MARKING, 24 INCH: Item 616 994-A
THERMOPLASTIC PAVEMENT ARROW : Item 616 054
THERMOPLASTIC PAVEMENT SYMBOL : Item 616 992

This S.P. supplements 616.12

(A) GENERAL - Work under these items consists of furnishing all materials for, and installation of, permanent thermoplastic lane markings for the project. Permanent markings shall be placed within 24 hours after placement of final surface, if roadway is opened to traffic.

(B) CONSTRUCTION METHODS -The newly applied markings shall be protected from intrusion by traffic by means of traffic cones, safety barrels or other approved means until such time as the material has dried sufficiently to bear traffic.

(C) MEASUREMENT AND PAYMENT – Measurement and payment under section 616.12 shall be extended to include the following items:

- Item 616994-A, Thermoplastic Pavement Marking, 24 Inch, LF
- Item 616992, Thermoplastic Pavement Symbol, EA

66. PAINTED LANE MARKINGS, 12-INCH: Item No. 616994-B
PAINTED LANE MARKINGS, 24-INCH: Item No. 616994-C

(A) MEASUREMENT AND PAYMENT – Measurement and payment under section 616.13 shall be extended to include the following items:

- Item 616994-B, Painted Lane Markings, 12 Inch, LF
- Item 616994-C, Painted Lane Markings, 24 Inch, LF

67. WATER FILLED TEMPORARY BARRIER: Item No. 616994-D
MOVE WATER FILLED TEMPORARY BARRIER: Item No. 616994-E

(A) DESCRIPTION

Work consists of furnishing, installing, maintaining temporary Plastic Jersey Barriers, including replacing any broken sections, maintaining proper alignment and relocating Plastic Jersey Barriers as required during the duration of the project, according to approved maintenance of traffic and traffic control plans.

The Water Filled Barrier is made of durable and light weight Polyethylene plastic that prevents cracking and breaking. The lighter design makes these barriers very portable and a great option for temporary worksites and special events. Molded through forklift holes eliminates bowing when filled with water. Double wall knuckle design prevents breakage at hinge points. Hinge design allows for a 30-degree pivot between sections. 8" Fill hole speeds filling process, includes twist-lock plastic cap. Large tamper proof plastic threaded water release drain and plug at bottom corner. Includes one steel-connecting pin that allows sections to be locked together.

The Water Filled Plastic Jersey Barriers shall be either 42 inches in height and 24 inches in width, and 72 inches long or 32 inches in height and 18 inches in width, and 72 inches long. Typical section lengths shall be 6 feet but may be varied to insure portability and proper installation (5 feet, 5.5 feet, and 8 feet).

Each barrier is molded to a thickness of 1/3 inch to ensure they do not burst upon filling. They will not crack or break under normal use and are built to withstand the elements over long periods of time. They also have large drains to prevent water from backing up behind the barriers.

WATER-FILLED TRITON BARRIER TL-2
The Water Filled Plastic Jersey Barriers (WATER-FILLED TRITON BARRIER) shall have meet the acceptance criteria for an NCHRP Report 350 TL-2 crash cushion, " Recommended Procedures for the safety performance Evaluation of Highway Features" making them effective in containing vehicle failure up to 43 MPH for longitudinal re-directive barrier. Easily upgradeable to NCHRP 350 TL-3.

(B) MATERIALS

Polyethylene
Galvanized steel framework
Polyester cord
Barrier Delineators - 822.13(B)

(C) APPLICATION

The Water Filled Plastic Jersey Barriers shall be used in accordance with Section 6F.70 Temporary Traffic Barriers as Channelizing Devices and Section 6F.85 Temporary Traffic Barriers Part 6 of the MUTCD-2009 Edition

(D) MEASURE AND PAYMENT

The unit of measure for Water Filled Plastic Jersey Barrier will be the linear foot. The length for measurement will be actual maximum length along the top centerline complete in place. If installation of plastic barriers delineators is specified, they will not be measured for payment.

Install Water Filled Plastic Jersey Barrier - Payment for the delivery and the initial installation of the plastic Barriers in the work zone for the first phase of construction and removal from the construction site upon completion of the work will be made at the contract unit price per linear foot, which payment shall include all labor , materials, tools, equipment and incidentals necessary to complete the work. Barrier stored at the project site prior to the construction start shall not be measured under item for Move Water Filled Plastic Jersey Barrier.

Move Water Filled Plastic Jersey Barrier - Payment for Move Water Filled Plastic Jersey Barrier shall be made at the contract unit price per linear foot of barrier moved for each phase of construction as specified in the approved maintenance of traffic or traffic control plan or directed by Chief Engineer. Payment shall include all labor, material, tools, equipment and incidentals necessary to complete the work.

68. TRAFFIC SIGN PANELS: Item 617 164, 620 014

This S.P. modifies and supplements 620.02.

Modifying 620.02(B), Reflective sheeting for Traffic Sign Panels shall meet requirements of AASHTO M 268, Type III High Intensity.

69. DELINEATORS: Item 620 020

GENERAL
Delineators shall be flexible type posts with anchoring systems as detailed below. The posts shall meet all requirements herein and shall be capable of retaining reflective sheeting as specified.

PREQUALIFICATION AND CERTIFICATION

All manufacturers furnishing Flexible Delineator Posts to meet this specification shall have their post
tested by the National Transportation Product Evaluation Program (NTPEP). Requirements for sample submission can be obtained from NTPEP, AASHTO 444 N. Capital St., Suite 249, Washington, DC 20001, telephone (202) 624-3695. An Approved Suppliers listing will be made up from NTPEP test results according to Approval Policy 49. Manufacturers must be on the Department's Approved Suppliers list prior to furnishing posts for Department use.

For each purchase order or file number, an officer of the flexible delineator posts manufacturing company shall certify that the post complies fully with all requirements of this specification.

MATERIALS

The posts shall be made of a durable material which shall be resistant to impact, ultraviolet light, ozone, common hydrocarbon solvents, motor fuels and lubricants, and herbicide formulations. It shall be self-erecting after a vehicle impact. The posts shall be free of surface porosity and other defects that could affect appearance and Serviceability. The top of tubular post shall be capped to prevent the inclusion of water.

The post shall be available in the standard colors of white, yellow, orange and other special colors as specified. The width of the posts shall be such that it will accommodate a minimum of 3 inch wide reflective sheeting on one or both sides Without overhanging the edges. The sheeting will be of the type and color specified in the bid and must meet the DDOT Specifications.

The posts shall be available in different lengths. The lengths will be specified in the bid.

POST TYPES

Flexible Delineator Posts shall be either a surface mounted type, or a driven or imbedded type. The type will be as specified.

The surface mounted type post shall be a two piece system where the post fits into a surface mounted anchor with a locking mechanism. The anchor shall be secured with a bituminous or epoxy adhesive recommended by the post manufacturer.

The driven or imbedded type posts may be one of the following four anchor types:

1) This anchor shall be chisel pointed, driveable, reusable metal anchor into which the post is
inserted and held in place by a locking mechanism.

2) This anchor shall be of metal and be designed for embedment in either Portland Cement or Bituminous Concrete. The anchor shall be secured in the concrete with a bituminous or epoxy adhesive recommended by the post manufacturer. The post shall fit into the anchor and be held secure by a locking mechanism.

3) This anchor shall be a U-Section steel post to which the post is securely attached. The post and anchor shall be driven by mechanical means.

4) Direct driven post without an anchor.

All metal anchors shall be fabricated from galvanized steel, suitably corrosion resistant and provide a stable anchor that cannot be dislodged when the post is subjected to multiple vehicular impacts.

70. STREET LIGHTING

This S.P. revises and supplements 618.

SCOPE: STREET LIGHTING

1. Furnish and install conduits, manholes, streetlight pole foundations, pendant posts, Twin-20 posts, luminaires, conversion kits, globes, photo controls, feeder cables, cables in poles, and all necessary electrical splices within the project limits.

2. Removal of the existing street lighting system including luminaires, photo controls, poles, transformer bases, cables, foundations, manholes, and abandonment of conduit as directed by the Engineer. **The Contractor shall maintain the level of streetlight illumination within the project limits by the use of the existing and proposed lighting poles.** There will be no direct payment to the Contractor for maintaining the lighting during construction.

3. Removal of all signs on the existing street light poles, storage and permanent reinstallation of the signs on the new street light poles or new u-post as indicated on the plans.

4. During this contract all the streetlight service conduits will be replaced with new conduits. The existing street light feeder cables will be removed from the conduits.

5. Other essentials necessary for the satisfactory installation of the roadway lighting system shown on the plans, whether specifically mentioned or not.

The Potomac Electric Power Company currently supplied power to the existing streetlight system from its manholes. PEPCO will supply the power to the permanent roadway lighting system. The Contractor shall install the new feeder cables into PEPCO's facilities, under PEPCO's supervision and inspection.

The contractor shall cut when required the existing D.C. cables for new connections in PEPCO owned manholes. PEPCO owns the service tap onto their electrical system. D.C. owns the cable after the service tap to the street light(s).

All new service taps onto PEPCO's electrical distribution system will be performed by PEPCO Forces.

REQUIREMENTS:

(A) GENERAL

All work performed under this contract shall conform to the National Electrical Code (NEC), District of Columbia Electrical Code, District of Columbia Standard Specifications for Highways and Structures (blue book 2009) Section 618 for street lighting and District of Columbia Streetlight Policy and Design Guideline (March 2005).

The electrical Contractor must be licensed and bonded in the District of Columbia. Before any electrical work is performed he/she must apply for an electrical permit to perform electrical work in public space. An electrical permit may be obtained by contacting Public Space Permit Office located on the 2nd floor, 1100 4th Street, S.W., Washington, DC 20024. This application must be signed by a Master Electrician or Electrical Engineer licensed in the District of Columbia.

The Contractor's employees installing the electrical work must be licensed in the District of Columbia as a Master Electrician, Electrician or Apprentice Electrician. When Apprentice Electricians are working, a Master Electrician or a Journeyman Electrician must be on the project site for personnel supervision. All electrical work shall be supervised by a Master or Journeyman Electrician.

The Contractor shall have a copy of the drawings, Electrical Permit and all approved Catalog Cuts on the job at all times when electrical work is being performed.

All electrical work must be inspected by the electrical inspectors of the District Department of Transportation. Forty-Eight (48) hour advance notice is required for inspection.

Violation of any electrical codes, the Special Provisions, Standard Specifications for Highways and Structures (2009) or any other requirements will cause the work to be **STOPPED IMMEDIATELY.**

The Contractor is also put on notice that the long lead times required to obtain the streetlight posts from the manufacturers, that the Contractor shall not be given additional time for completion of the project.

The Potomac Electric Power Company (PEPCO) will furnish power for the street lighting systems. All work involved with in PEPCO's facilities shall be performed in conformance with requirements that PEPCO has set up for Contractor working in their manholes. The Contractor shall install the new feeder cables into PEPCO's facilities, under PEPCO's supervision and inspection.

It shall be the Contractor's responsibility to notify and coordinate with PEPCO throughout the construction of the project in connection with all PEPCO services and facilities in the construction area, such that removal and restoration of services can be done in a timely and orderly manner at all times. Construction delays as a result of inadequate coordination shall be the Contractor's responsibility.

It should be noted that the D.C. electrical system is unfused, unprotected with no disconnecting means other than cutting the cable from the feed source.

The Contractor shall be expected to perform electrical work on D.C. cables with the knowledge that the circuits are energized.

The Contractor is here by notified that there could be remote relays located within the project limits, if one is found the Contractor shall notify the IPMA, Team 3, Mr. Antonio Byrd 202- 359-2678, antonio.byrd@dc.gov.

The Contractor is hereby put on notice that he will be responsible for maintaining the streetlights within the limits of the project from the Notice to Proceed until final acceptance by the District. This shall include all streetlight outages and pole knockdowns. All streetlight outages shall be repaired within 24 hours of being notified by the Project Engineer.

Material removed from service, as part of this project shall be returned to the District of Columbia, Department of Transportation Warehouse, located at 1735 15th Street, N.E., Washington, D.C. as directed by the Project Engineer. All poles and/or parts returned to the District shall be disassembled and stacked/shelved at the warehouse under DC-DOT warehouse personals direction and supervision. All HPS cut-off type luminaires shall be tested, proved functional, in good reusable condition, then they will be wrapped in bubble wrap, boxed, sealed, the boxes marked with the date, size, and voltage and shelved at the warehouse under DC-DOT warehouse personals direction and supervision. All

other material not returned to the District shall become the Contractor's property and be disposed of at no additional cost to the District.

The Contractor upon completion of the project shall submit a complete set of as-built drawings of the streetlight portion of the project to the Department of Transportation, IPMA, Team 3.

The as-built drawings shall include Maryland Grid indication to show pole and manhole locations. Each manhole or pole shall be assigned with a Grid Number, which is consistent with the DC Street Lighting Numbering System. The set of drawings shall bear the signature of an officer of the Contractor's organization, certifying compliance with as-built conditions.

The contractor shall coordinate the installation and removal of streetlights with the IPMA, Team 3, Mr. Antonio Byrd 202- 359-2678, antonio.byrd@dc.gov, and must submit a schedule for the removal and installation of street light poles for approval prior to the commencement of this project. The approval of this schedule will have a direct bearing on the notice to proceed for the contract. The schedule must include where an existing street light pole is to be replaced in the same location.

The contractor shall coordinate with Mr. Antonio Byrd 202- 359-2678, antonio.byrd@dc.gov for inspections of conduit duct banks, foundations, cable installation, ground rod testing, and etc.

The above schedule must reflect the dates for each streetlight replaced under this contract. The following information must be supplied by the Contractor before commencement of work:

1. Removal date of each street light pole and fixture (putting it out of service)
2. The date of the complete operational installation of the street light pole and fixture
3. The time between the removal date and complete operational installation must not exceed 8 calendar days for any underground fed light.
4. Where more than one light is to be replaced in a given block, the contractor shall remove no more than every other light, and at no time shall two adjacent lights be removed simultaneously.

The contractor shall inspect and photograph all existing light pole foundations (L-37-16 to L63-16) that are scheduled to be re-used and made available to DDOT for review and comment on the current conditions of conduits, grounding, anchor bolts and overall concrete base/cap detail.

(B) PEPCO SERVICE

The Contractor shall coordinate with PEPCO for the following:

1. Payment to PEPCO for manhole entry before any entry into their manholes.
2. Payment to PEPCO for any PEPCO forces work (SLF – Work Orders)
3. To have each "PEPCO MANHOLE" inspected by PEPCO forces and the Electrical Contractor on this contract for safety, clearing of the cables racked on the walls, spotting of the wall for new conduit penetrations and the knowledge of the location of each feed manhole for the street lights.
4. Calling PEPCO when it is necessary for PEPCO Forces to make the taps onto their Electrical System to energize the street lighting and signal systems
5. Calling PEPCO for the final inspection of their manholes after all electrical work is complete in the PEPCO manholes as called for in this contract.

All work performed within PEPCO facilities shall be performed in conformance with all PEPCO requirements. The Contractor shall initiate communication with PEPCO as early as possible after execution of this contract for the purpose of establishing scheduling guidelines and to exchange telephone numbers between the principal points of contract. The power company representative is:

Mr. Stephen J. Park
Senior Supervising Engineer
Potomac Electric Power Company
3400 Benning Road, N.E.
Washington, D.C. 20019
Telephone: (202) 388-2573

(C) MATERIAL AND WORK PROCEDURES

Unless otherwise noted in the plans and this special provision, the Contractor shall be responsible for furnishing all proposed materials associated with the electrical work.

The Contractor shall be responsible for submitting to the Infrastructure Project Management Administration (IPMA) catalog cuts and/or samples of all materials to be furnished for street lighting work. Procurement of all such materials by the Contractor may not begin until written approval is obtained from the (IPMA).

1. PAVEMENT RESTORATION

As directed by the Engineer for temporary pavement restoration, the trench shall be backfilled to the bottom of the existing pavement surface.

The Contractor shall apply a temporary patch over the backfill until such time as final restoration can be completed.

2. CONCRETE ENCASEMENT

Delete the second sentence of the first paragraph of 618.12(A) and insert:

The conduit shall be encased in PCC wet mix. PCC mix design for encased conduits shall conform 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 conduit shall be encased to provide a 4 inch minimum cover all around the conduit.

The following supplements 618.12

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 the sand encasement to the appropriate level.

3. CONDUITS

PVC

Conduits shall conform to the requirements of this Special Provisions, streetlight electrical specification and DDOT Standard Specifications for Highways and Structures (2009). Two (2) sizes of conduits will be used in this project. Four-inch conduit shall be installed between manholes. Two-inch conduit is for the connection from the manhole to each streetlight pole. All conduits shall be rigid, gray Polyvinyl Chloride (PVC) Schedule 40 conforming to the requirements of NEMA TC-2 and WC-1094. Conduits and fittings shall bear Underwriter's Laboratories, Inc. label. Conduit shall be 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. Solvent cement used for joining PVC conduit shall conform to the requirements of ASTM D2564.

All bends shall be of long sweep, free of kinks and of such easy curvature as to permit cable pulling without undue tension on conductors or damage to insulation.

Conduit runs as shown on the plans may be changed to avoid underground obstructions only with written approval by the Engineer.

Unless otherwise shown, conduits shall be placed a minimum depth of 36 inches below final grade, or at greater depths if required to obtain the

necessary utility clearance, and shall slope at a minimum rate of 3 inches per 100 feet of length to a foundation, or manhole.

All conduit fittings shall be free from burrs and rough places and all conduit runs shall be cleaned and swabbed before cables are installed. Cut conduits shall be reamed before fittings and cables are installed.

Standard manufactured elbows, bushings, reducers, bends couplings, etc. of the same materials as the straight conduit pipe shall be used, as required throughout the conduit system. Bends shall meet all the requirements of NEC Article 352-24.

There will be instances throughout this project where the Contractor will be required to build conduit to intercept existing PEPCO manholes. In such instances, the Contractor shall be required to coordinate penetration of existing manholes with the Potomac Electric Power Company so as to avoid disruption to PEPCO facilities.

All non-metallic conduits used in this project shall meet the requirements of 820.12(B)(2)

4. MANHOLES

Manholes shall conform to the requirements the Contract Drawings and this Special Provision.

Manholes at locations shown in contract plans shall be constructed as detailed in the Contract Drawings. Manholes can be pre-cast or cast-in-place and shall comply with the following requirements:

(1) PCC Mix Design - Shall conform to 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 Material - Shall conform to 814.03 for Membrane Cure.
(3) Reinforcing Steel - Shall conform to 812.02 of the Standard Specifications, for Grade 60.
(4) Frame and Covers - Shall be gray iron casting conforming to the requirements of 815.04 of the Standard Specifications. The word **"DCSL- TS"** in 1-inch letters shall be cast in the center depression of the top of cover and shall be flush with the surface of cover.
(5) Pre-cast Reinforced Concrete - Shall meet the requirements of 822.04 of the Standard Specifications.
(6) Cable racks shall be galvanized steel with cable insulators.

Manholes shall be installed flush with ground, pavement or sidewalk. The drain hole shall be filled with aggregate conforming to the requirements of 805, Grading No. 67.

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 meeting the requirements of 804.05 in order to prevent settlement.

5. PCC FOUNDATIONS FOR STREETLIGHT POLES

The following supplement 618.25 and 618.16

The item of work shall consist of constructing concrete foundations complete with necessary electrical conduit, anchor bolts, ground rod, and other work as required in the plans. All foundations to be constructed under this contract shall be fifteen-inch (15") bolt circle.

The materials for reinforced portland cement foundations shall meet the following requirements:

(1) PCC Mix Design - Shall conform 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 814.03 for Membrane Cure.
(3) Reinforcing Steel - Shall conform 812.02 of the Standard Specifications, for Grade 60.
(4) Anchor Bolts - Shall conform 822.06 of the Standard Specifications for High-Strength Bolts.
(5) Conduit - Sleeves shall conform to the Conduit Section of this S.P.
(6) Galvanizing – Shall conform to 811.07 of the Standard Specifications.
(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 inch 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 foundation 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 2 inches and a maximum of 4 inches above the top of the finished foundation.

It shall be the responsibility of the Contractor to ensure that all anchor bolts, ground rods, conduits, and other appurtenances are properly located before concrete is poured.

6. CABLES

The following supplements 618.20

All underground current carrying conductors used for street lighting, shall be copper, stranded type, RHW-2, 90 C, conforming to IPCA Pub. No. S-68-516/NEMA WC8 for ethylene-propylene-rubber insulated cable. The outside jacket shall conform to IPCA Pub. No. S-19-81.

7. SPLICES

The following supplements 621.12

Splices in wires and cables shall be accomplished by means of compression pressure connections. The connectors shall be suitable for the size wire used and shall be of one-piece tubular tinned copper or bolted type copper construction. The indenture shall be such as to assure maximum electrical connection and sufficient physical strength. The connections shall be made with the District's Electrical Inspector in attendance. The connection shall be covered with cross-linked polyoltin shrinkable tubing. The tubing shall be heavy wall rated 600 V 90C and conform to UL 486D, CSA C22.2 No. 198.2 and ANSI C119.1 and Western Underground Guides 2.4, 2.5. If shrinkable tubing is not feasible for a particular connection, the connection shall be covered with Super 88 Scotch plastic electric tape manufactured by Minnesota Mining and Manufacturing Company, or type CW as manufactured by Plymouth Manufacturing Company, or other approved equal half-lapped into a thickness not less than 50 percent greater than the conductor insulation. An approved waterproof coating shall be applied on the outer cover. Wires shall be tagged as specified in 621.13

8. GROUNDING AND BONDING

The following supplements 621.06 and 618.22

One copper-clap ground rod shall be installed in each manhole, traffic signal controller cabinet foundation, streetlight and traffic signal pole foundation. The grounding electrode conductor shall be sized accordance with the National Electric Code. The ground wire shall be installed with other conductors when they were pulled. Grounding shall be accomplished as soon as materials are in place to which the grounding wires are to be attached.

Material used for installation of grounding systems shall meet the following requirements:

(1) 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, (10 feet for use in grounding manholes or minimum soil contact of 8 feet.)
(2) Ground Wires - Shall be at least No. 8 AWG for streetlight grounding.
(3) Ground Clamps - Shall be heavy-duty bronze, brass or galvanized malleable iron conforming to the requirements of ASTM A220, any grade.
(4) All manhole-grounding connections including frame and cover and ground rod connections shall be made using exothermic welding.

The Contractor shall in each District owned manhole bond the neutral conductor and the system ground wire to the manhole-grounding electrode. Each metal streetlight pole shall be grounded to the adjacent manhole with a #8 stranded copper wire, which shall be connected to the post shaft and the manhole grounding buss with a solder less bolted post of lug, with non-corrosive components. The Contractor, in addition to the provisions in the Blue Book, should terminate the ground wire at the fixture's ground terminal lug provided by the manufacture. The ground wire should have no splices.

9. 250 WATT HPS TEARDROP LUMINAIRE

The following supplements 618.35

Roadway luminaire shall be a 250 watts HPS Tear Drop as shown on the contract plans with IES type III cutoff optics. It shall be heavy cast aluminum with cast aluminum top to support the electrical components and provide a solid mounting assembly for the arm fitter. Top and middle

sections are hinged together for easy installation and maintenance with 5/16-18 stainless steel toggle eyebolts with cast-iron wing-nut fasteners.

Globe doorframe shall be one-piece aluminum casting, is hinged, and retains the globe. All latches and fasteners shall be stainless steel. The globe shall be Acrylic frosted stippled globe. Secured to the doorframe with three stainless steel screws and chips. Gasketing shall be silicone sponge gasket providing a bug-tight-seal.

OPTICS: Reflector is polished, etched and anodized clear semi-specular hydroformed aluminum, mounted to housing cast frame with key slots and stainless steel screws.

The ballast assembly shall be mounted to a cast aluminum plate, which mounts to the housing with self-contained stainless steel screws for easy removal galvanized steel handle allows for easy removal of entire lamp and ballast from housing. All electrical components shall have quick disconnects.

Mounting Systems – Shall consist of a heavy duty cast neck integral to the fixture casting, installation is completed by affixing the removable half collar clamp around the cast neck with stainless steel allen socket head screws. Allows for a full 360° fixture rotation and can be locked in one orientation. Rigid mounting consists of an integral 1-1/2 11.5 NPSM stainless steel pipe permanently attached to the fixture casting for insertion into matching 8 threads on arms of the pole.

The interior components in the luminaire shall be arranged to provide ample space for cables and access to wiring. Cables shall not be closed to the ballast and shall be color-coded. The starter shall be placed in an open location for easy access and removal without the use of tools.

The lamp socket shall be heavy-duty, adjustable, with nickel-plated tempered brass split-shell lamp grips and free-floating, spring-loaded center contact.

10. CONVERSION KITS, SODIUM VAPOR

Shall meet the requirements of 820.03j

11. LAMPS

Shall be High Pressure Sodium Vapor and meet the requirements of 820.03 1 streetlights (c)

12. ELECTRONIC PHOTOCONTROL AND CYCLE DETECTION DEVICE

Shall meet the requirements of 820.03 1 streetlights (g)

13. ELECTRONIC BUTTON TYPE PHOTO CONTROL

Shall meet the requirements of 820.03 1 streetlights (h)

14. GALVANIZED STEEL TRANSFORMER BASE

The following supplements 618.28

The transformer base will have dimensions as detailed on DC-DOT Standard Drawing No. 618.05. The base will be fabricated from hot rolled carbon steel meeting ASTM-A36. The base shall be 20 inches high, 16 inches square at the base and 13 inches square at the top. The top and bottom plates will be made of ¾" minimum thick steel plate. The body of the base will be made of 7 gauge steel. The base will be provided with 4 (four) loose steel plate anchor clips to fasten the base to the anchor bolts. Each base will 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 8½" x 9" x 13¼" and the door shall be secured in place by an approved locking device. The base will be cleaned of all rolled-in mill scale, impurities, and nonmetallic foreign materials. The welds will be cleaned of all weld flux. The base is 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 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 either ASTM A123 or ASTM A153.

15. STEEL PENDANT LIGHT POLE, ARM AND DECORATIVE SHROUD

The following supplements 618.28

The post will be octaflute monotube 11 gauge steel, 8" x 4" x 28' 6" with a continuous 0.14 inches per foot taper, as shown in the Electrical Detail sheets.

The post will include a single welded simplex to accommodate 3 to 8 foot single member arm. The arm shall match the one shown in the Contract Drawings

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 escalloped 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.

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 Iscocyanurate (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 be black and match Federal Color Chip # 27038.

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.

The decorative shroud assembly shall be a combination of two rotomolded halves, steel mounting bracket, foam inserts, stainless steel,

and black oxide hardware. The shroud shall have a height of 3' 81/2" and be available for use with both single and twin cross arms.

The two molded parts are to be produced from LLDPE resin and have long term UV8 stabilization. The parts shall include raised shiplap to prevent a visual gap and misalignment between the two parts when the unit is assembled and to ensure a proper fit. Recessed and bossed locations are necessary where the mating hardware is to be installed. Threaded inserts shall be molded into to one side of the shroud to allow stainless steel hardware to secure the two halves together. Banding the two halves together will not be permitted.

Closed cell foam inserts shall be supplied on the shroud where the post enters the shroud and where the cross arm exit the shroud. This foam will prevent creatures and debris from entering the molded shroud.

All molded parts shall be free from abnormal physical qualities, porosity, cracks, shrinkage defects, or flaws which may affect the strength, of suitability of the parts for their intended use.

The steel mounting bracket shall be supplied as one unit to fix the mounting locations on the cross arm for ease of installation. The ¼-20 stainless steel hardware shall be used to secure the galvanized bracket together, secure the bracket to the post, and set the height of the shroud to allow the cross arm to be centered in the decorative shroud. The decorative shroud shall be attached to the mounting bracket with the ½" threaded rod and secured with a black oxide furnished acorn nut.

The Contract drawing of the decorative shroud is to be used as a standard of quality and dimensional requirements. Deviating from these dimensions will not be permitted.

16. TWIN 20 STEEL/CAST IRON POST

The post shall match in size and appearance as shown on the Electrical Detail Sheets that are part the Contract Plans. The post shall consist of nine (9) components, a steel shaft, cast iron clam shell base, cross arm, two (2) casings, and four (4) small cast parts.

The 16 flat flute shaft shall be fabricated from 11 gauge steel meeting ASTM-A595 GR A with a yield point of no less than 55,000 PSI, and have a 16 flat flute cross section. A cast steel anchor base shall be welded to the bottom of the shaft. A 4" x 6 1/2" hand hole with a reinforced frame and cover shall be installed 10 inches above the base. Directly opposite, a ½" – 13 sq. nut for the ground stud shall be welded to the pole wall. The flutes shall be of equal size, true and straight when observed from the

base toward the tenon. Misaligned, uneven or waves in the flutes shall be cause for rejection of the pole. A three (3) foot sample of the shaft must be submitted for approval before the start of fabrication. The sample must show the fluting and be galvanized with a final coat. The sample shall be sent to: Department of Transportation, IPMA, TEAM 3, 55 M Street, S.E., Washington, D.C., 20003.

The shaft shall be cleaned of all rolled-in mill scale, impurities and non-metallic foreign materials. The welds will be cleaned of all weld flux. The shaft is to be degreased by immersion in a heated caustic solution, then pickled in a heated sulfuric acid solution. The shaft will then be rinsed in a fresh water bath to remove any residual effects of the caustic or acid baths. The shaft will then be immersed in a concentrated zinc ammonium chloride solution and allowed to air dry before being galvanized. The hot-dip galvanizing shall meet the requirements of either ASTM A 123 or ASTM A 153. The galvanized coating shall be free of any debris or flux ash.

All galvanized exterior surfaces visually exposed are to be coated with a Urethane or Triglycidyl iscocyanurate (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 substrate preheated to 450 F for a minimum of one (1) hour in a gas-fired convection oven. The coating shall be electrostatically applied and cured by elevating the zinc coated substrate temperature to a minimum of 350 F in a gas-fired convection oven. The color of the pole and arm shall be black and match Federal Color Chip # 27038

The shaft shall either be wrapped in a 3/16” U.V. inhibited plastic backed packing foam or cradled in a 1" rubberized foam base.

17. GLOBE

Shall meet the requirements of 820.03 1 streetlights (k)

18. ELECTRICAL TESTS

The following supplements 621.16

Applicable test shall be performed in accordance with 621.16. Defects in materials or workmanship in the installation as disclosed by the test shall be corrected or replaced by the Contractor without additional compensation. A written report shall be submitted for approval. ALL GROUND RODS WILL BE TESTED AND APPROVED.

(D) PAY ITEMS

1. FURNISH AND INSTALL SCHEDULE 40 PVC RIGID CONDUIT

ITEMS: 618 072, 618 148, 618 150, 618 152 and 618 160

This S.P. Replaces 618.12

GENERAL- The Contractor shall furnish all labor, tools, material and equipment necessary to excavate, shoring, de-watering, steel plating (necessary steel plating of the roadway for moving traffic as directed by the Engineer), installation of conduit(s), concrete encasement P.C.C. Wet Mix 3,500 PSI), back filling, compaction of fill, temporary patch and maintenance of the cuts until the permanent repairs are made as directed by the Engineer. The Contractor shall excavate the trench as called for on the project plans. The trenches shall be braced according to the local and federal regulations. All conduit(s) shall be Schedule 40 PVC and shall be installed to proper line and grade. The trench shall be opened completely between manholes or between the end of the existing conduit to be added to the new location or between manholes and the proposed light before installing any conduit. Conduit(s) shall be installed with a minimum of 36" of cover below final grade and shall be installed in dry trenches. The conduit shall be installed in full lengths using manufactures supplied bends and couplings. When the Contractor must make field cuts the conduits ends shall be reamed to removed any rough edges before joining together. The joints shall be cleaned, cemented and the lengths of the conduits coupled together tightly. Where two or more conduits are being installed in the same trench the Contractor shall use spacers between the conduit runs. All conduit runs shall be complete and points of penetration of the wall of manholes be sealed before any concrete encasement is installed.

The wall penetration of PEPCO manholes will be done under the supervision and direction of PEPCO field personal. The penetration of D.C. manholes will be done under the supervision and direction of District personal. At the end of each workday the Contractor shall seal the ends of the all conduits to prevent the entrance of dirt and water into the conduit system. After the concrete encasement has been installed and allowed to set a minimum of four (4) hours or as directed by the Project Engineer, all wood forms and trench shoring shall be removed completely during the back filling operations, back fill will be done in layers of six (6) inches and compacted before the next layer is added.

If the Contractor is to add on to (splice on to) existing conduit, the splice will be done with an approved coupling. The Contractor shall in part of

this Pay Item clean, proof, install a Poly String and seal all conduits prior to installing cables. The Contractor shall run a mandrel, not smaller than ¼" smaller than the diameter of the conduit thru each conduit in the presents of the Engineer. All conduits that a mandrel can not be pulled thru shall be cleaned and or replaced and shall be reproofed at no additional cost to the District. Each conduit shall be sealed after the copper drag wire has been installed, using approved conduit plugs. Included within this pay item is the temporary patching of the trench and maintenance of the patch until final repairs have been made.

MEASURE AND PAYMENT – The unit of measure of **FURNISH AND INSTALL SCHEDULE 40 PVC RIGID CONDUIT** will be per **LINEAR FOOT**. Payment will include all labor, tools, materials, equipment, excavate, shoring, de-watering, steel plating of roadway, concrete encasement, penetration of manholes (both D.C.'S & PEPCO'S), back filling, compaction of fill, temporary patching, maintenance of the cut until the permanent repairs are made, an all incidentals necessary to complete the work specified herein.

2. FURNISH AND INSTALL 48"x48"x48"MANHOLE:

ITEM: 618 022

Work under these Pay Items shall meet the requirements of 618.05

3. FURNISH AND INSTALL 15" B. C. FOUNDATION:

ITEM: 618 394

This S.P. Modifies and Replaces 618.25

GENERAL – The Contractor shall supply all labor, equipment and materials necessary to install streetlight post foundations as shown on the plans. The foundations shall be installed 36 inches from the face of curb to centerline of foundation or as noted on the plans. A 1 ½" conduit shall be installed through the foundation for the installation of the ground rod. The ground rod, ground wire, ground clamps; power feeder cables with in the foundation shall be included in the cost for this pay item. The anchor bolts shall be set to the correct both circle and project 3" above the foundation. The conduit for the electrical conductors shall be set as close to the center of the foundation as possible. All foundation caps shall set 1" above grade. The foundation shall be allowed to set for a minimum of 3 days before installing the post. All dirt excavated and other debris shall become the property of the Contractor and shall disposed of by him at no additional cost to the District.

MEASURE AND PAYMENT – The unit of measure of **FURNISH AND INSTALL 15" B.C. FOUNDATION** will be per **EACH**. Payment will be made at the contract unit price per each foundation and payment will include all labor, equipment, tools, materials, and all incidentals necessary to complete.

4. FURNISH AND INSTALL SPECIAL SPREAD FOUNDATION FOR STREETLIGHT POLE:

ITEM: 618 992 (618 395)

GENERAL – The Contractor shall supply all labor, equipment and materials necessary to install special spread foundation for streetlight post as shown on the plans. The foundations shall be installed 36 inches from the face of curb to centerline of foundation or as shown in the electrical detail sheets. The anchor bolts shall be set to the correct both circle and project 3" above the foundation. The conduit for the electrical conductors shall be set as close to the center of the foundation as possible. All foundation caps shall set 1" above grade The foundation shall be allowed to set for a minimum of 3 days before installing the post. All dirt excavated and other debris shall become the property of the Contractor and shall disposed of by him at no additional cost to the District.

MEASURE AND PAYMENT – The unit of measure of **FURNISH AND INSTALL SPECIAL SPREAD FOUNDATION FOR STREETLIGHT POLE** will be per **EACH**. Payment will be made at the contract unit price per each foundation and payment will include all labor, equipment, tools, materials, and all incidentals necessary to complete.

5. FURNISH AND INSTALL STRANDED WIRE:

ITEMS: 618 190 and 618 250
Work under these Pay Items shall meet the requirements of 618.20

6. FURNISH AND INSTALL COPPER STRANDED GROUND WIRE:

ITEMS: 618 292 and 618 310

Work under these pay Items shall meet the requirements of 618.22

7. FURNISH AND INSTALL 250 WATT HPS TEARDROP LUMINAIRE:

ITEM: 618 760

Work under this Pay Items shall meet the requirement of 618.35.

8. FURNISH AND INSTALL 15" B.C. STEEL TRANSFORMER BASE

ITEM: 618 436

Work under this Pay Item shall meet the requirements of 618.27

9. FURNISH AND INSTALL TWIN 20 STEEL/CAST IRON POLE

ITEMS: 618 526

Work under these Pay Items shall meet the requirements of 618.28.

10. REMOVE STREETLIGHT POLE:

ITEMS: 618 492 and 618 566

Work under this Pay Item shall meet the requirements of 618.29

11. REMOVE STREET LIGHT POLE FOUNDATION,:

ITEM: 618 400

Work under this Pay Item shall meet the requirements of 617.17 and 618.26

12. REMOVE MANHOLE OVER 24" X24":

ITEM: 618 020

Work under this Pay item shall meet the requirements of 618.06.

13. REMOVE LUMINAIRE FROM STEEL POLE:

ITEM: 618 722

Work under this Pay Item shall meet the requirements of 618.37

14. FURNISH AND INSTALL 118 PLASTIC GLOBE:

ITEM: 618 860

Work under this Pay Item shall meet the requirements of 618.34

15. FURNISH AND INSTALL 250 WATT HPS CONVERSION KIT

ITEM: 618 802

Work under these Pay Items shall meet the requirements of 618.36

16. PAYMENT TO PEPCO FOR CONNECTION, DISCONNECT AND INSPECTION FOR STREETLIGHTS AND TRAFFIC SIGNALS

ITEM: 618 999

Work under this Pay Item shall meet the requirements of 618.41.

71. TRAFFIC SIGNAL WORK

This S.P supplements and modifies 617 and 618.

SCOPE:

The Traffic Signal Work consists of the modification of two traffic signals at the intersections of: FIRST STREET AND THE CROSSWALK WEST TO UNION STATION, N.E. and FIRST STREET, COLUMBUS CIRCLE, E STREET AND MASSACHUSETTS AVENUE, N.E.

The work shall be performed as specified herein, as shown on the DC-DOT Standard Drawing (Division 617) or as directed by the Engineer. The work, as indicated on the Plans or as directed, includes:

a) Furnishing, installing and relocating all above ground signal equipment, including transformer bases, 20 foot traffic poles, BLACK LED traffic and pedestrian signal heads, including Bike Signal modules. Furnishing and installing of all conduit, hand boxes and foundations for traffic signal poles.

b) Installation of local conductors for traffic signal operation.

c) Installation of underground traffic signal communication cables as shown on the plans.

d) Removal of existing above-ground traffic signal equipment.

e) All traffic signal equipment shall be “Federal Black” in color and powder coated per the appropriate specifications.

Removed traffic signal equipment, metal poles and transformer bases shall be returned to the D.C. Department of Transportation storage yard as directed by the Engineer. Finally, the work includes disposal of all parts, cables and all other work necessary to obtain a complete and final product as shown on the contract plans and as specified herein and/or as directed.

REQUIREMENTS:

GENERAL

All traffic signal work shall conform to these Special Provisions and the DCDOT Standard Drawing (Division 617). It is the intent that all items furnished and installed by the Contractor shall provide a traffic signal system, which includes traffic signal poles, traffic and pedestrian signal heads, all wire and cable and other essentials necessary for the satisfactory installation, as shown on the plans, disposal of discarded materials.

Before any traffic signal work is performed, the Electrical Contractor must be licensed and bonded in the District of Columbia and apply for an electrical permit to perform work in public space. This application must be signed by a Master Electrician or an Electrical Engineer who is required to be licensed in the District of Columbia.

The Contractor's employees installing the electrical work must be licensed in the District of Columbia as Master Electricians, Electricians or Apprentice Electricians. When Apprentice Electricians are working, a Master Electrician or an Electrician must be on the project for personal supervision.

A minimum of one of the Contractor's employees must have demonstrated experience in the installation of traffic signal heads. This employee must be at least Level II IMSA Certified, and have experience working in and around the Type 170 microprocessor based solid state traffic signal controller. Proof of certification shall be a requirement for consideration as a responsive bidder. A copy of the employee's Level II IMSA certification shall be submitted with the Contractor's bid. The Contractor will be required

to retain an employee with these minimum credentials during the entire contract. This is the only Contractor employee who will be permitted access to the controller cabinet.
All traffic signal work must be inspected by the Traffic Signal System Division Inspector of the D.C. Department of Transportation. Twenty-four (24) hours advance notice is required for inspection. The Office of the Traffic Signal System Division is located at 2000 14th Street, NW, Washington, D.C. 20009, Telephone Number: (202) 671-2100.

The Potomac Electric Power Company will furnish power for the traffic signal system. All work involved with PEPCO facilities shall be performed in conformance with the PEPCO requirements attached in the Appendices.

It shall be the Contractor's responsibility to notify and coordinate with PEPCO throughout the construction of the project in connection with all PEPCO services and facilities in the construction area, such that removal and restoration of services can be done in a timely and orderly manner at all times. Construction delays as a result of inadequate coordination shall be the Contractor's responsibility.

I. CONTRACTOR'S WORK SCHEDULE

This SP supplements and modifies Article 17C of the General Provisions, 105.10 and 105.11.

Work shall be performed in the field at times of day in accordance with SP 15(A) TRAFFIC FLOW RESTRICTIONS. Work including the fabrication of signal heads for field installation, disposal of removed equipment and administrative matters relating to the conduct of this contract may be performed at the contractor's facility during the times the contractor is working in the field.

Work in the field shall be canceled and/or suspended if already in progress during periods of inclement weather featuring precipitation. Electrical work in the field will be prohibited during rain and/or snow due to the potential for electrical shock and/or damage to sensitive solid state controller components. Decisions to terminate field work for a day shall be made by the Engineer. The contactor shall factor inclement weather into the overall schedule to ensure compliance with yearly production goals.

Work in the field on Saturdays, Sundays, holidays, and night time is discouraged, but will be entertained with the written request of the contractor to the Engineer fourteen (14) calendar days prior to the day on which the work is to be performed. The Engineer shall respond to such requests within seven (7) calendar days of receipt of the request.

The contractor must keep illuminated at least one signal head controlling a specific movement. A signal head may be taken out of service to perform required work for a period of time not to exceed four (4) hours as long as the contractor is actively working on that intersection corner and as long as proper maintenance of traffic practices are followed.

The contractor shall be permitted to perform work at more than one intersection on any particular day. Several crews may work at different intersections simultaneously. These working conditions are subject to the following stipulations:

- Only contractor employees with IMSA Level II Certification and documented Type 170 Controller expertise are authorized to enter controller cabinets for the purpose of disconnecting field cable at the terminal (if necessary).
- Only DDOT traffic signal technicians scheduled ten (10) working days in advance are authorized to modify the traffic signal sequence of operation to support the contractor's work (if necessary).
- Several crews may work simultaneously at different corners of the same intersection as long as proper maintenance of traffic practices are followed, and as long as only one of the two signal indications for a given approach are disabled at any one time.

The contractor shall not initiate any field task, which cannot be completed prior to 3:30 p.m., the end of the weekday workday. Furthermore, the contractor shall ensure that the signal operates in compliance with the approved traffic signal sequence of operation before vacating the intersection.

II. CONTRACTOR EMPLOYEE TRAINING REQUIREMENTS

The Traffic Signal System Division will conduct mandatory training for the contractor's technical employees. The contractor shall be required to videotape and audiotape the entire training session. Any new employees hired by the

contractor to work on this project will be required to view and understand the training as a prerequisite for participation in this project. The training will be conducted by District Department of Transportation personnel and will feature demonstrations of the accepted methods for performing the following tasks:

- Working with the Type 170 controller
- Properly aligning and tightening vehicular and pedestrian signal heads.
- Disconnecting cable from and removing existing signal heads.

- Connecting cable to and installing proposed signal heads.
- Signal head mounting techniques.
- Installing LED module inserts into signal heads.
- Terminating cable in the controller cabinet and dressing cable in a neat manner.

Training will be conducted on District of Columbia premises and will be scheduled to occur at mutually agreeable time and date within 10 working days following the contract notice to proceed. Videotape and audiotape costs are to be borne by the contractor. The contractor shall furnish to the District of Columbia written confirmation that employees retained after the training session have viewed the videotape and understand District requirements. Videotape shall be in VHS format.

The cost of this additional, specified training shall be reflected and distributed equally among unit prices for Special Provision No. 39, 40, 43-88, inclusive, except SP No. 51, 61 and 67.

(B) In the case of damage to underground vaults by the contractor, the contractor shall restore such underground vaults to a condition equivalent to that which existed prior to the damage by repairing, rebuilding, waterproofing or as may be directed by the engineer at the contractor's sole expense.

III. EXCAVATION AND BACKFILL

Trench excavation and backfill shall be required to accomplish the construction of underground electrical conduit, manholes and hand boxes, and all foundations. Trench excavation and backfill shall conform to the requirements of Division 200, Section 207, TRENCH EXCAVATION AND BACKFILL of the District of Columbia's Standard Specifications for Highway and Structures, and these special provisions.

The excavation required for the installation of conduits, foundations and other appurtenances shall be performed in such a manner as to avoid any unnecessary damage to streets, sidewalks, landscaping and other improvements. Cuts through existing hard surface pavement shall be made by saw cutting to a minimum depth of 75 mm (3 inches) along the trench limit and the using pneumatic tools as required to make even, neat edges. Use of impact type breakers for PCC and AC removal over trenches shall be restricted or prohibited when in the public interest.

Trenches shall be braced according to local and federal regulations. The trench shall be completely opened to full depth between the foundation and manhole, between two manholes, between manhole and hand box, or between the ends of existing conduit to be extended to the new location before any new conduit is installed.

The trenches shall be excavated to the minimum depth required for each installation and shall not be excavated wider than necessary for the proper installation of the electrical appurtenances and foundations. Trenches for the installation of electrical conduit shall feature a maximum width of 18 inches. Excavation limits in the vicinity of a proposed foundation shall not exceed 12 inches in any direction beyond the outer edge of the foundation. Excavation shall not be performed until immediately before installation of conduit and other appurtenances. The material from the excavation shall be placed in a position that will not cause damage or obstruction to vehicular and pedestrian trat1ic or interfere with surface drainage.

All trenches shall be excavated and backfilled the same day. If the trenches are not backfilled at the end of each day's work, and at all other times when construction operations are suspended, temporary plating over trenches shall be placed to facilitate the passage of traffic over the excavated areas, and all equipment and other obstructions shall be removed from that portion of the roadway used by public traffic. Unless otherwise permitted in writing by the Engineer, all surplus excavated material shall be removed and disposed of within twenty-four (24) hours, outside the public right-of-way.

No extra payme nt will be allowed for rock excavation or on account of any subsurface condition encountered. Excavations after backfilling shall be kept well filled and maintained in a smooth and well-drained condition by the Contractor until permanent restorations are made by the Contractor.

MEASURE AND PAYMENT: This special provision features NO measure and payment Provision. The cost for excavating and backfill and all incidentals required to support this special provision shall be included in the cost of furnishing and installing electrical conduits, manholes and hand boxes and foundations, as appropriate.

IV. FURNISH AND INSTALL HANDBOXES

Pay Item No.: 617 010

The Contractor shall furnish and install hand boxes conforming to the requirements of 618.12, 618.19, appropriate sheets from D.C. Drawing No S-21 00 and these special provisions.

The hand boxes to be used in this contract are shown on Sheet 10 of *21* on D.C. Drawing No. S-2100.

Hand boxes shall be constructed on locations shown on the individual plans. They may be pre-cast or cast-in-place and shall comply with the following requirements:

1) PCC Mix Design- Shall conform to 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 Material- Shall conform to 814.03 for Membrane Cure.
3) Reinforcing Steel- Shall conform to 812.02 of the Standard Specifications, for Grade 60
4) Frame and covers- Shall be gray iron casting conforming to the requirements of 815.04 of the Standard Specifications. The word."DCSL-TS" in l-inch letters shall be cast in the center depression of the top of cover and shall be flush with the surface of cover.
5) Pre-cast Reinforced Concrete- Shall meet the requirements of 821.04 of the Standard Specifications.
6) Cable racks shall be galvanized steel with cable insulators.

The frame and cover shall be painted battleship gray before installation with one field coat of primer meeting the requirements of 811.03. Cover for manholes and pull boxes shall clearly be 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 toot 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 about 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 engineer.

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 man and hand holes that he/she 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.

MEASURE AND PAYMENT: Each individual manhole and hand hole will be paid at the contract unit price. Payment will include all labor, tools, materials, equipment, excavation, shoring, de-watering, steel plating of roadways, manholes, and hand boxes, ground rod, cable racks, frame and cover, backfilling, compaction of till, temporary patching, maintenance of the cut until permanent repairs are made, and all incidentals necessary to complete the work described herein.

V. FURNISH AND INSTALL ENCASED PVC ELECTRICAL CONDUIT

Pay Item No.: 617030, 617032, 617034.

The Contractor shall furnish and install electrical conduits conforming to the requirements of 618.14, 819.12 and these special provisions. The number of conduits to be provided at a signalized intersection is shown on the drawing in the Appendix entitled "Traffic Signal/Street Light Conduit Detail". This drawing shall take precedence over instructions shown on individual plans in the event of conflicts. This drawing specifies the following conduit arrangements

Controller Cabinet to PEPCO Manhole	1-2”
Controller Cabinet to DC Manhole	1-2”, 2-4”
DC Manhole to DC Manhole	4-4”
DC Manhole to PEPCO Manhole	4-4”
DC Manhole to Any Pole	1-2”, 1-4”
DC Manhole to Hand box	1-4”
DC Manhole to DC Manhole (Mainline)	6-4”

Three sizes of conduit will be used in this contract. 1.5 inch conduit will be used in foundations to provide a raceway for ground rods. 2 inch and 4 inch conduits

shall be used where shown on the plans and as described in this special provision to protect and provide a routing for electrical cables. The contractor shall install electrical conduits in conformance with the provisions of Shed II of *22.* D.C. Drawing No. S-2100. The contractor shall comply with special provisions in this contract dealing with Excavation and Backfill and concrete encasement. All conduits shall be rigid, gray. Polyvinyl Chloride (PVC) Schedule 40 conformation to the requirements of EB 35 or better for encased conduits. Conduits and tilling 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 I 00 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 Engineer.

The conduit shall be installed at full lengths using standard manufacturer supplied elbow, 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 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. ·

There will be instances when the contractor will be 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 Chand hole shall be terminated flush with the inside wall or 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. Back till 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 worksite at the end of each workday.

The dragline shall be comprised of materials which cannot conduct electricity and shall be 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.

Existing conduits that are to be abandoned shall be left in place.

MEASURE AND PAYMENTS: The unit of measure will be per linear toot measured from the center of the manhole, hand box, or foundation. The measurement will be made along the centerline of the conduit. Payment shall include all labor, tools, materials, equipment, excavation, shoring, de-watering, steel plating of roadways, concrete encasement, manhole and hand box penetration, compaction of till, temporary patching and maintenance of the cut until permanent repairs are made, and all incidentals necessary to complete the work described herein.

VI. FURNISH AND INSTALL PCC FOUNDATIONS

Pay Item No. 617 008

This item of work shall consist of constructing concrete foundations complete with necessary electrical conduit, anchor bolts, a ground rod, reinforcing steel, wire mesh, ground wires, ground clamps and pee mix design. Two different types of foundations are to be constructed; (1) foundations for traffic signal controller cabinets, and (2) foundations for traffic signal poles or pendent post street light poles mounted on transformer bases.

The materials for reinforced Portland cement foundations shall meet the following requirements:

1) PCC Mix Design- Shall conform 814.03 for Class F, General, minimum: 28-day compressive strength of: 24.13 Mpa (3,500 psi) on field test cylinders made in the field and cured in the laboratory.\
2) Curing Materials- Shall conform 814.03 for Membrane Cure.
3) Reinforcing Steel- Shall conform 812.02 of the Standard Specifications, for Grade 60.
4) Wire mesh for reinforcement of controller cabinet foundations shall conform to 812.0 1 WELDED WIRE FABRIC. Wire mesh shall be 4" x 4".
5) Corrugated Metal Pipe- Shall conform 809.02 of the Standard Specifications, for steel material.
6) Anchor Bolts- Shall conform 821.06 of the Standard Specifications for High- Strength Bolts.
7) Conduit- Sleeves shall conform to the S.P. in this contract entitled "FURNISH AND INSTALL ENCASED PVC ELECTRICAL CONDUIT."
8) Galvanizing- Shall conform 811.07 of the Standard Specifications.
9) Ground Rods- Shall be copper-clad rods conforming to the requirements of UL-467. Ground rods shall have a diameter of at least l9mm (3/4 inch) and a length of at least 3.05 meters (10 feet).
10) Ground wires- Shall be at least No.6 AWG bare solid copper for traffic signal and at least No. 8 AWG for streetlight conforming to the requirements of ASTM B2.
11) 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 the concrete foundation 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 51 mm (2 inches) and a maximum of 102 mm (4 inches) above the top of the finished foundation.

It shall be the responsibility of the Contractor to ensure that all anchor bolts; ground rods, conduits, and other appurtenances are properly located before concrete is poured. Anchor bolts for the controller cabinet must be aligned so

that the front door of the controller opens to allow the signal technician to observe the entire signal display while working in the controller. The Contractor shall be required to confirm the location of the controller anchor bolts before pouring concrete.

VIII. FURNISH AND INSTALL FOUNDATIONS FOR TRAFFIC SIGNAL POLE

Pay item No. 617 008

The Contractor shall furnish all labor, equipment and materials necessary to construct a foundation for a traffic signal pole or a pendant post streetlight pole as shown on the plans, in conformance with the drawing in the Appendix entitled "15 inch BOLT CIRCLE DIAMETER FOUNDATION", and in conformance with appropriate provision from the GENERAL paragraph. The distance from the face of the curb to the centerline of the foundation shall not be less than 36 inches or as noted in the plans. Forms shall be true to line and grade. Conduit ends and anchor bolts shall be placed in proper position and shall be held in place by means of a template until the concrete sets. The foundation shall have three (3) conduits installed. All conduits shall be Schedule 40 PVC. A 1.5 inch diameter conduit shall be installed through the foundation for the installation of the ground rod. One 2 inch diameter and one 4 inch diameter conduit shall be routed from the foundation to the manhole(s) designated on the plans. The conduits shall extend a minimum of 2 inches and a maximum of 4 inches above the grade of the foundations. Each conduit installed to accommodate cable shall feature a radius sweep of 36 inches so as to meet the underground electrical conduit at the proper elevation beneath grade.

The four anchor bolts shall be set at the correct location forming a 15 inch diameter bolt pattern as shown on the drawing. Each bolt shall project 3 inches above the top of the foundation. The foundation shall be allowed to set for a minimum of 3 days before installing the transformer base. All dirt excavated and other debris shall become the property of the Contractor and shall be disposed of by him at no additional cost to the District.

The 0.75 inch diameter copper clad ground rod, No 6 solid ground wire, and ground clamps shall also be included. The ground rod shall be sut1icient length to ensure that a minimum length of 8 feet is driven into undisturbed soil.

MEASURE AND PAYMENT: Each individual foundation constructed will be paid at the contract unit price. The price shall include the cost of excavation, the pee concrete mix, the anchor bolts, the ground rod, reinforcing steel, ground clamps, No. 6 solid copper ground "wire and Schedule 40 conduits with the entire 36 inch sweep,

where appropriate. The price shall also include all labor, materials, equipment, and incidentals necessary to complete the work and completely clean up the site.

XI. GROUNDING AND BONDING

The Contractor shall furnish all necessary labor, materials, and equipment necessary to furnish and install an electrical grounding system consistent with the requirements of the latest editions
of the National Electrical Code and the District of Columbia Electrical Code.

Material used for installation of grounding systems shall meet the following requirements:

1) Ground Rods- Shall be copper-clad rods conforming to the requirements of UL-467. Ground rods shall have a diameter of at least ¾ inches and a length of at least 10 feet. The length of the ground rod shall be sufficient to ensure that at least 8 feet of the rod is in contact with undisturbed soil, and that the resulting system passes all required grounding tests.

2) Ground Wires- Shall be at least No. 8 AWG for streetlight grounding and #6 solid bare copper wire for traffic signals.

3) Ground claims- shall be heavy-duty bronze, brass or galvanized malleable iron conforming to the requirements of ASTM A220, any grade.

4) All manhole post ground rod connections shall be made using exothermic welding.

The Contractor shall in each District owned manhole bond the neutral conductor and the system ground wire to the manhole grounding electrode.

Any DC Manhole that is worked in under this contract will be checked to affirm the existence of an existing ground rod; if no ground rod is found, a ground rod must be installed through the floor of the manhole in such a way as to have a minimum soil-contact of 8 feet.

The Contractor must make the electrical connections between the GROUND ROD-NEUTRAL CONDUCTOR AND ANY GROUND WIRES in the existing DC manholes.

One solid copper clad ground rod shall be installed in each manhole, hand box. Traffic signal controller cabinet foundation and each traffic signal and street light pole foundation.

The grounding electrode conductor shall be sized in accordance, with Section 250 of the most current edition of the National Electrical Code and these special provisions. The Contractor shall install ground wires in a continuous length without splices. The Contractor must make the electrical connections between the ground rod-neutral conductor and any ground wires using exothermic welds in District of Columbia manholes. Ground wires shall be installed at the same time as other conductors, when they are pulled. The contractor shall exercise care when installing the ground wire to avoid damage or kinks to the cable. Damaged or ineffective ground wire shall be removed and replaced by the contractor at no cost to the District of Columbia.

Grounding shall be accomplished as soon as materials are in place to which the grounding wires are to be attached. Traffic signal controller cabinets, termination cabinets, manholes, hand boxes, poles and transformer bases should be made mechanically and electrically secure to form a continuous system, and shall be effectively grounded. The grounding system shall be installed, connected, tested, and deemed acceptable to the Engineer before energizing current carrying conductors.

MEASURE AND PAYMENT: This Special Provision features no measure and payment provision. The cost of the grounding system is covered in special provisions dealing with manholes, hand boxes and foundations. Grounding system costs shall be appropriately distributed over those special provisions.

XII. FURNISH AND INSTALL ELECTRICAL CABLE FOR TRAFFIC SIGNALS

Pay Item No. 617 020, 617 050, 617 052, 617 058

Electrical cable for traffic signal construction shall conform to the requirements of 618.16, "Wiring Systems"; 618.17, "CABLE CONNECTION"; 618.18, "Circuit Identification"; and these special provisions. Electrical cables shall be looped in and out of controller cabinets, communications termination cabinets, manholes, hand boxes, poles and transformer bases 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, manholes and overhead as shown on individual plans. Cable routings shall be adapted to match field changes resulting in conduit, manhole, foundation, controller, or hand box relocations.

The Contractor shall be required to furnish and install the following different varieties of cable in conjunction with work in this contract; cable running between the controller and signal heads, detector lead-in cable, and twisted pair copper communications cable. Ground cable is addressed in conjunction with grounding and bonding.

SPECIFICATIONS:

(1) CABLE BETWEEN THE CONTROLLER AND SIGNAL HEADS

The cables running between the traffic signal controller and signal heads shall be 7 Conductor 14 AWG stranded cable conforming to the most recent requirements of the International Municipal Signal Association, Inc. (IMSA) Specification No. 19-1. A signal head shall be defined as a traffic signal head, pedestrian signal head, school or warning flasher, neon sign or fiber-optic or LED electronic regulatory or lane control sign.

(2) DETECTOR LEAD-IN CABLES

The cables running between the traffic signal controller and specified detection equipment shall be 4 conductors 18A WG shielded, stranded cable. This cable is "Non IMSA spec" and frequently goes by the catalog code as No. 4Cl8 B7 OS-F. Detection equipment shall be defined as pedestrian push button, microwave vehicle detector, loop detector, or Accessible Pedestrian Signal (APS) unit. Cables serving loop detectors shall be coiled in the appropriate hand box.

(3) COMMUNICATION CABLES

Underground communications cable shall satisfy all of the requirements of IMSA 60-2 or REA PE-39. Aerial (overhead) communications cable shall meet all of the requirements of IMSA 40-2 or REA PE-22. Communications cable which runs partly overhead and underground shall meet the requirements of IMSA 60-2 or REA PE-39. The District of Columbia uses 12 pair, 25 pair, 50 pair, and 100 pair communications cables in its traffic signal plant. Precise cable routing as with the number of pairs required are shown on each individual plan set. All signal conductors shall be color coded in accordance with IMSA Specification 19-1-1967, Table 2. The contractor shall furnish a manufacturer's certification that the cables

conform to the requirements of IMSA or ASTM Specifications referenced for each type of cable furnished.

(4) CONNECTORS AND TERMINALS

Connections and terminals shall conform to the requirements of NEC Il 0 for the type of cables specified in the plans and shall conform to the manufacturer's recommendations.

INSTALLATION PROCEDURES:

The following wiring procedures will be strictly adhered to when wiring electrical devices to operate as part of a signalized intersection.

1. 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.
2. All cable shall satisfactorily pass the meggar tests. Cable failing the megger test shall be replaced by the contractor at no cost to the District of Columbia.
3. Cables shall be pulled through electrical conduits, manholes, controller cabinet, poles, and mast arms in accordance with the following procedures:
    a. 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.
    b. 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.
    c. 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.
    d. 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.
    e. Cables shall be looped in and out of the controller cabinet, manholes, hand boxes, and poles to provide adequate slack and the minimum amount of stress on conductors and connectors. Cable runs shall be continuous with no splices

in the conduct, manholes, hand boxes, transformer bases or anywhere going along an overhead cable run.

f. 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 slice kits which totally encapsulate the cable and produce a waterproof splice.

g. Cables shall be racked neatly and securely supported in all manholes.

4. 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 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. 1 SIGNAL No. 1 -for cables servicing vehicle or pedestrian signal heads, flashers, electronic signs.
- 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 hand boxes.
- CABLE No. 4, Microwave Det A- For cables servicing microwave vehicle detectors.

A. <u>VEHICLE SIGNAL HEADS</u>

1. All cable to contain 7 conductors.
2. The cable to be used shall be 14 AWG, stranded, THHN, manufactured according to the IMSA 19-1, specification.
3. The seven conductors are color coded as follows: Red, Orange, Green, Blue, Black, White, and White with a Black tracer.

Note: Existing seven conductor cable may be color coded as follows in some cases: Red, Amber or Yellow, Green, Red, w/Black Tracer, Black, Green/Black tracer, and White.

4. The conductor coded with white insulation will be the system neutral.
5. The conductors coded with Red, Orange, and Green or Red, Amber or Yellow and Green insulation will be used for vehicle signal heads controlling traffic moving in the north-south direction.
6. The conductors coded with Blue, Black, and White with a Black Tracer or Red with a Black Tracer, Black and Green with a Black Tracer will be used for vehicle signals heads controlling traffic in the east-west direction.
7. Unused conductors to each signal head will be reserved for use in the event that the sequence of operation of modified and additional sections are required, or if one or more of the conductors currently in use fail.
8. A separate segment of 7 conductor cable shall be routed from the traffic signal controller to each vehicle signal head. However, cable may be routed between the terminal blocks of two signal heads if the following criteria are satisfied:
    a. The two vehicle signal heads must operate identically;
    b. The two vehicle signal heads must be mounted on the same pole,
    or
    c. One of the two vehicle signal heads must be pole-mounted and the other is mounted on a mast arm.
    d. The cable shall not exist in the underground conduit network.
9. No branch splices of cable shall be permitted at any point between the traffic signal controller and the signal head, or between vehicles signal heads which are wired between their terminal blocks. Straight splices of cable shall not be made unless approved by the Engineer.
10. In the event of a cable malfunction involving new and existing cable installed by the contractor in accordance with these policies, the following policies apply:
    a. All new cable is required to be replaced if found defective or damaged.
    b. If there are a sufficient number of unused conductors in the existing cable, they will be used in lieu of the defective

conductors. The cable shall be tagged in the controller cabinet to indicate which conductors are defective.

c. If there are an insufficient number of unused conductors in the existing cable to replace the defective conductors, a new segment of 7- conductor cable shall be pulled from the controller cabinet to the signal head.

d. Under no circumstances will it be permissible to replace the defective segment of cable with a new segment of cable utilizing straight splices connecting the new with the old cable.

11. Unless otherwise specified in the plans, all cable for vehicle signal heads is to be furnished and installed by the traffic signal installation contractor.

12. If inspection of the traffic signal work by District of Columbia forces shows any unauthorized deviations from the provisions of this policy, the contractor shall be obligated to make appropriate revisions at no cost to the District of Columbia before final payment for the job is released.

B. PEDESTRIAN SIGNAL HEADS

1. The provisions of item No. I, 2, 3, 4, 7, I 0, 11, and 12 for vehicle signal head apply for pedestrian signal heads.
2. The conductors coded with red and green insulation will be used for pedestrian signal heads controlling pedestrians in the north-south direction.
3. The conductors coded with White w/Black tracer and blue or Red w/Black tracer and Green w/Black tracer will be used for pedestrian signal heads controlling traffic in the east-west direction. The Orange and Black conductors shall be used together where additional conductors are required.
4. All new signal installations and modifications are to be designed so as to install a pair of pedestrian signal heads on the same pole. A separate segment of 7 conductor cable shall be routed from the traffic signal controller to each pair of pedestrian signal heads. The appropriate conductors and the system neutral are to be routed through the brackets to the terminal block of the signal head.
5. In instances where pedestrian signal heads on the same comer of the Intersection must be mounted on separate poles, a separate segment of 7 conductor cable is to be routed to each pedestrian signal head.
6. No branch splices of cable shall be permitted at any point between the traffic signal controller and the signal head. Straight splices of

cable shall not be made unless approved by the Engineer.

C. PEDESTRIAN PUSH BUTTONS

1. All cable to contain 4 conductors.
2. The cable to be used shall be 18 AWG, stranded, twisted, shielded cable manufactured according to District of Columbia specifications.
3. A separate segment of cable shall be rerouted from the controller cabinet to each pedestrian push button.
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 pedestrian push button. 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 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 to the District of Columbia before final payment for the job is released.

D. LOOP DETECTOR LEAD-IN CABLE

1. The provisions of items 1, 2, 3, 4, 5 and 6 for pedestrian push buttons apply for loop detector lead in cable. In the aforementioned policy statements, the term pedestrian push button is to be replaced by the term loop detector hand box.

E. MICROWAVE VEHICLE DETECTOR LEAD-IN CABLE

1. The provisions of items 1, 2, 3, 4, 5 and 6 for pedestrian push buttons apply for microwave vehicle detection or lead-in cable. In the aforementioned policy statements, the term pedestrian push button shall be replaced by the term microwave vehicle detector.

F. LOOP DETECTOR CABLE

1. All cable to contain I conductor.
2. The cable to be used shall be 14 AWG, stranded; THNN manufactured according to the latest IMSA specifications.
3. 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.
4. The dimensions of the loop detector and the number of turns of cable required will be clearly identified on the plans.
5. The cable shall contain no splices other than those made with the shielded lead-in cable in the hand box.
6. 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.
7. Unless otherwise specified in the plans, all cable is to be furnished and installed by the traffic signal installation contractor.
8. If inspection of the traffic signal work by the 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 to the District of Columbia before final payment for the job is released.
9. 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 satisfying District of Columbia specifications.
10. Whenever practical, look 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, at no cost to the District of Columbia, 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.

G. LIGHT EMITTING DIODE (LED) ELECTRONIC SIGNS

1. The provisions of item No. I, 2, 3, 4, 7, 10, 11 and 12 for vehicle signal heads apply for electronic Light Emitting Diode (LED)

signs.

2. The color coded conductors used to operate the electronic signs are to be noted in the controller cabinet
3. A separate segment of 7 conductor cable is to be routed from the designated traffic signal controller to each electronic sign.
4. No branch splices of cable shall be permitted at any point between the designated trat1ic signal controller and the electronic sign. Straight splices of cable shall not be made unless approved by the Engineer.

H. FLASHING BEACONS FOR SCHOOL OR WARNING SIGNS

1. The provisions of item No. I, 2, 3, 4, 5, 7, 10 and 12 for vehicle signal heads apply for cable to t1ashing beacons.
2. Unless otherwise noted, f1ashing beacons are to be installed in pairs; one above and one below each sign.
3. A separate segment of 7 conductor cable is to be routed from the designated traffic signal controller to a control cabinet to be mounted on the pole to which the beacons are affixed. This cable will terminate at the terminal block, and be furnished and installed by the traffic signal installation contractor.
4. A separate segment of 7 conductor cable is to be routed from the terminal block of the pole mounted cabinet to each pair of flashing yellow beacons. Unless otherwise noted on the plans, this segment of cable will be furnished and installed by the contractor.
5. The conductor color coded red will be routed from the controller through the pole mounted cabinet to the top beacon, visible to northbound or southbound traffic.
6. The conductor color coded green will be routed from the controller through the pole mounted cabinet to the bottom beacon visible to northbound or southbound traffic.
7. The conductor color coded White w/Black tracer or Red w/Black tracer shall be routed from the controller through the pole mounted cabinet to the top beacon visible to eastbound or westbound traffic.
8. The conductor color coded Blue or Green s/Black tracer shall be routed from the controller through the pole mounted cabinet to the bottom beacon visible to eastbound or westbound traffic.

I. TRAFFIC SIGNAL CABLE COLOR CODES:

7 Conductors 14 AWG Stranded Cable

ISMA Cable Color Code:	Green	
	Orange	NB/SB Traffic
	Red	
	Blue	
	Black	EB/WB Traffic
	White/Black	
	White - AC	

Old Cable Color Code:	Green	
	Yellow	NB/SB Traffic
	Red	
	Green/Black	
	Black	EB/WB Traffic
	Red/Black	
	White –AC	

J. INSTALLING TWISTED PAIR COMMUNICATION CABLE

1. Underground communications cables shall meet all of all requirements of IMSA 40-2 or REA PE-39. Aerial (overhead) communication cable shall meet all of the requirements of ISA 40-2 or REA PE-39. Communications cable runs that are partly overhead and underground shall meet the requirements of IMSA 60-2 or REA PE-39.
2. Cable shall be pulled in 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 shall be used to facilitate the pulling of the cable. Under no circumstances shall the contractor use a motorized vehicle to assist in pulling cable.
3. Communication cable shall also be installed on messenger cable when shown on the plans as overhead cable. Cable shall be looped in and out of controller cabinets and ground-mounted termination cabinets at termination points or splice points as indicated on the Plans.
4. Communications cable shall be installed for the traffic signal control system. Cable runs shall be continuous with no splices in the conduit, manhole, pull boxes, or overhead runs.
5. All large cables, over twenty-five (25) pairs, shall terminate in termination cabinets only. Connection between the terminating cabinets and the intersecting controllers shall be made with

twelve (12) or twenty-five (25) pair cables only as indicated on the Communications Cable Schematic Sheet of the Plans.

6. The communications cable in an intersection controller shall be terminated by the contractor on a terminal block mounted in the cabinet. The cable connection between the terminal block and the communication modern shall be through the controller's communication connector (C2).
7. Cable ends shall be taped to exclude moisture and shall remain so until terminal equipment is attached by the contractor. For cable connections in termination cabinets, connectors approved for outside use shall be used.
8. Cables shall be looped in and out of controller cabinets, termination cabinets, manholes and pull boxes to provide adequate slack and the least amount of stress on the conductors and connectors.
9. If an emergency cable condition exists, where a splice is permitted in underground and overhead runs, the splices should be made in the appropriate manner using a waterproof splice kit conforming to the requirements of the National Electric Code (110b.l4): Boxes or kits should be of sufficient size to allow free space to all conductors therein. All splices shall be capable of operation when submerged in water. All splices and conductors including spares shall be made waterproof and mechanically and electrically secure.
10. Before any cable is pulled into the conduit, provisions shall be made for supporting the cable ends on racks in the manholes.
11. Cable shall not be allowed to lie on the manhole floor.
12. The channels that support the racks shall be securely fastened to the manhole wall with expansion bolts. The spacing between racks adjacent to the proposed cable joint shall be a minimum of 36 inches.
13. Communication cable shall be furnished on reels and pulled with a minimum of dragging on the ground or pavement.
14. This work item shall also include the removal and disposal of existing communications cable that will be replaced by the new cable run.
15. The contractor shall disconnect the old and connect the new communications cable in all controller cabinets. The Contractor shall pull the cable into the cabinets.
16. When modifying or upgrading existing signalized intersections, the contractor shall not disconnect existing communications cable from the controller cabinet until new communications cable is already terminated at the new controller cabinet, or until all new

communications cables have been pulled, tested, and in place awaiting controller change out on the same foundation.

MEASURE AND PAYMENT: The unit of measurement for all electrical cable shall be the number of linear feet installed. Each linear foot of cable installed will be paid at the contract unit price. The price shall not include termination of cables as this is included in the price of other units of work comprising the total job. The price shall include all labor, equipment, materials and incidentals required to procure, install and test the cables, and to complete all work specified herein.

XIII. FURNISH AND INSTALL GALVANIZED STEEL TRANSFORMER BASE

Pay Item No. 617 024

After receiving the Engineer's approval of the catalog cuts, the contractor shall procure the transformer base and all hardware designated in the specifications conforming to the technical specifications in the Appendix.

The contractor shall furnish all necessary labor, equipment, and materials for the installation of the transformer base. The galvanized anchor bolts, nuts and washers must have previously been installed in conjunction with the fabrication of the pee foundation for poles. The transformer base shall be set on the foundation with the anchor bolts protruding through the designated holes in the base of the transformer base. The transformer base shall be oriented on the foundation such that the door side is 180 degrees from the side of the base facing and closest to the curb.

The contractor shall place metal shims, if required, between the transformer base and the concrete foundation to level the transformer base. After the transformer base has been leveled, the contractor shall affix the transformer base to the foundation using the galvanized nuts and washers provided with the anchor bolts. The contractor shall tighten the nuts to ensure a stable, secure connection. The contractor shall furnish and install one unspliced segment of No. 6 solid bare copper ground wire between the ground rod in the foundation and the grounding nut holder in the transformer base. The connection between the ground cable and the ground rod shall be accomplished with a standard bronze ground rod clamp fabricated from a high strength corrosion resistant alloy and engineered to tit on a 0.75 inch diameter copper clad ground rod.

MEASURE AND PAYMENT: Each individual transformer base with all hardware designated in the technical specifications will be paid at the contract unit price. The price will include the transformer base, hardware, ground wire, ground wire clamp and all labor, equipment and materials required to install the transformer base.

XIV. FURNISH AND INSTALL 20 FOOT TALL STEEL TRAFFIC SIGNAL POLE:

Pay Item No. 617 046

After receiving the Engineer's approval of the catalog cuts, the contractor shall procure the 20 foot tall steel traffic signal pole and all hardware designated in the specifications in the Appendix,

The contractor shall provide all necessary labor, equipment and materials for the installation of the pole. It is recommended that all holes for cable to enter into signal heads, mast arms, and pedestrian and vehicular detection equipment be cut and finished prior to the erection of the pole onto the transformer base. In any event, all holes must be made prior to the installation of any cable through the pole.

The contractor shall set the pole on the leveled transformer base with the holes in the pole base casting lining up with the holes on the top of the transformer base. The contractor shall use the 1" x 3" galvanized steel bolts with nuts and washers, provided with the procurement of the transformer base, to attach the pole to the transformer base. The contractor shall apply sufficient torque to ensure a secure, stable connection. Grounding the pole is unnecessary if the transformer base is grounded. The contractor shall have the option of routing cable for signal heads and detection equipment through the pole before the pole is erected, or providing a means for installing cable without splices or damage after the pole is erected. After the bolts have been secured and tightened, the contractor shall install the removable ornamental pole top finial and the four ornamental cast leaf bolt covers where specified on the drawing.

MEASURE AND PAYMENT: Each individual pole with all hardware designated in the technical specifications will be paid at the contract unit price. The price will include all labor, equipment and materials required to install the pole.

XVI. FURNISH TRAFFIC SIGNAL LIGHT EMITTING DIODE (LED) MODULE:

Pay Item No.: 617 068, 617 070, 617 072, 617 074, 617 076, 617 078

After receiving the Engineer's approval of catalog cuts, the contractor shall procure LED modules conforming to the technical specifications contained in the Appendix. The following LED modules are used in the District of Columbia:

- 12 inch Red Ball LED Module
- 12 inch Red Ball LED Module with Bicycle symbol
- 12 inch Yellow Ball LED Module
- 12 inch Yellow Ball LED Module with Bicycle symbol
- 12 inch Green Ball LED Module
- 12 inch Green Ball LED Module with Bicycle symbol
- 12 inch Red Arrow LED Module
- 12 inch Yellow Arrow LED Module
- 12 inch Green Arrow LED Module
- 12 inch Overlay Lunar White Walking Person and Portland Orange Raised Hand LED Module
- 12 inch Portland Orange Countdown LED Module

The contractor shall be responsible for safekeeping and storage of the module at the contractor's facility following receipt of the materials from the vendor. Payment to the contractor by the city shall be authorized only after the module has been delivered to and remains within the District of Columbia.

MEASURE AND PAYMENT: Each individual LED module will be measured and paid at the contract unit price.

XVII. FURNISH AND INSTALL VEHICULAR OR PEDESTRIAN TRAFFIC SIGNAL HEAD ON ANY POLE:

Pay Item No.: 617 084, 617 086, 617 114

After receiving the Engineer's approval of catalog cuts, the contractor shall procure vehicle and/or pedestrian signal head housings conforming to the technical specifications contained in the Appendix and upper and lower mounting brackets and hardware as described herein. The work described herein is closely associated with that described in Special Provision No.

52, FURNISH AND INSTALL ELECTRICAL CABLE FOR TRAFFIC SIGNALS. The work to be performed is as follows:

- The contractor shall procure materials described above.
- The contractor shall drill a hole in the pole at the point where the upper signal head mounting bracket is to be installed. The hole shall be approximately one inch in diameter, and edges shall be machined to remove burrs which may snag cable.
- The contractor shall prepare the signal head for attachment to the pole prior to arriving in the field at the intersection. The contractor shall construct each signal head as described in the traffic signal sequence of operation. The appropriate LED modules shall be inserted and affixed into the housing and wired to the signal head terminal block, in accordance with manufacturer's instructions. Tunnel visors may be attached at this time or after the signal head is erected.
- Pole mounted one, two, three, four and five section signal heads shall feature sections mounted vertically one about the other. Connections between signal head sections shall be watertight and contain an opening through which cable can pass.
- Pole mounted signal heads shall be outfitted with upper and lower mounting brackets. This assembly shall feature serrated locking washers at the signal head to prevent misalignment. This assembly shall be attached to the signal head and to the pole such that a watertight barrier results. This shall be accomplished through the use of washers and/or sealing compound at the pole. The assembly shall consist of 1 1/2 inch diameter steel tubes (nipples) threaded to fit into the pole plate and into the 90 degree ell leading to the signal head. The other end of the assembly shall be affixed to a universal pole plate into which the 1 1/2 inch diameter steep nipple can be screwed. The universal pole plate may be constructed from cast aluminum and shall be structured to accept I inch wide stainless steel banding strapping above and below the nipple where the plate sits next to the pole. The 1 ½ inch steel nipple shall be of sufficient length and configuration to match the hardware arrangement of this signal display being replaced and to situate the signal head equidistant from the pole as the signal display being replaced.
- The field cable protruding through the hole in the pole is to be carefully routed through the mounting hardware into the signal head and connected to the proper terminals in the terminal block of the signal head. The contractor shall make the proper electrical connections of the field cable to the terminal block and ascertain that the connections are secure and consistent with the approved traffic

signal sequence of operation. The field cable shall be fitted with terminal lugs for attachment to the terminal block.

- The contractor shall mount the signal head assembly to the pole after carefully aligning the universal pole plate to the pole without damaging or crimping field cable. Each new signal head will be mounted so that the bottom of the signal head is at a height above grade equal to the signal head being replaced. The universal pole plate shall be affixed to the pole utilizing 1 inch wide stainless steel banding strapping two points on each pole plate, one above and one below where the nipple screws into the pole plate. The mounting shall be accomplished with banding tools specifically intended for securing banding strapping and with standard tools.
- The contractor shall ensure a secure fit of the assembly and confirm that the signal head operates in compliance with the approved traffic signal sequence of operation.

MEASURE AND PAYMENT: Each individual traffic signal head installed will be paid at the contract unit price. The price will include the signal head housing, the upper and lower mounting brackets, universal pole plate, all

miscellaneous hardware including terminal lugs, tunnel visors, stainless steel banding materials, and all labor, equipment and materials. The price shall also include insertion, affixing and wiring of the LED module into the signal head. The cost of the LED module is not included in this pay item, as it was previously covered in Special Provision No. 61.

XIX. INSTALL ACCESSIBLE PEDESTRIAN SIGNAL (APS) SYSTEM:

Pay Item Number 617 117, 617 119

The contractor shall furnish all labor, materials and equipment necessary to nstall an Accessible Pedestrian Signal (APS) System at signalized intersections in the District of Columbia. The APS System shall include a pole mounted push button wired directly to a control unit mounted in the pedestrian signal head serviced by that particular unit. The APS pedestrian push button is wired to the traffic signal controller using 4 Conductor, 18 AWG shielded, stranded electrical cable.

The District of Columbia's traffic signal system features the Type 170E controller with the Model 336S and Model 336SS cabinets. The control unit must be located in the pedestrian signal head rather than the cabinet because there is not enough room in the cabinet to house this device.

The Appendix to this contract contains an APS Installation Materials List and a product specification within an operations manual. The pole mounted pedestrian push button assembly shall feature a locator tone with a variable volume automatically set by ambient noise. The verbal message to the pedestrian shall emanate from the push button assembly. The contractor shall procure one configurator for each one hundred (100) APS push button assemblies ordered. The manufacturer shall program the verbal message to DDOT satisfaction. The contractor shall coordinate the precise wording of the verbal message for pedestrians with the manufacturer.

The contractor shall be responsible for delivering a fully operational system at each signalized intersection. The contractor shall also submit to DDOT all warranty documents and operating manuals for the products.

MEASURE AND PAYMENT: Each individual APS pole mounted unit and each individual APS control unit will be paid at the contract unit price. The price shall include the unit, mounting hardware, programming, electrical cable between the pole mounted push button and the control unit, and all labor, equipment and materials required to install the equipment, make all electrical connections, adjust sound levels and operating patterns and clean up the work site to the satisfaction of the Engineer.

XX. FURNISH AND INSTALL MAGNETIC SENSOR DETECTORS

Pay Item No.: 617 170

This work shall consist of furnishing and installing a two-way wireless, battery-powered magnetometer vehicle detector unit, as specified and as approved by the Engineer. This work shall include all necessary hardware to install the units within any roadway surface (asphalt or concrete) and to convey the data to either an Access Point (AP) or Repeater (RP) (paid for separately).

Specifications

The two-way wireless battery-powered magnetometer vehicle detector shall consist of the following:

Battery-powered sensors installed in-pavement in each traffic lane, which can be programmed to eliminate surrounding natural or man-made magnetic forces as to not interfere with its operation. Each sensor shall transmit its detection data within 150 ms of a detected event.

Access Points (AP) mounted on the side of the roadway may be utilized as the communications hub for the installation, in addition to its collection and processing functions.

Repeaters (RPs) mounted on the side of the roadway, could be utilized to extend the radio range of an AP.

Each sensor shall communicate by radio to a nearby AP or RP. Interface between an AP and a modem uses an Ethernet communication cable (CAT-5E). Software to control and configure the sensors, APs, and RPs and to store and retrieve detection data.

Two-way wireless communications between the sensors and the AP or RP and between the RP and AP.

Create up to three (3) vehicle classifications, based on vehicle length.

Sensor Specification

Each sensor shall automatically re-transmit a detected event if no acknowledgement is received from the AP.

Each sensor may stop retransmission after 8 attempts. Each sensor shall transmit a unique identifying code.

Each sensor shall respond within 100 seconds when the AP is powered on.

Each sensor shall automatically recalibrate in the event of a detector lock.

Radio links between each sensor and AP or RP and between each RP and AP shall conform to the following:

The physical layer of the radio links (i.e., the over-the-air data rate(s), modulation type(s), forward error correction, bit interleaving, channel coding, and other aspects of the transmitted signal) shall conform to published standards (e.g., Institute of Electrical and Electronics Engineers (IEEE), International Telecommunication Union (ITU)-T).

The center frequencies, bandwidths, and transmit power levels of the radio links shall allow operation in an unlicensed frequency band. 16 frequency channels shall be employed by the sensors, APs, and RPs to avoid interference with other devices operating in the unlicensed band.

Frequency channels shall be user-configurable.

The link budget (i.e., transmit power plus transmit antenna gain plus receive antenna gain minus receive sensitivity, where receive sensitivity shall assume a 1% packet error rate) for all radio links shall be 93 dB or greater.

The maximum distance between a sensor installed at 5-inch depth to the bottom of the sensor in the roadway and an AP or an RP with a clear line-of-sight between devices shall be:

Maximum of 120 feet for an AP or RP installed and 22 feet above the roadway.
Maximum of 100 feet for an AP or RP installed and 20 feet above the roadway.
Maximum of 80 feet for an AP or RP installed and 18 feet above the roadway.
Maximum of 60 feet for an AP or RP installed and 16 feet above the roadway.

The maximum distance between an AP and an RP shall be at least 1000 feet when both units are installed 18 feet / 5.5 meters above the roadway and with a clear line-of-sight between devices.

The maximum distance between a sensor installed at *2.5"* depth in the roadway and an AP or an RP with a clear line-of-sight between devices shall be:

Maximum of 100 feet for an AP or RP installed and 16 feet above the roadway.
Maximum of 125 feet for an AP or RP installed and 18 feet above the roadway.
Maximum of 150 feet for an AP or RP installed and 20 feet above the roadway.
Maximum of 175 feet for an AP or RP installed and 22 feet above the roadway.

The maximum distance between an AP and an RP shall be at least 1000 feet / 300 meters when both units are installed 18 feet above the roadway and with a clear line-of-sight between devices.

All sensor components shall be contained within a single housing. The sensor housing shall conform to National Electrical Manufacturers

Association (NEMA) Type 6P and International Electrotechnical Commission (IEC) IP68 standards.

The sensor components shall be fully encapsulated within the housing to prevent moisture from degrading the components.

The sensor housing shall be capable of being installed' in a 4-inch / 10-cm diameter hole approximately 2.5-inches / 5.7 cm deep or 5 inches deep, as shown on the plans.

A sensor shall operate at temperatures from -37 'F /-38.3 C to+176 'F / +80 'C

A sensor shall be battery-powered with an average lifetime of ten (10) years when the sensor is configured for and operating under normal traffic conditions

Sensor Placement

Each sensor shall be installed in the roadway using the following procedure:

Core drilling the asphalt or concrete pavement to provide a 4" diameter hole, a minimum of 2.5- inches deep, or as deep as 5-inches, as shown on plan sheets. Add a one-quarter inch (1/4") layer of sand to cover the bottom of the hole.

The sensor shall be placed on top of this layer of sand, within a protective plastic housing in the correct orientation as clearly marked on the sensor and as approved by the manufacturer.

The sensor shall be fully encapsulated with the epoxy to the lip of the cored hole.

Each installation of a two-way Wireless Battery-Powered Magnetometer VDS shall consist of one or more sensors installed in the center of each traffic lane, avoiding sources of magnetic noise such as underground power cables,

manholes, underground metallic junction boxes and vaults, overhead high tension power cables, light rail or subway tracks, and power generation stations and sub-stations. Any sensors placed over a Metro subway line, shall be specially calibrated to account for this potential disturbance to the sensor. Upon calibration, the sensor shall operate as per the manufacturer's specifications.

The sensors shall be located as specified by the intersection plans. For count applications, sensors shall be placed in areas with minimum stop-and-go traffic flow.

Speed

At least two sensors are required in each lane to determine speed and direction separated according to the distances as shown in the plans.

Detection Data

If detection data is relayed to a central software system or central server, each installation of the two-way Wireless Battery-Powered Magnetometer VDS shall provide at least the following measurements, as required by the application:

Vehicle flow rate (count) per lane over a specific time interval.
Lane occupancy (percent) over a specified time interval.
Vehicle speed per lane (mph or kph) and Classification.

The time interval for measurements shall be configurable to including at least the following intervals: l 0 seconds, 30 seconds, 1 minute, 5 minutes, 15 minutes, I hour and 24 hours.

All sensor components shall have a minimum of a 2-year warranty that includes product defects in materials and workmanship under normal use from the date of acceptance. If a hardware
defect arises the manufacturer shall exchange the product with a product that is new or which has been manufactured from new or serviceable used parts and is at least functionally equivalent to the original product. A replacement product or part, including a user-installable part that has
been installed in accordance with instructions provided by the manufacturer, assumes the remaining warranty of the original product

or ninety (90) calendar days from the date of replacement or repair, whichever provides longer coverage.

During the warranty period, technical support shall be available tram the supplier via telephone within 24 hours of the time a call is made by a user, where this support shall be provided by factory-authorized personnel or factory-authorized installers.

Measure and Payment: Each sensor shall be paid for at the contract unit price of each. The price shall include the cost of the sensor and all required labor equipment and materials to install the sensor in the field and render the traffic VDS operational. This work includes all coring, sensor setting, epoxy till, sensor calibration, testing, and furnishing documentation to complete the work.

XXII. FURNISH AND INSTALL SENSOR ACCESS POINT ON ANY POLE

Pay Item No.: 617 172

This work shall consist of the Contractor furnishing and installing a sensor access point onto a metal overhead lighting pole, traffic signal pole, or mast arm, as specified and as approved by the Engineer. This work shall include all necessary hardware (including manufactures pole extension hardware) and electrical connections to install the units on an existing metal overhead lighting pole, traffic signal pole, or mast arm, pole and to run Category-Se (CAT-5e) cable (paid for as part of this item) to convey the data from the access point to a traffic counter control cabinet. This work also includes the trimming of any tree limbs or branches to provide a clear line of sight between the sensor repeater and the access point or another sensor repeater or sensors.

Specifications
Access Point ("1P)
An AP shall support the relay of sensor detection data through several interfaces as required by the application. As an option, detection data shall be communicated over TCP/IP via an integrated 10/100 BaseT Ethernet interface.

The AP shall be capable of simultaneously communicating detection data via the contact closure interface, optional Ethernet interlace, and optional cellular data modem interface.

Each sensor, AP shall be capable of accepting software and firmware upgrades.

The Wireless Battery-Powered Magnetometer VDS shall provide software operating on conventional notebook/portable PCs to support configuration of a sensor, configuration of an AP, configuration of an RP, and to store and retrieve detection data.

An AP shall support at least 48 sensors and shall be factory-configurable to support at least two (2) different power options: Isolated nominal 48 VDC (36-58 VDC) input, consuming a maximum of 3W and providing 1500 V isolation and 5 kV surge protection; via a non-isolated nominal 12 VDC (10-15 VDC) input, consuming a maximum of2W. The Contractor has the option of using a Power over Ethernet (POE) injector. The specific PoE shall be submitted to DDOT for approval before being utilized.

An AP shall operate at temperatures from -37 'F / -38.3 'C to +176 'F/ +80 'C and shall be contained within a single housing that conforms to NEMA Type 4X and IEC IP67 standards.

The Contractor shall provide all materials required to successfully install the Access Point unit onto an existing metal traffic signal pole, lighting pole and mast arm, as per the manufacturer's recommendations. The Contractor shall provide a weatherproof permanent name plate identification tag on every Access Point and Repeater Provide with their corresponding eight (8) digit number, as illustrated on the plan sheets. The identification tag shall be approved by DDOT prior to installation by the Contractor.

All sensor AP components shall have a minimum of a 2-year warranty that includes product defects in materials and workmanship under normal use from the date of acceptance. If a hardware defect arises the manufacturer shall exchange the product with a product that is new or which has been manufactured from new or serviceable used parts and is at least functionally equivalent to the original product. A replacement product or part, including a user-installable part that has been installed in accordance with instructions provided by the manufacturer, assumes the remaining warranty of the original product or ninety (90) calendar days from the date of replacement or repair, whichever provides longer coverage.

During the warranty period, technical support shall be available from the supplier via telephone within 24 hours of the time a call is made by a user, where this support shall be provided by factory-authorized personnel or factory-authorized installers.

Installation Coordination

The Contractor shall coordinate the installation of all Access Points onto a metal overhead lighting pole, traffic signal pole, or mast arm with the appropriate authority (PEPCO or DDOT) before any work begins. Failure to properly coordinate with PEPCO or DDOT, which lead to project delays, is the sole responsibility of the Contractor. The Department is not responsible for utility coordination between the Contractor and the utility company.

Measure and Payment: Each Access Point shall be paid for at the contract unit price of each. The price shall include the cost of the access point and all required labor equipment and materials to install the access point in the field (on an existing metal overhead lighting pole, traffic signal pole, or mast arm) and render the traffic VDS operational. This work includes all mounting hardware, wiring, electrical and data connection to the communication modem within the controller cabinet, calibration, testing, and furnishing documentation to complete the work.

XXIV. REMOVE ABANDONED STREET LIGHT OR TRAFFIC SIGNAL POLE FOUNDATION

Pay Item No: 618 126

The contractor shall supply all labor, equipment and materials necessary to remove the streetlight pole or traffic signal pole foundation.

The contractor shall remove the foundation completely. The Contractor shall seal the conduit, remove the anchor bolts and cut off the ground wire or rod. If the foundation is located within a dirt tree space, the contractor shall back till the excavation with dirt to grade. Where the foundation is located in a paved area the contractor shall backfill with dirt to within six (6) inches of grade and install a temporary asphalt patch.

All material removed shall become the property of the contractor and will be disposed of at no additional cost to the District.

MEASURE AND PAYMENT: The unit of measure will be each. Payment will be made at the contract unit price for each foundation removed. Payment will include all labor equipment, tools, materials and all incidentals, including clean up at the job site, necessary to complete the work specified herein.

XXVI. REMOVE TRAFFIC SIGNAL POLES AND TRAFFIC SIGNAL EQUIPMENT

Pay Item No.: 617 130

The contractor shall furnish all labor, materials, and equipment necessary to remove metal traffic signal poles, transformer bases, mast arms, vehicle and pedestrian signal heads, pedestrian push buttons, microwave vehicle detectors, electronic signs, cables, and other equipment related to the traffic signal plant. Work shall not be begun until the replacement traffic signal is in service and operational, and until electrical service has been provided to the new signal controller. The Engineer must be satisfied that the new signal controller is operating the required traffic signal sequence of operation before old equipment can be removed.

The contractor shall remove all existing traffic and pedestrian signal heads, pedestrian push buttons, microwave vehicle detectors and other devices hanging on the pole and return them to the District of Columbia. Care should be taken to avoid damaging these devices, as they can be reused. The contractor shall also remove all mounting hardware except stainless steel banding and return them to the District of Columbia.

The contractor shall remove the existing traffic signal poles and 8 foot long mast arms and return them to the District of Columbia. Poles and mast arms deemed by the Engineer to be reusable shall be cleaned and painted before storage.

Static metal signs shall be removed from poles only after the contractor has installed new replacement signs on the new poles.

Traffic signal equipment mounted on street light poles will be removed under this special provision.

The contractor shall remove all electrical cable between the previous controller cabinet foundation and each signal device. All cable is to be removed and discarded by the contractor.

The contractor shall clean up the area and ensure that all remnants of the former traffic signal including miscellaneous hardware are removed from the site.

MEASURE AND PAYMENT: The unit of measure will be the intersection. Payment will be made at the contract unit price without regard for the amount of materials to be removed from the intersection. Payment will include all labor, equipment, tools, materials, and all incidentals, including clean up at the job site and transportation of parts, necessary to complete the work specified herein.

72. U-CHANNEL SIGN POSTS: Item 620991

This S.P. modifies 620

(A) GENERAL –U-Channel Sign Posts shall be required for supporting permanent signage. Work includes furnishing and erecting the breakaway type posts at location shown on plans and/or as directed. The Steel Drive Posts shall weigh 3.0 lbs/ft. before punching and galvanizing. Posts shall be as manufactured in accordance with ASTM A-499, Grade 60 with a minimum yield strength of 60,000 psi. Galvanizing shall be in accordance with ASTM A-123. Posts shall be of the design as shown in the appendices of these specifications.

(B) CONSTRUCTION METHODS – Sleeves and PCC footings shall not be used for U-CHANNEL SIGN POSTS. All posts shall be set plumb at the proper spacing for mounting signs.

(C) MEASURE AND PAYMENT – The unit of measure for U-CHANNEL SIGN POSTS will be each. Payment for steel drive posts will be made at the contract unit price per each, which payment will include furnishing and erecting the sign posts, and all labor material, tools, equipment and incidentals needed to complete the specified work.

73. FEDERAL AID PROJECT SIGN: Item No. 620 040

This S.P. replaces 620.03

(A) GENERAL – The Contractor shall furnish, erect, maintain and remove as directed one Federal-Aid Project Sign at one end of the project under construction as shown on the detail drawing included in these SPECIAL PROVISIONS. The sign shall be installed at each project site undergoing continuous construction activities. Cost figures for insertion on signs, rounded to the nearest $ 1,000.00, will be provided by the Engineer. The Engineer shall also provide the name of the construction project and the U.S. route number.

The sign shall be four (4) feet x four (4) feet x three-quarter (3/4) inch exterior plywood, smooth sanded on one side. The sign will be mounted on two (2) four (4) inch x four (4) inch x twelve (12) foot posts (or approved alternate) at locations designated by the Engineer. Sign faces shall be painted with three (3) coats of outdoor white enamel; sign rear with one (1) coat of same enamel. Lettering shall be of silk screen enamel; black for all lettering; crimson red for the D.C. Logo.

(B) MEASUREMENT – The unit of measure for FEDERAL AID PROJECT SIGN will be per each sign furnished for the contract.

(C) PAYMENT – Payment for FEDERAL AID PROJECT SIGN will be made at the contract unit price per each, which price and payment will include labor, materials, equipment and incidentals necessary to furnish, erect, maintain and remove sign.

74. EROSION AND SEDIMENT CONTROL: Item 628 002

This S.P. modifies and supplements 107.17(A) and 628.

(A) GENERAL – Work under this item includes the application of approved measures throughout the life of the project to prevent sedimentation from the site to adjacent lands and roadways and to minimize siltation of all drainage structures.

The erosion and sediment control measures shall include, but are not limited to the use of sediment traps, filters, silt fence, fiber mats, netting and other methods as directed by the Engineer.

Standard details and specifications for Erosion and Sediment Control are included as part of the contract drawings. Additional drawings and details, which may be required, shall comply with D.C. Law 2-23 (Soil Erosion and Sediment Control Act) and be submitted for approval as SHOP DRAWINGS, subject to approval by the Engineer.

(B) MEASURE AND PAYMENT – No actual measure will be made. Payment for EROSION AND SEDIMENT CONTROL will be made at the contract lump sum price, which price and payment shall include all labor, materials, tools, equipment and incidentals necessary to complete the work as specified herein. Also included is the removal and disposal of all materials and restoration of the affected areas to the satisfaction of the Engineer.

APPENDIX A
EQUAL EMPLOYMENT OPPORTUNITY/AFFIRMATIVE ACTION REQUIREMENTS

EQUAL EMPLOYMENT OPPORTUNITY/AFFIRMATIVE ACTION REQUIREMENTS

AFFIRMATIVE ACTION PROGRAM:

Submission by the contractor and all subcontractors of an Affirmative Action Plan, is a requirement of this contract. These Affirmative Action Plans must be received by the Contracting Officer, Office of Contracting and Procurement, 55 M Street, S.E., 4th Floor, Washington, DC 20003 within five (5) working days subsequent to the bid opening. Failure to comply in a timely manner may render the bid non-responsible.

APPLICABILITY OF LAW REGARDING EQUAL EMPLOYMENT OPPORTUNITY

The Equal Employment Opportunity Provision of Section 230, Title 23, United States Code applies to this federally aided contract. Sections 102.04,103.02(E) and (H) of the Standard Specifications for Highways and Structures dated 2005, Revised 2007 do not apply. All references to Mayor's Order 85-85 should be disregarded.

APPRENTICESHIP PROGRAM

All prime Contractors and subcontractors who contract with the District of Columbia Government to perform construction or renovation work with a single contract or cumulative contracts of a least $500,000.00 let within a twelve (12) month period, shall be required to register an apprenticeship program with the District of Columbia Apprenticeship Council. (D.C. Code 36-404 (1988)).

APPRENTICES AND TRAINEES

This S.P. supplements APPRENTICES AND TRAINEES, Article 3 of STANDARD CONTRACT PROVISIONS FOR USE WITH SPECIFICATIONS FOR DISTRICT GOVERNMENT CONSTRUCTION PROJECTS, DATED 1973; as amended by the Transmittal Sheet No. 5.

(1) In Items A, B and C, except for subparagraph C5, wherever the words "Apprenticeship Council, DC Department of Labor" appear, add immediately after: "and/or U.S. Department of Labor."

The Contractor and all subcontractors shall furnish to the Contracting Officer written evidence of the registration of his/her program and apprentices as well as the appropriate ratios and wage rates for the areas of construction, prior to using any apprentice on the contract.

EMPLOYMENT OF THE HANDICAPPED:

The contractor and all subcontractors agree not to discriminate against any handicapped person who is qualified to perform the job and also agrees to take Affirmative Action to hire, recruit, train and upgrade qualified handicapped persons without discrimination.

UTILIZATION OF MINORITY BANKING INSTITUTIONS:

All prime and subcontractors are encouraged to use the services of banks and other financial institutions owned and controlled by minorities and females.

MONTHLY EQUAL EMPLOYMENT OPPORTUNITY UTILIZATION REPORTS:

Submission of Monthly Equal Employment Reports (Form AARU-102) to the Contracting Officer is a requirement of this contract. These reports are due on the last working day of each month at the following address:

District of Columbia Government
Department of Transportation
Office of Contracting and Procurement
55 M Street, S.E., 4th Floor
Washington, DC 20003

Prime contractors are responsible for timely submission of these reports from all their subcontractors. Failure to comply with this requirement may delay partial payment voucher processing.

APPENDIX B
MONTHLY EQUAL EMPLOYMENT OPPORTUNITY REPORT

CONTRACT NO.

DISTRICT DEPARTMENT OF TRANSPORTATION
MONTHLY EQUAL EMPLOYMENT OPPORTUNITY REPORT

REPORTING PERIOD
FROM / / TO: / /

This report is required by the District Department of Transportation pursuant to Equal Employment Opportunity requirements of the referenced contract. Failure to report may result in suspension of payments under this contract.

2. PROJECT NAME, LOCATION AND % COMPLETED
WARD_____%_____

3. CONTRACTOR'S NAME:

MINORITY [ ] NON-MIN [ ]
SUB [ ] PRIME [ ]

4. **CONTRACT AMOUNT**

$_____

5. CONSTRUCTION TRADE	Classifications	6. WORK-HOUR OF EMPLOYMENT										7. MINORITY PERCENTAGE	8. FEMALE PERCENTAGE	9. TOTAL NUMBER OF EMPLOYEES		10. TOTAL NUMBER OF MINORITY EMPLOYEES	
		6a. TOTAL ALL EMPLOYEE BY TRADE		6b. BLACK (Not of Hispanic Origin)		6c. HISPANIC		6d. ASIAN OR PACIFIC ISLANDERS		6e. AMERICAN INDIAN OR ALASKAN NATIVE							
		M	F	M	F	M	F	M	F	M	F			M	F	M	F
	Journey Worker																
	APPRENTICE																
	Helper/Laborer																
	SUB-TOTAL																
	Journey Worker																
	APPRENTICE																
	Helper/Laborer																
	SUB-TOTAL																
	Journey Worker																
	APPRENTICE																
	Helper/Laborer																
	SUB-TOTAL																
	Journey Worker																
	APPRENTICE																
	Helper/Laborer																
	SUB-TOTAL																
	Journey Worker																
	APPRENTICE																
	Helper/Laborer																
	SUB-TOTAL																
TOTAL JOURNEY WORKERS																	
TOTAL APPRENTICES																	
TOTAL HELPERS/LABORERS																	
GRAND TOTAL																	

11. COMPANY OFFICIAL'S SIGNATURE AND TITLE	12. TELEPHONE NUMBER (Include area code)	13. DATE SIGNED	14. PAGE 1 OF 2

FORM AARO-122 (040494) R (Revised 07/02)

PLEASE TYPE OR LEGIBLY PRINT ALL INFORMATION

INSTRUCTIONS FOR FILING MONTHLY EQUAL EMPLOYMENT OPPORTUNITY REPORT (AARU-102)

The Monthly Equal Employment Opportunity Report is to be completed by each subject contractor (both prime and sub) and signed by a responsible official of the company. The reports are filed by the 5th day of each month during the term of the contract, and they shall include the total work-hours for each employee classification in each trade in the covered area for the monthly reporting period. The prime contractor shall submit this report for each project work force and collect and submit reports for each subcontractor's project work force to the Contracting Officer, Department of Transportation. Additional copies of this form may be obtained from the Department of Transportation, Telephone No. 202/671-2270.

Compliance Agency	D. C. Government agency assigned responsibility for equal opportunity. (Secure this information from the contracting agency responsible for the construction project.)
Contracting Agency	D. C. Government agency funding project (in whole or in part). If more than one agency, list all.
Contractor	Any contractor who has a construction contract with D. C. Government or a contract funded in whole or in part with D. C. Government funds.
Minority	Includes Blacks, Hispanics, American Indians, Alaskan Natives, and Asian and Pacific Islanders--both men and women.
1. Reporting	Monthly, or as directed by the compliance agency, beginning with the effective date of the contract.
2. Project	Project name, location(s), contract number and percent completed. List ward in which project is located.
3. Contractor	Contractor's name and address. Check appropriate boxes--minority or non-minority, prime or sub.
4. Contracting Agency	Name(s) of contracting agency(s) funding or supervising project. List contract amount for each contract.
5. Construction Trade	Only those construction trades which contractor employs on this project.
6. Work-Hours of Employment(a-e)	a: The total number of male hours and the total number of female hours worked by employees in each classification. b-e: The total number of male hours and the total number of female hours worked by each specified group of minority employees in each classification.
Classification	The level of accomplishment or status of the worker in the trade (Journey Worker, Apprentice, Helper/Laborer).
7. Minority Percentage	The percentage of total minority work-hours of all work-hours (the sum of columns 6b, 6c, 6d, and 6e divided by column 6a; just one figure for each construction trade).
8. Female Percentage	For each trade the number reported in 6a, (F divided by the sum of the number of reported in 6a M and F).
9. Total Number of Employees	Total number of male and total number of female employees working in each classification of each trade in the contractor's project work force during reporting period.
10. Total Number of Minority Employees	Total number of male minority employees and total number of female minority employees working in each classification in each trade in contractor's project work force during reporting period.

APPENDIX C
SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES

APPENDIX A--SPECIAL PROVISIONS

SPECIFIC EQUAL EMPLOYMENT
OPPORTUNITY RESPONSIBILITIES

1. **General**

a. Equal employment opportunity requirements not to discriminate and to take affirmative action to assure equal employment opportunity as required by Executive Order 11246 and Executive Order 11375 are set forth in Required Contract Provisions (Form FHWA -1273 or 1316, as appropriate) and these Special Provisions which are imposed pursuant to Section 140 of Title 23, U.S.C., as established by Section 22 of the Federal-Aid Highway Act of 1968. The requirements set forth in these Special Provisions shall constitute the specific affirmative action requirements for project activities under this contract and supplement the equal employment opportunity requirements set forth in the Required Contract Provisions.

b. The contractor will work with the State highway agencies and the Federal Government in carrying out equal employment opportunity obligations and in the review of his/her activities under the contract.

c. The contractor and all his/her subcontractors holding subcontracts not including material suppliers, of $10,000 or more, will comply with the following minimum specific requirement activities of equal employment opportunity: (The equal employment opportunity requirements of Executive Order 11246, as set forth in Volume 6, Chapter 4, Section 1, Subsection 1 of the Federal-Aid Highway Program Manual, are applicable to material suppliers as well as contractors and subcontractors.) The contractor will include these requirements in every subcontract of $10,000 or more with such modification of language as is necessary to make them binding on the subcontractor.

2. **Equal Employment Opportunity Policy.** The contractor will accept as his/her operating policy the following statement which is designed to further the provision of equal employment opportunity to all persons without regard to their race, color, religion, sex or national origin, and to promote the full realization of equal employment opportunity through a positive continuing program:

It is the policy of this Company to assure that applicants are

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

3. **Equal Employment Opportunity Officer.** The contractor will designate and make known to the State highway agency contracting officers and equal employment opportunity officer (hereinafter referred to as the EEO Officer) who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of equal employment opportunity and who must be assigned adequate authority and responsibility to do so.

4. **Dissemination of Policy**

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

      (1) Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's equal employment opportunity policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

      (2) All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer or other knowledgable company official, covering all major aspects of the contractor's equal employment opportunity obligations within thirty days following their reporting for duty with the contractor.

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

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

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

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

5. **Recruitment**

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

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

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

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

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

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

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

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

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

7. **Training and Promotion.**

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

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs,

i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event the Training Special Provision is provided under this contract, this subparagraph will be superseded as indicated in Attachment 2.

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

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

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

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

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

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

d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the

collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, or national origin; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The U.S. Department of Labor has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the State highway agency.

9. **Subcontracting**

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

b. The contractor will use his best efforts to ensure subcontractor compliance with their equal employment opportunity obligations.

10. **Records and receipts**

a. The contractor will keep such records as are necessary to determine compliance with the contractor's equal employment opportunity obligations. The records kept by the contractor will be designed to indicate:

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

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

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

(4) The progress and efforts being made in securing the services of minority group subcontractors or

subcontractors with meaningful minority and female representation among their employees.

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

c. The contractors will submit an annual report to the State highway agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form PR 1391. If on-the-job training is being required by "Training Special Provision", the contractor will be required to furnish Form FHWA 1409.

(40 FR 28053, July 3, 1975, as amended at 43 FR 19386, May 5, 1978. Correctly redesignated at 46 FR 21156, April 9, 1981.)

Revised 8/88

APPENDIX D
GENERAL WAGE RATE DETERMINATION

General Decision Number: DC130001 08/23/2013 DC1

Superseded General Decision Number: DC20120001

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	01/04/2013
1	01/18/2013
2	01/25/2013
3	02/22/2013
4	05/10/2013
5	06/07/2013
6	06/21/2013
7	06/28/2013
8	07/05/2013
9	07/12/2013
10	08/02/2013
11	08/09/2013
12	08/23/2013

ASBE0024-001 10/01/2012

	Rates	Fringes
Asbestos Worker/Heat and Frost Insulator Includes the application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems	$ 33.13	13.60

ASBE0024-002 10/01/2012

	Rates	Fringes
HAZARDOUS MATERIAL HANDLER Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials, whether they contain asbestos or not, from mechanical systems	$ 20.86	5.61

ASBE0024-005 10/01/2012

	Rates	Fringes
Fire Stop Technician	$ 26.06	6.05

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 pasage of fire, smoke of 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.

BOIL0193-001 10/01/2009

	Rates	Fringes
Boilermakers:	$ 37.66	16.36

BRDC0001-001 04/30/2013

	Rates	Fringes
Bricklayer	$ 28.17	8.03

BRMD0001-004 04/29/2013

	Rates	Fringes
BRICKLAYER		

Refractory (Firebrick).....	$ 35.52	8.24

CARP0132-001 05/01/2013

	Rates	Fringes
Carpenter/Lather.....	$ 26.81	8.13
Piledriver.....	$ 26.62	8.15

CARP1831-001 04/01/2012

	Rates	Fringes
MILLWRIGHT.....	$ 27.96	12.20

CARP2311-002 05/01/2013

	Rates	Fringes
DIVER TENDER.....	$ 29.00	8.15
DIVER.....	$ 37.74	8.15

ELEC0026-001 06/03/2013

	Rates	Fringes
Electricians.....	$ 40.65	14.42

ELEC0026-008 07/01/2003

	Rates	Fringes
Motor Repairmen		
Removal and reinstallation of electrical motors.....	$ 23.69	7.73+3%+a

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.

ELEC0070-001 05/06/2013

	Rates	Fringes
Line Construction:		
Cable Splicers	$ 33.00	19%+5.00
Equipment Operators	$ 33.00	19%+5.00
Groundman	$ 15.35	19%+5.00
Linemen	$ 33.00	19%+5.00
Truck Driver	$ 17.45	19%+5.00

ENGI0077-001 05/01/2013

	Rates	Fringes
Power equipment operators: (HEAVY AND HIGHWAY CONSTRUCTION)		
GROUP 1	$ 33.96	8.45+a+b
GROUP 2	$ 32.89	8.45+a+b
GROUP 3	$ 32.40	8.45+a+b
GROUP 4	$ 31.65	8.45+a+b
GROUP 5	$ 29.50	8.45+a+b
GROUP 6	$ 24.68	8.45+a+b
GROUP 7	$ 34.34	8.45+a+b

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Tower Cranes and Cranes 100 ton and over.

GROUP 2: 35 ton cranes & above, tower & climbing cranes, derricks, concrete boom pump, drill rigs (equivalent to L & Double L), mole.

GROUP 3: 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 4: 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 5: 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 6: Fork lifts, ditch witch, bobcat 1/3 cu. yd. and below, space heaters, sweepers, assistant engineers, oilers.

GROUP 7: 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 crane and cranes 100-ton and over to receive $1.00 per hour premium over Group One.

ENGI0077-002 06/01/2013

	Rates	Fringes
Power equipment operators: (PAVING AND INCIDENTAL GRADING)		
GROUP 1	$ 27.49	7.00
GROUP 2	$ 24.50	7.00
GROUP 3	$ 21.04	7.00
GROUP 4	$ 18.95	7.00
GROUP 5	$ 28.15	6.80

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Gradall operator, Crane.

GROUP 2: Boom Truck, Milling Machine, Excavator, Rubber Tire Backhoe, Asphalt Paver, Asphalt Plant Engineer, Motor Grader, Track Loader, Rubber Tire Loader, Track Dozer, Concrete Paver.

GROUP 3: Broom Truck, Asphalt Roller.
GROUP 4: Air Compressor, Grade Rollers.
GROUP 5: Mechanic.

ENGI0077-003 07/01/2013

	Rates	Fringes
Power equipment operators: (SEWER, GAS AND WATER LINE CONSTRUCTION)		
GROUP 1	$ 24.30	7.15+a
GROUP 2	$ 23.90	7.15+a
GROUP 3	$ 23.39	7.15+a
GROUP 4	$ 23.07	7.15+a
GROUP 5	$ 22.25	7.15+a

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Excavators, Cranes, Gradalls.

GROUP 2: Backhoes, Front-end Loaders, Fork alift/Lull, Bulldozers, Motor Graders. Qualified Mechanics, Hydraulic Tamper and Hoe Pack, Paving Mixers, Pile Driving Engines, Batch Plant, Concrete Pumps, Low-Boy Driver, Lube Truck.

GROUP 3: Trenching Machine, Well Drilling Machines, Concrete Mixers, Motor Graders, Truck Driver.

GROUP 4. Roller, Air Compressors, Pumps, Welding Machines, Well Points, Firemen.

GROUP 5: Oiler

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 06/01/2013

	Rates	Fringes
Ironworkers:		

Structural, Ornamental and Chain Link Fence	$ 30.00	16.04

IRON0201-001 05/01/2012

	Rates	Fringes
Ironworkers:		
Reinforcing	$ 26.50	16.68

LABO0657-003 06/01/2012

	Rates	Fringes
Laborers: (HEAVY AND HIGHWAY AND SEWER & WATER LINES CONSTRUCTION)		
GROUP 1	$ 22.23	6.83
GROUP 2	$ 22.59	6.83
GROUP 3	$ 22.79	6.83
GROUP 4	$ 22.96	6.83
GROUP 5	$ 23.45	6.83
GROUP 6	$ 24.08	6.83
GROUP 7	$ 24.68	6.83
GROUP 8	$ 25.49	6.83

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 bucker 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 nozzleman, asphalt raker, asphalt tamper, form setter, demolition torch operator, shotcrete nozzlemen 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 06/01/2012

	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	$ 18.21	6.83
Skilled Toxic and Hazardous Waste Removal Laborers	$ 21.53	6.83

LABO0657-005 06/01/2012

	Rates	Fringes
Laborers: (TUNNEL, RAISE & SHAFT (FREE AIR) FOR HEAVY AND SEWER & WATER LINES CONSTRUCTION)		
GROUP 1	$ 23.04	6.83
GROUP 2	$ 23.77	6.83
GROUP 3	$ 25.61	6.83
GROUP 4	$ 26.40	6.83

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 06/01/2012

	Rates	Fringes
Laborers: (TUNNEL, RAISE AND SHAFT (COMPRESSED AIR) FOR HEAVY CONSTRUCTION ONLY		
Gauge Pressure (Pounds) / Work Period (Hours)		
1-14 / 7	$ 30.32	6.83
14-18 / 6	$ 35.66	6.83

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

LABO0657-007 06/01/2010

	Rates	Fringes
Laborers: (PAVING AND INCIDENTAL GRADING)		
Asphalt Raker & Concrete Saw Operator	$ 18.42	4.90
Asphalt Shoveler	$ 17.84	4.90
Asphalt Tammer & Concrete Shoveler	$ 18.09	4.90
Jack Hammer	$ 18.51	4.90
Laborer	$ 17.70	4.90
Sand Setter & Form Setter	$ 19.10	4.90

LABO0657-008 06/01/2012

	Rates	Fringes
LABORERS (BRICK MASONRY WORK)		
Mason Tenders	$ 15.58	6.83
Scaffold Builders, Mortarmen	$ 16.51	6.83

MARB0002-003 05/01/2012

	Rates	Fringes
Marble & Stone Mason Includes Pointing, Caulking and Cleaning of All Types of Masonry, Brick, Stone and Cement Structures	$ 33.08	14.59

MARB0003-001 05/01/2011

	Rates	Fringes
Mosaic & Terrazzo Worker, Tile Layer		
Marble Mason and Tile Layer	$ 25.29	9.89
Terrazzo Worker	$ 26.04	9.89

MARB0003-004 05/01/2011

	Rates	Fringes
Marble, Tile & Terrazzo Finisher	$ 20.48	8.74

PAIN0051-001 06/01/2013

	Rates	Fringes
Painters:		
All Industrial Work	$ 29.18	8.91
Bridges, Heavy Highway, Lead Abatement and Flame/Thermal Spray	$ 32.66	8.91
Commercial and Mold Remediation, Painters, Wallcovers and Drywall Finishers	$ 24.89	8.91
Metal Polishing and Refinishing	$ 25.89	8.91

PLAS0891-001 05/01/2010

	Rates	Fringes
Cement Masons:		
HEAVY CONSTRUCTION ONLY	$ 27.15	9.58

PLAS0891-002 06/01/2011

	Rates	Fringes
Cement Masons: (PAVING & INCIDENTAL GRADING)		
Cement Masons	$ 19.56	5.68
Concrete Saw Operators	$ 19.56	5.68
Form Setters	$ 19.56	5.68

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* PLUM0005-001 08/01/2013

	Rates	Fringes
Plumbers	$ 38.17	16.25+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 08/01/2012

	Rates	Fringes
Steamfitter, Refrigeration & Air Conditioning Mechanic	$ 37.62	18.07+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 07/01/2013

	Rates	Fringes
Sheet Metal Worker	$ 39.93	15.38

TEAM0639-001 06/01/2012

	Rates	Fringes
Truck drivers: (HEAVY & HIGHWAY CONSTRUCTION)		
Tractor trailer, Low Boy	$ 21.50	2.00+a
Truck Drivers	$ 19.50	2.00+a

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

TEAM0639-005 06/01/2012

	Rates	Fringes
Truck drivers: (PAVING & INCIDENTAL GRADING)		
All paving projects where the grading is incidental		

to the paving.....$ 19.50 2.00

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)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters , PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable , i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

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

APPENDIX E
TRAINING SPECIAL PROVISIONS

APPENDIX E - - TRAINING SPECIAL PROVISIONS

This Training Special Provision supersedes subparagraph 7b of the Special Provision entitled Specific Equal Employment Opportunity Responsibilities, (Appendix A), and is in implementation of 23 U.S.C. 140(a).

As part of the Contractors equal employment opportunity affirmative action program training shall be provided as follows:

The Contractor shall provide on-the-job training aimed at developing full journeyworkers in the type of trade or job classification involved.

The number of trainees to be trained under the special provision will be **2**.

In the event that a Contractor subcontracts a portion of the contract work, he/she shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided, however, that the Contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The Contractor shall also ensure that this training special provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the contractors needs and the availability of journeyworkers in the various classifications with a reasonable area of recruitment. Prior to commencing construction, the Contractor shall submit to the State highway agency for approval the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the Contractor shall specify the starting time for training in each of the classifications. The Contractor will be credited for each trainee employed by him/her on the contract work that is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeyworker status is a primary objective of this Training Special Provision. Accordingly, the Contractor shall make every effort to enroll minority trainees and women (e.g., by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent that such persons are available within a reasonable area of recruitment. The Contractor will be responsible for demonstrating the steps that he/she has taken in pursuance thereof, prior to a determination as to whether the Contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employee as a trainee in any classification in which he/she has successfully completed a training course leading to journeyworker status or in which he/she has been employed as a journeyworker. The Contractors should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the Contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the Contractor and approved by the State highway agency and the Federal Highway Administration. The State highway agency and the Federal Highway Administration shall approve a program if is reasonably calculated to meet the equal employment opportunity obligations of the Contractor and to qualify the average trainee for

journeyworker status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the US Department of Labor, Bureau of Apprenticeship and Training or with a State Apprenticeship Agency recognized by the Bureau and Training programs approved but not necessarily sponsored by the US Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training or oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the division office. Some off-site training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

The Contractor will be reimbursed in the amount indicated in the unit price column of the Pay Item Schedule in the Bid Form and Proposals for each hour of training given an employee on this contract in accordance with an approved training program. As verified by the engineer, reimbursement will be made even though the Contractor receives additional training program funds from other sources, provided such other does not specifically prohibit the Contractor from receiving other reimbursement. Reimbursement for off-site training indicated above may only be made to the Contractor where he/she does one or more of following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainees wages during the off-site training period.

No payment shall be made to the Contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyworker, is caused by the Contractor and evidences a lack of good faith on the part of the Contractor in meeting the requirements of this Training Special Provision. It is normally expected that a trainee will begin his/her training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his/her work classifications or until he/she has completed his training program. It is not required that all trainees be on board for the entire length of the contract. A Contractor will have fulfilled his/her responsibilities under this Training Special Provision if he/she has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyworkers rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Department of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The Contractor shall furnish the trainee a copy of the program he/she will follow in providing the training. The Contractor shall provide each trainee with a certification showing the type and length of training satisfactorily completed.

The Contractor will provide for the maintenance of records and furnish period reports documenting his/her performance under this Training Special Provision.

(40 FR 28053, July 3, 1975. Correctly redesignated at 46 FR 21156, April 9, 1981.)

Revised 8/88

APPENDIX F
EMPLOYEE TRAINING REQUIREMENTS

EMPLOYEE TRAINING REQUIREMENTS

23 CFR, Part 230, Subpart A, Appendix B applies to this contract, except as modified below. Prior to commencing, the contractor shall submit to the DC Department of Transportation Contracting Officer for approval, the number of trainees to be trained in each selected and classification and providing the prospective trainee's home address(es) and social security number(s). The number of trainees to be trained under this contract is (1) shall be in the following classifications:

CRAFT	NUMBER
LABORER	1

The minimum length and type of training for each classification will be as established in the training program selected by the contractor and approved by the Contracting Officer, DC Department of Transportation and the Division Engineer, Federal Highway Administration.

For purposes of this requirement, a trainee is defined as a person who is registered and receiving on-the-job training in a construction or construction management occupation under a program which has been approved and certified in advance by the U.S. Department of Labor, Employment and Training Administration or by the Division Engineer, Federal Highway Administration.

A trainee differs from an apprentice in that an apprentice means (1) a person employed and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or (2) a person in the first 90 days of probationary employment in an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where applicable) to be eligible for probationary employment as an apprentice.

Contractors are encouraged to utilize the resources of the District of Columbia, Department of Employment Services, Employer Services Center and the District of Columbia, Department of Transportation to recruit and hire prospective trainees. Prospective trainees who are not enrolled in any approved program may be selected from among the contractor's construction workforce, subject to the approval of the Contracting Officer.

The District Department of Transportation-Construction Contract Branch will monitor your training program closely during the life of the project to ensure that the training program is being administered in compliance with the applicable Federal regulations and that the assigned number of trainees are enrolled and receiving

training. Contractors are reimbursed only for training actually given and carefully documented by the Project Engineer and verified by the District Department of Transportation-Construction Contract Branch.

APPRENTICESHIP PROGRAM:

All prime Contractors and subcontractors who contract with the District of Columbia Government to perform construction or renovation work with a single contract or cumulative contracts of at least $500,000.00, let within a twelve (12) month period, shall be required to register and apprenticeship program with the District of Columbia Apprenticeship Council. (D.C. Code 36-409((1981)).

APPRENTICES AND TRAINEES:

This S.P. supplements APPRENTICES AND TRAINEES, ARTICLE 3 of STANDARD CONTRACT PROVISIONS FOR USE WITH SPECIFICATIONS FOR DISTRICT GOVERNMENT CONSTRUCTION PROJECTS, DATED 1973; as amended by the Transmittal Sheet No. 5.

(1) In Items A, B and C, except for subparagraph C5, wherever the words "Apprenticeship Council, D.C. Department of Labor" appear, add immediately after: "and/or U.S. Department of Labor."

(2) In Item B. Trainees, add the following: "Training programs approved under the requirements of Article IV; Section 4 and 5 of Required Contract Provisions, Federal Aid Construction Contracts (Form FHWA-1273) will satisfy the requirements of this item.

The contractor and all subcontractors shall furnish to the Contracting Officer written evidence of the registration of his/her program and apprentices as well as the appropriate ratios and wage rates for the areas of construction, prior to using any apprentice on the contract.

APPENDIX G
PARTICIPATION BY DISADVANTAGED BUSINESS ENTERPRISE AND NON-DISADVANTAGED BUSINESS ENTERPRISE FIRMS

PARTICIPATION BY DISADVANTAGED BUSINESS ENTERPRISE AND NON-DISADVANTAGED BUSINESS ENTERPRISE FIRMS

Policy: The District Department of Transportation (DDOT) has established a Disadvantaged Business Enterprise (DBE) program in accordance with regulations of the U.S. Department of Transportation (DOT), 49 CFR Part 26. The District Department of Transportation (DDOT) has received Federal financial assistance from the Department of Transportation, and as a condition of receiving this assistance, the District Department of Transportation (DDOT) has signed an assurance that it will comply with 49 CFR Part 26.

It is the policy of the District Department of Transportation (DDOT) to ensure that DBEs are defined in part 26, have an equal opportunity to receive and participate in DOT-assisted contracts. It is also our policy:

- To ensure nondiscrimination in the award and administration of DOT - assisted contracts;
- To create a level playing field on which DBEs can compete fairly for DOT-assisted contracts;
- To ensure that the DBE Program is narrowly tailored in accordance with applicable law;
- To ensure that only firms that fully meet 49 CFR Part 26 eligibility standards are permitted to participate as DBEs;
- To help remove barriers to the participation of DBEs in DOT assisted contracts;
- To assist the development of firms that can compete successfully in the market place outside the DBE Program.

Lisa Gregory, Esq., Chief Office of Civil Rights has been delegated as the DBE Liaison Officer. In that capacity, the Chief Office of Civil Rights is responsible for implementing all aspects of the DBE program. Implementation of the DBE program is accorded the same priority as compliance with all other legal obligations incurred by the District Department of Transportation (DDOT) in its financial assistance agreements with the U.S. Department of Transportation.

The District Department of Transportation (DDOT) has disseminated this policy statement to the DDOT's Executive Team and all of the components of our organization. We have distributed this statement to DBE and non-DBE business communities that perform work for us on DOT-assisted contracts on The District Department of Transportation (DDOT) website and on the agency bidders' document.

Sincerely,

Terry Bellamy
Director, District Department of Transportation

Definitions -The following definitions apply to this contract:

A. **"Disadvantaged business"** means a small business concern, (a) which is at least fifty-one percent (51%) owned by one or more socially and economically disadvantaged individuals or in the case of any publicly owned business, at least fifty-one percent (51%) of the stock of which is owned by one or more socially and economically disadvantaged individuals; and (b) whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it.

B. **"Small business concern means**", with respect to firms seeking to participate as DBEs in DOT-assisted contracts, a small business concern as defined pursuant to section 3 of the Small Business Act and Small Business Administration regulations implementing it (13 CFR part 121) that also does not exceed the cap on average annual gross receipts specified in § 26.65(b).

C. Socially and economically disadvantaged individual means any individual who is a citizen (or lawfully admitted permanent resident) of the United States and who is—

- Any individual who a recipient finds to be a socially and economically disadvantaged individual on a case-by-case basis.

- Any individual in the following groups, members of which are rebuttably presumed to be socially and economically disadvantaged:

- "Black Americans," which includes persons having origins in any of the Black racial groups of Africa;

- "Hispanic Americans," which includes persons of Mexican, Puerto Rican, Cuban, Dominican, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race;

- "Native Americans," which includes persons who are American Indians, Eskimos, Aleuts, or Native Hawaiians;

- "Asian-Pacific Americans," which includes persons whose origins are from Japan, China, Taiwan, Korea, Burma (Myanmar), Vietnam, Laos, Cambodia (Kampuchea), Thailand, Malaysia, Indonesia, the Philippines, Brunei, Samoa, Guam, the U.S. Trust Territories of the Pacific Islands (Republic of Palau), the Commonwealth of the Northern Marianas Islands, Macao, Fiji, Tonga, Kiribati, Juvalu, Nauru, Federated States of Micronesia, or Hong Kong;

- "Subcontinent Asian Americans," which includes persons whose origins are from India, Pakistan, Bangladesh, Bhutan, the Maldives Islands, Nepal or Sri Lanka;
- Women;

- Any additional groups whose members are designated as socially and economically disadvantaged by the SBA, at such time as the SBA designation becomes effective.

The Contracting Officer shall make a rebuttable prerogative that individuals in the above groups are socially and economically disadvantaged. This prerogative shall be based on criteria set forth in 49 CFR Part 26. The Contracting Officer also may determine, on a case-by-case basis, that individuals who are not members of one of the above groups are socially and economically disadvantaged.

Prompt Payment: The prime contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than ***no later than 7 days*** from the receipt of each payment the prime contract receives from The District Department of Transportation (DDOT) .The prime contractor agrees further to return retainage payments to each subcontractor within ***no later than 7 days*** after the subcontractors work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the DDOT. This clause applies to both "DBE and non-DBE subcontracts." ***Failure to do so shall be a ground for appropriate action against the party involved (e.g.: findings of non-responsibility for future contracts and/or suspension and debarment).***

To obtain additional information on DBE Compliance, please contact the Office of Civil Rights

Mohammed Kabir, PHR/Sr. EO Local and Federal Compliance Officer
Office of Civil Rights
District Department of Transportation
55 M Street, SE, 3rd floor
Washington, DC 20003
(202) 299-2190
Mohammed.Kabir@dc.gov

CONTRACT ASSURANCE /CONTRACT GOALS:

CONTRACT ASSURANCE

The Contractor, Sub-recipient, Sub-consultant or Subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out all the applicable requirements of 49 C.F.R. Part 26 in the award and administration of USDOT-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as DDOT deems appropriate.

Furthermore, Title VI of the Civil Rights Act of 1964 assures that no person or group of persons may, on the grounds of race, color, national origin, sex, age, handicap or disability, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any and all programs or activities administered by DDOT. For further information regarding Title VI, please contact the Office of Civil Rights, 55 M Street S.E. 3rd Floor. Washington, DC 20003. Our telephone number is: (202) 299-2190

The above information is applicable to every Contractor including every tier of sub-consultants, subcontractors, supplier or service providers on this project. It is the responsibility of the prime Contractor, and all sub-consultants, subcontractors, suppliers and service providers to ensure equal opportunity for all firms to participate on this project.

Contract Goals:

The bidder shall subcontract _____of the dollar value of the total amount of this DOT-assisted contract to qualified DBE subcontractors. A complete DBE plan containing a list of DBE firms to be utilized on this project or documentation demonstrating good faith efforts to meet the goal on this project must be submitted within five (5) working days subsequent to bid opening to:

DDOT
Office of Contracting and Procurement
55 M Street S.E. 7th Floor
Washington, DC 20003

Because a DBE contract goal has been established for this contract, only bidders who demonstrate good faith efforts to meet this goal will be considered responsive by doing either of the following:

(A) Providing a DBE Plan that includes documentation that it has obtained enough DBE participation to meet the goal; or
(B) Providing documentation that it has made adequate good faith efforts to meet the goal, even though it did not succeed.

(A) DBE Plan shall include, but is not limited to the following:

- The names and addresses of DBE firms that will participate in the contract;
- A description of the work that each DBE will perform;
- The dollar amount of the participation of each DBE firm participating;
- Written documentation of the bidder/offeror's commitment to use a DBE subcontractor whose participation it submits to meet a contract goal;
- Written confirmation from the DBE that it is participating in the contract as provided in the prime contractor's commitment; and
- If the contract goal is not met, evidence of good faith efforts, as described below shall be submitted.

(B) Documentation of Adequate Good Faith Efforts Bidders who are unable to document that it has obtained enough DBE participation to meet the goal, must provide documentation showing that it made adequate good faith efforts to meet the goal, even though it did not succeed.
Demonstrating good faith efforts means that the bidder must show that it took all necessary and reasonable steps to achieve a DBE goal or other requirement of this part which, by their scope, intensity, and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not fully successful.

The following is a list of types of actions which will be considered as part of the bidder's good faith efforts to obtain DBE participation. It is not intended to be a mandatory checklist, nor is it intended to be exclusive or exhaustive. Other factors or types of efforts may be relevant in appropriate cases.

- Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBEs who have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBEs to respond to the solicitation. The bidder must determine with certainty if the DBEs are interested by taking appropriate steps to follow up initial solicitations.

- Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own force.

- Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

- (a) Negotiating in good faith with interested DBEs. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform the work.

(b) A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBEs is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Prime contractors are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.

5. Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the contractor's efforts to meet the project goal.

6. Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or contractor.

7. Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.

8. Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.

DBE Directory:

Our DBE Directory is a great resource for our Prime Contractors to identify partners that are DBE Certificated with District Department of Transportation and Washington Metropolitan Area Transit Authority. Our DBE Directory is updated daily.

http://ddotfiles.com/db/DBE/dbe.php

If a proposed partner from the Prime Contractors is not in the DDOT DBE Directory. Please contact our office.

Luisa Portillo, Equal Opportunity/DBE Program Specialist
DDOT Office of Civil Rights
55 M Street, S.E., 3rd Floor
Washington, D.C. 20003
(202) 671-0630
Luisa.Portillo@dc.gov

Glenda Payne, Equal Opportunity/DBE Program Specialist
DDOT Office of Civil Rights
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Glenda.Payne@dc.gov

APPENDIX H
REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the

provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

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

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

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

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

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

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

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

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

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

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

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

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

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

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

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

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

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

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

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

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

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

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

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

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

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

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

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

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

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

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

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and

non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

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

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

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed

classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

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

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

2. Withholding

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

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

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

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than

permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

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

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

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

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

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

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

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

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

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

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the

subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

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

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

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

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

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

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

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly,

and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

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

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

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

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

Shall be fined under this title or imprisoned not more than 5 years or both."

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

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

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

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

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

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1**. Instructions for Certification – First Tier Participants:**

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

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

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

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

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

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

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

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

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

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

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

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

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

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

2. **Instructions for Certification - Lower Tier Participants:**
(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

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

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

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

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

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

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded

Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

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

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

* * * * *

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

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

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

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

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

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

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

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

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

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

APPENDIX I
SUBCONTRACTOR APPROVAL REQUEST FORM

SUBCONTRACTOR APPROVAL REQUEST

(1) Project Name		(2) Invitation No.	
Prime Contractor's Name		(4) Address	
(5) Estimated Starting Date		(6) Estimated Completion Date	(7) F.A.P. #
(8) Subcontractor's Name, Address & Phone No.		(9) Number of Subcontractor Employees in Workforce	(10) Number of DC Residents employed

(11) Pay Item	Item Description	Dollars	Cents

Check Items listed below (13-16) that are included in subcontract agreement	(12) See Attached For Additional Descriptions or Remarks

(13) (All Projects)

	Yes	No
Contract Wage Schedule	☐	☐
DBE/MBE Policy Statement	☐	☐
(Federal-Aid Projects) Form FHWA-1273 (Required Contract Provisions)	☐	☐
(Non-Federal Aid Projects) (Required Contract Provisions)	☐	☐
(15) (Federal-Aid Projects When Subcontractor Will Receive Over $10,000) On-Site Work Force Affirmative Action Requirements for Women and Minorities-Special Conditions	☐	☐
(16) Subcontractor's Certification of Nondiscrimination in Employment (Form Included in Bid Proposal)	☐	☐
(17) FHWA On-The-Job Training (To Be Provided by Subcontractor)	☐	☐

(18) I Request the Contracting Officer's Approval of this Subcontract and Certify that the Organization which will Perform this Work is Capable, has not been Debarred and that the Work will be Performed in Accordance with the Contract Specifications. I Further Certify that all Required Contract Provisions are Physically Included as Part of the Subcontract Agreement.

PRIME CONTRACTOR'S REPRESENTATIVE _____ TITLE _____ DATE _____

THE INFORMATION BELOW IS COMPLETED BY THE DEPARTMENT

REVIEW AND DISTRIBUTION AFTER APPROVAL

CONTRACT COMPLIANCE _____ DATE _____

PROJECT ENGINEER/MANAGER _____ DATE _____

APPROVAL OF SUBCONTRACT IS HEREBY GIVEN

CONTRACTING OFFICER _____ DATE _____
DC DEPARTMENT OF PUBLIC WORKS

APPENDIX J
CONSTRUCTION ZONE TRAFFIC CONTROL DEVICE INSPECTION FORMS

CONSTRUCTION ZONE TRAFFIC CONTROL DEVICE INSPECTION LOG

PROJECT: _____ DATE: _____

_____ TIME: _____

FAP NO.: _____

TCP INSPECTION

TCP PHASE DRAWING NO. _____

I. SIGNS:

ALL CORRECT _____ (Y/N) MISSING _____ (NO.) INCORRECT/IMPROPER _____ (NO.)

LOCATIONS OF MISSING LIGHTS: _____ Sta(s).

LOCATIONS OF IMPROPER SIGNS: _____ Sta(s).

II. LIGHTS:

ALL CORRECT _____ (Y/N) MISSING _____ (NO.) INCORRECT/IMPROPER _____ (NO.)

LOCATIONS OF MISSING LIGHTS: _____ Sta(s).

LOCATIONS OF IMPROPER SIGNS: _____ Sta(s).

III. BARRICADES:

ALL CORRECT _____ (Y/N) MISSING _____ (NO.) INCORRECT/IMPROPER _____ (NO.)

LOCATIONS OF MISSING LIGHTS: _____ Sta(s).

LOCATIONS OF IMPROPER SIGNS: _____ Sta(s).

IV. MARKINGS:

ALL CORRECT _____ MISSING _____ INCORRECT/IMPROPER _____
Y/N NO. NO.

LOCATIONS OF MISSING LIGHTS: _____
Sta(s).

LOCATIONS OF IMPROPER SIGNS: _____
Sta(s).

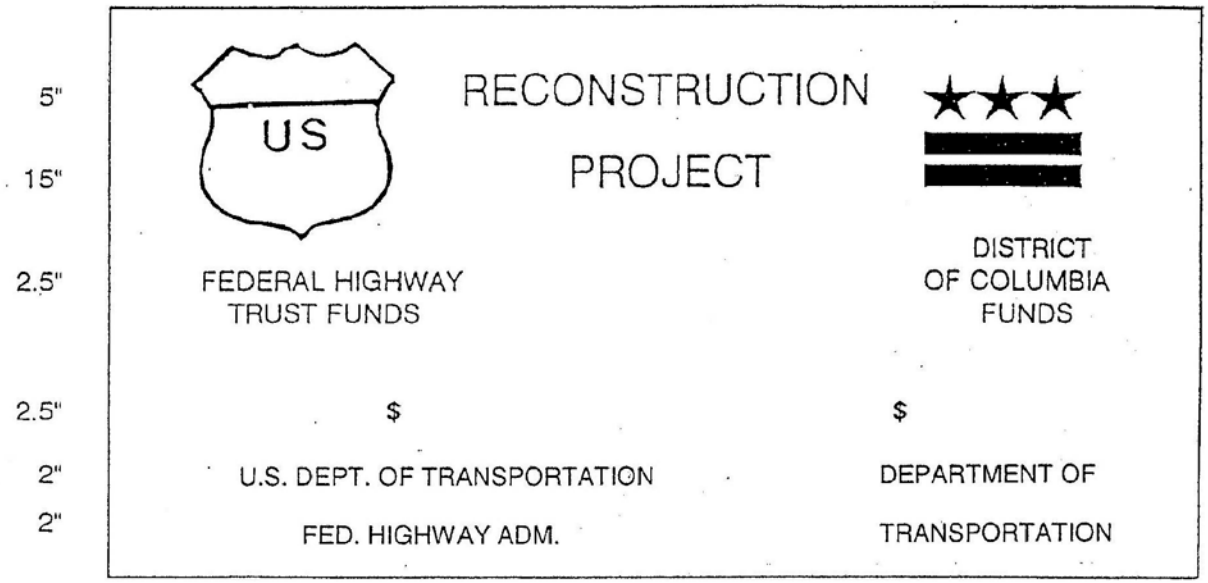
V. REMARKS/CORRECTIVE ACTION DATE: _____

_____

_____

_____

APPENDIX K
FEDERAL AID PROJECT SIGN



NOTE: BOARD SIZE APPROX.
4' x 6'

FEDERAL AID PROJECT SIGN

D.C. DEPARTMENT OF TRANSPORTATION

APPENDIX L
GEOTECHNICAL
&
PAVEMENT DESIGN
REPORT

REPORT ON SUBSURFACE INVESTIGATIONS AND PAVEMENT RECOMMENDATIONS RECONSTRUCTION OF FIRST STREET, NE MASSACHUSETTS AVENUE TO G STREET WASHINGTON, D.C.

by

Haley & Aldrich, Inc.
McLean, Virginia

for

Stantec Consulting Services, Inc.
(formerly Greenhorne & O'Mara, Inc.)
Baltimore, Maryland

File No. 39195-000
8 April 2013

HALEY & ALDRICH

Haley & Aldrich, Inc.
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HaleyAldrich.com

HALEY&
ALDRICH

8 April 2013
File No. 39195-000

Stantec Consulting Services, Inc. (formerly Greenhorne & O'Mara, Inc.)
810 Gleneagles Court, Suite 300
Baltimore, Maryland 21286

Attention: Steve Zeender, P.E.

Subject: Report on Subsurface Investigations and Pavement Recommendations
Reconstruction of First Street, NE
Massachusetts Avenue to G Street
Washington, D.C.

Ladies and Gentlemen:

We are pleased to submit herewith our report entitled, "Report on Subsurface Investigations and Pavement Recommendations, Reconstruction of First Street, NE, Massachusetts Avenue to G Street, Washington, D.C." This report has been prepared in accordance with the terms of the Greenhorne & O'Mara Subconsultant Agreement 1049-H&A executed on 9 January 2013.

The purpose of this study was to evaluate the existing pavement and subsurface soil and groundwater conditions at the site and develop recommendations for the pavement design and subgrade preparation. This report includes background information regarding the project, the results of our field and laboratory investigation programs, and our engineering recommendations.

BACKGROUND

The project site is situated on First Street, NE from Massachusetts Avenue to G Street. The general location of the project is shown on Figure 1, "Project Locus". The existing street configuration is shown on Figures 2 and 3, "Subsurface Exploration Location Plan".

Based on the information provided by Stantec Consulting Services, Inc. (formerly Greenhorne & O'Mara, Inc.), it is our understanding that the District of Columbia Department of Transportation (DDOT) is planning to reconstruct 1st Street, NE between Massachusetts Avenue and G Street. Three conceptual alternatives are being considered for the reconstruction as described below.

- Alternative 1 – No Build
- Alternative 2 – Partial Two-Way Traffic
- Alternative 3 – One-Way Southbound Traffic

In general, Alternatives 2 and 3 involve full depth reconstruction of the existing pavement, the creation of a two-way cycle track (bicycle lane), sidewalk improvements, and drainage reconstruction. Construction of a new bus pad is being considered as part of Alternative 3. Figures showing each of the conceptual alternatives are included in Appendix A. *At the time that this report was written, DDOT had not finalized their decision regarding their preferred concept.*

PURPOSE AND SCOPE

The purpose of this study was to investigate the existing pavement, subsurface soil and groundwater conditions at the site and develop pavement design recommendations based on our evaluation of the pavement and subsurface conditions. Geotechnical construction considerations for the project are also provided.

To achieve the objective discussed above, the scope of work undertaken for this investigation included the following:

- Planning and executing a field investigation program to obtain subsurface information for pavement design, site development and construction. A total of five (5) test borings were drilled to depths ranging between 5.2 and 11.2 ft below the existing ground surface.
- Conducting a geotechnical laboratory testing program on soil samples recovered from subsurface explorations to aid in soil classification and for determination of engineering properties required in pavement design and site development studies.
- Performing analyses for pavement design including subgrade preparation requirements and pavement section type and thicknesses.
- Providing recommendations for site backfill and compaction requirements.
- Evaluating geotechnical construction considerations for drainage and subgrade protection, dewatering, existing utilities and underground obstructions, protection of adjacent structures, excavation, and construction monitoring.

FIELD INVESTIGATION AND LABORATORY TESTING PROGRAM

Subsurface Exploration Program

A subsurface exploration program was conducted at the project site on 11 January 2013 and 14 January 2013 to obtain pavement, soil and groundwater information for engineering evaluations. The program consisted of drilling a total of five (5) test borings. The borings were drilled by Burgess and Niple of Chantilly, Virginia using a truck-mounted CME 55 drill rig. A Haley & Aldrich representative was present in the field to monitor the borings.

The locations of the test borings are shown on Figures 2 and 3, “Subsurface Exploration Location Plan”. The as-drilled locations and elevations of the test borings were determined in the field by G&O by optical survey methods. The locations and elevations of the borings should be considered accurate only to the degree implied by the method used.

The test borings were drilled to depths ranging between 5.2 ft and 11.2 ft below ground surface. It should be noted that an obstruction was encountered at boring HA03 at a depth of 5.2 ft. As a result, offset boring HA03 was performed. A summary of the test borings is presented in Table I*. The borings were advanced using 3-1/4-in. inside diameter (i.d.) hollow stem augers. Continuous split-spoon sampling was

* *Note:* A table that does not appear near its citation can be found in a separate table at the end of the report.

performed for all the test borings. The standard penetration resistance was determined at each sample level by counting the number of blows required to drive a standard split-spoon sampler (1-3/8-in. inside diameter, 2-in. outside diameter) a distance of 24 in. into undisturbed soil under the impact of a 140-lb hammer free-falling 30 in. The number of blows required to advance the sampler was recorded for each 6-in. interval. The standard penetration resistance N-value is determined by summing the number of blows required to advance the sampler the middle 12 in. of the 24-in. sampling range.

Samples recovered from the borings were taken to Haley & Aldrich's office for further evaluation. Some of these samples were subsequently selected for laboratory testing. The boring logs are presented in Appendix B.

Laboratory Testing

A laboratory testing program was conducted on selected disturbed soil samples recovered from the subsurface explorations to aid in soil classification and for determination of engineering properties required for design. The primary purpose of the testing program was to evaluate the index and compaction properties of the soils present at the site. Testing included Atterberg limits, grain size distributions, percent passing the No. 200 sieve, moisture density relationships as determined by modified Proctor, and California Bearing Ratio (CBR). The tests were performed in general conformance with applicable AASHTO and ASTM test procedures. Results of the laboratory testing program are presented in Appendix C and summarized in Table II*.

SUBSURFACE SOIL AND GROUNDWATER CONDITIONS

Descriptions of the soil conditions encountered during the subsurface exploration program conducted at the site are provided below in order of increasing depth below ground surface. Actual soil conditions between boring locations may differ from these typical descriptions. Refer to the test boring logs for specific descriptions of soil samples obtained from the borings. The boring logs and related information depict subsurface conditions only at the specific locations and at the particular time designated on the logs. Soil conditions at other locations may differ from conditions occurring at the boring locations. In addition, the passage of time may result in a change in the soil conditions at these boring locations.

- EXISTING PAVEMENT – At the ground surface, there is a 10.5-in. to 14 in. thick layer of pavement.

- FILL – Below the existing pavement, there is a stratum of man-placed fill primarily described as tan, gray, and yellow-brown sandy lean CLAY with gravel (CL), silty SAND (SM), and clayey SAND (SC). Typically, a 4-in. to 12-in. thick clayey GRAVEL (GC) base coarse layer was observed directly below the existing pavement. This FILL stratum was encountered in all borings, but was not fully penetrated in any of the borings. The consistency of fine-grained soil encountered in this stratum ranged from very soft to hard, but was generally soft. The density of coarse-grained soils encountered in this stratum ranged from very loose to medium dense, but was generally medium dense.

* *Note:* A table that does not appear near its citation can be found in a separate table at the end of the report.

Groundwater levels were typically measured in the boreholes when groundwater was encountered during drilling. As shown in Table I, groundwater was not encountered at any test boring locations.

Groundwater level readings have been made in the boreholes at times and under conditions discussed herein. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in season, rainfall, temperature, dewatering activities, and other factors not evident at the time measurements were made and reported herein.

DESIGN RECOMMENDATIONS

Pavement Design

A. Existing Pavement and Subgrade Conditions

An existing composite pavement section consisting of asphalt concrete above Portland Cement Concrete (PCC) was encountered at each boring location. The composite pavement section generally consisted of a 1.5 to 3.5-in. thick layer of asphalt concrete above a 9 to 12.5-in. thick layer of asphalt concrete. Additional details regarding the pavement section encountered at each boring location are provided below. Pavement core logs are included in Appendix B.

SUMMARY OF EXISTING PAVEMENT	
BORING LOCATION	DESCRIPTION
HA01	2.5 in. Asphalt Concrete, 11.5 in. Portland Cement Concrete, 4 in. Base Course
HA02	1.5 in. Asphalt Concrete, 12.5 in. Portland Cement Concrete, 12 in. Base Course
HA03	2.5 in. Asphalt Concrete, 11.5 in. Portland Cement Concrete, 6 in. Base Course
HA03A	1.5 in. Asphalt Concrete, 9 in. Portland Cement Concrete, 8 in. Base Course
HA04	3.5 in. Asphalt Concrete, 10.5 in. Portland Cement Concrete, 11 in. Base Course

CBR tests were performed on bag samples obtained during our subsurface investigation. As shown in Table II, the results of the two tests that were performed indicate CBR values of 3.3 and 35.2. We calculated the design CBR by using two-thirds of the average CBR and limiting the maximum CBR value to 10. Accordingly, we recommend that a design subgrade CBR value of 5.0 and a subgrade resilient modulus of 7,500 psi be used for pavement design. The use of these values is based on pavement being supported on the existing subgrade soils and the upper 1 ft of the subgrade being compacted to at least 100 percent of the laboratory maximum dry density, as determined by AASHTO T-180 (Modified Proctor) test method as discussed in subsequent sections of this report.

Subgrade soils typically consisted of clayey SAND (SC) and lean CLAY (CL). Groundwater was not encountered at any test boring locations. However, the natural moisture content of subgrade soils in close proximity to the ground surface was significantly higher than the optimum moisture content. In consideration that the existing subgrade soils have high fines content (percent passing the No. 200 sieve), are not free draining, and have insitu moisture contents in excess of the optimum, poor pavement support conditions are likely to exist in some areas of the site. We anticipate that undercutting of the existing

subgrade soils and replacement with select fill will be required, especially in areas where the existing subgrade consists of lean CLAY, such as in the vicinity of boring HA04.

B. Traffic Data and Pavement Design Approach

Average Daily Traffic (ADT) data were provided by Stantec Consulting Services, Inc. (Stantec). Using the ADT data, an estimate of design Equivalent Single Axle Loads (ESALs) was calculated for a design life of 20 years. Pavement design variables were determined in accordance with the AASHTO 1993 Pavement Design Guide. Traffic data and pavement design variables are presented below.

SUMMARY OF TRAFFIC DATA AND PAVEMENT DESIGN VARIABLES

DESCRIPTION	FLEXIBLE PAVEMENT	RIGID PAVEMENT
Classification	Collector	
Current Average Daily Traffic (2013)	2,100	
Future Average Daily Traffic (2033)	2,600	
Traffic Growth Rate	1.07 percent	
Design Life	20 years	
Lane Distribution Factor	90 percent (2 lanes)	
Percent trucks	15 percent	
Reliability	90 percent	90 percent
Initial/Terminal Serviceability	4.2/2.9	4.5/2.9
Standard Deviation	0.49	0.39
Design CBR Value	5	5
Subgrade Resilient Modulus	7,500 psi	7,500 psi
Truck ESAL Factor	1.28	1.92
Total ESALs	2,938,410	4,407,614

C. Subgrade Preparation

We recommend that in areas to receive pavement, the exposed subgrade be proofrolled using a loaded tandem or 10-wheeled dump truck or similar equipment in accordance with DDOT 2009 Specification Section 203 or current version. If zones of soft/loose soils, pumping, rutting, or heaving are observed at the subgrade level, the soil in these areas should be removed to a depth of approximately 2 ft or to suitable subgrade material, whichever is shallower, and replaced with structural fill. In areas where unsuitable soils are still present at the 2 ft over-excavation depth, the use of a geogrid at the over-excavation depth may be required in accordance with DDOT 2009 Specification Section 213 or current version. In areas where filling is required to reach the pavement subgrade level, new compacted structural fill should be placed to raise site grades after proofrolling. The structural fill should be compacted to 95 percent of the laboratory maximum dry density, as determined by AASHTO T-180 (Modified Proctor), except that the upper 1.0 ft of fill beneath flexible pavement should be compacted to 100 percent of Modified Proctor.

In consideration that the near surface soils at the site are cohesive in nature, delays associated with subgrade preparation and added construction costs associated with over-excavation and replacement should be anticipated; this is especially true if construction occurs between the months of November and May.

D. Proposed Pavement Sections

Pavement design was performed in accordance with the AASHTO 1993 Pavement Design Guide using the computer software program WinPAS Version 1.0.4. All pavement materials shown below should meet the requirements of the DDOT 2009 Standard Specifications or current version. Recommendations for flexible, rigid and composite pavement sections are provided below. Design calculations are included in Appendix D.

1. Flexible Pavement

The results of our analyses indicate that the minimum required structural number for flexible pavements is 4.53. The recommended minimum pavement section shown below has been developed such that it meets the minimum structural number requirement.

RECOMMENDED MINIMUM PAVEMENT SECTION FOR FLEXIBLE PAVEMENT				
LAYER	DESCRIPTION	LAYER COEFFICIENT	THICKNESS	LAYER STRUCTURAL NUMBER
1-Surface	Hot Mix Asphalt Superpave 9.5 mm, PG 70-22	0.44	2.25 in.	0.99
2-Base	Hot Mix Asphalt Superpave 19.0 mm, PG 64-22	0.44	6 in.	2.64
3-Aggregate Base/Drainage Layer	Drainable Aggregate Base Material, DDOT Specification Section 804.4 (with maximum 5 percent passing the No. 200 Sieve)	0.12	8 in.	0.96
4-Separation Geotextile	Woven Geotextile, Class ST, DDOT Specification Section 822.09	N/A	N/A	N/A
			Total	S_N = 4.59

2. Rigid Pavement (Travel Lanes)

We recommend that rigid pavements consist of Jointed Reinforced Portland Cement Concrete. Typical joint layout and spacing should be in accordance with DDOT Standards 501.01 and 501.02. Rigid pavement should have a minimum 28-day mean PCC modulus of rupture of 650 psi and a minimum 28-day compressive strength of 3,500 psi.

RECOMMENDED MINIMUM PAVEMENT SECTION FOR RIGID PAVEMENT (TRAVEL LANES)		
LAYER	DESCRIPTION	THICKNESS
1-Surface	Portland Cement Concrete	9 in.
2-Aggregate Base/Drainage Layer	Drainable Aggregate Base Material, DDOT Specification Section 804.4 (with maximum 5 percent passing the No. 200 Sieve)	8 in.
3-Separation Geotextile	Woven Geotextile, Class ST, DDOT Specification Section 822.09	N/A

3. Rigid Pavement (Bus Pads)

Recommendations for jointed reinforced concrete pavement for bus pads are provided below. The jointed reinforced concrete pavement for bus pads should meet the requirements described above for travel lanes.

RECOMMENDED MINIMUM PAVEMENT SECTION FOR RIGID PAVEMENT (BUS PADS)		
LAYER	DESCRIPTION	THICKNESS
1-Surface	Portland Cement Concrete	12 in.
2-Aggregate Base/Drainage Layer	Drainable Aggregate Base Material, DDOT Specification Section 804.4 (with maximum 5 percent passing the No. 200 Sieve)	8 in.
3-Separation Geotextile	Woven Geotextile, Class ST, DDOT Specification Section 822.09	N/A

4. Composite Pavement Section

We recommend that composite pavement sections consist of hot mix asphalt above jointed reinforced concrete pavement. The jointed reinforced concrete pavement should meet the requirements described above for travel lanes and bus pads.

RECOMMENDED MINIMUM PAVEMENT SECTION FOR COMPOSITE PAVEMENT		
LAYER	DESCRIPTION	THICKNESS
1-Surface	Hot Mix Asphalt Superpave 9.5 mm, PG 70-22	2.5 in.
2-Base	Portland Cement Concrete	10.0 in.
3-Aggregate Base/Drainage Layer	Drainable Aggregate Base Material, DDOT Specification Section 804.4 (with maximum 5 percent passing the No. 200 Sieve)	6 in.
4-Separation Geotextile	Woven Geotextile, Class ST, DDOT Specification Section 822.09	N/A

5. Pavement Milling and Joint Cleaning

In areas where the existing pavement section will not be modified (i.e. - will not be fully reconstructed), the existing pavement should be milled to the top of the existing PCC base pavement. Distressed PCC joints should be cleaned and sealed. After sealing, the pavement should be resurfaced with Hot Mix Asphalt (Superpave 9.5mm PG 70-22). All milling, joint cleaning, and resurfacing operations should be performed in accordance with the DDOT 2009 Specifications or current version. Note that due to the relatively thin asphalt overlay, installation of a crack retardant fabric is not recommended.

6. PCC Pavement Widenings

Where widenings of the existing PCC base pavement are planned, the longitudinal construction joint should be constructed in accordance with DDOT Standard 501.04. A load transfer dowel bar with a minimum diameter of 1.25 in. should be installed in the joint. The dowel bars should have a minimum length of 15 in. and be installed at a 12-in center-to-center spacing. The dowels should be anchored into existing concrete with epoxy resin adhesive. In addition, the Contractor should install transverse joints in the widened pavement such that the location and type (contraction or expansion) match with the transverse joints in the existing pavement.

7. Drainage

In addition to the recommendations presented above, the pavement design should consider that on-site soils, which contain significant amounts of fines, are not free draining and are frost susceptible. Therefore, to reduce the potential for freezing of trapped water within the drainage layer and softening of subgrade soils, an edge-drain should be installed beneath the outside edge of the travel lanes. The drainable aggregate base layers shown in the recommended pavement sections above should be extended to the face of the edge-drain. The edge-drain should be a minimum of 12 in. wide and 12 in. high and contain a 4-in. minimum diameter drain pipe meeting the requirements of DDOT 2009 Specification Section 603 or current version. The drain pipe should be surrounded by coarse aggregate meeting the requirements of DDOT 2009 Specification Section 805.03 or current version. In addition, the coarse aggregate should be wrapped in a PE Type I nonwoven geotextile conforming to DDOT 2009 Specification Section 822.09 or current version.

Site Backfill and Compaction Requirements

In consideration of the existing site grades and the proposed finished grades, a combination of excavation and fill placement will be required to achieve the proposed finished grades and install utilities. Recommendations for structural fill and use of on-site soils are provided below.

A. Structural Fill

Structural fill to support pavements should consist of <u>imported</u> soil meeting the requirements of DDOT 2009 Specification Section 804.04 or current version and be free of organic material, snow, ice, frozen soil, and other objectionable materials. Further, the structural fill should be a well-graded material with a maximum particle size of 2 in. and less than 8 percent fines (percent passing the No. 200 sieve). The fines

in the fill material should have a liquid limit no greater than 40 percent and a plasticity index no greater than 10. It is anticipated that the majority of on-site soils will not meet the criteria for structural fill.

In addition to the above requirements, structural fill to be placed in the upper 3 ft of filled areas during periods of wet and/or freezing weather should contain less than 5 percent passing the No. 200 sieve. Material proposed as structural fill should be tested and approved by a qualified geotechnical engineer prior to its use.

To evaluate the suitability and the quality of the fill source, we recommend that laboratory testing of fill material be performed in accordance with the AASHTO Test Methods indicated below in Table III.

Table III
Summary of AASHTO Test Methods

Test	AASHTO Designation
Moisture Content	T 265
Modified Proctor	T 180
Sieve Analysis	T 87, T 27
Atterberg Limits	T 89, T 90

Structural fill in unconfined areas should be placed in horizontal lifts not exceeding 6-in. in loose thickness and compacted to at least 95 percent of the laboratory maximum dry density, as determined by AASHTO T-180 (Modified Proctor), except that the upper 1.0 ft of fill beneath flexible pavement should be compacted to 100 percent of Modified Proctor. Structural fill should be moisture conditioned to within ± 2 percentage points of the optimum moisture content.

Structural fill should be compacted by self-propelled vibratory rollers or other approved compaction equipment meeting the requirements of DDOT 2009 Specification Section 902 or current version. Where compaction occurs in confined areas or within 4 ft of a structure, compaction should be performed by hand-guided vibratory compactors or mechanical tampers.

Structural fill should not be placed on frozen ground or uncompacted soil. During periods of freezing weather, each lift of fill should be compacted immediately following placement. During such periods, the last lift of compacted fill at the close of the working day should be rolled with a smooth roller to remove all ridges of soil. When structural fill is placed to support concrete structures, the concrete should be poured immediately after approval of the subgrade.

B. Use of On-Site Soils

On-site soils with a USCS group symbol of CL are not suitable for use as structural fill. The near surface soils with USCS group symbols of SM, SC, GC are likely to be suitable for use as structural fill; however, bulk samples should be collected and tested in accordance with Table III to confirm suitability. Notwithstanding, it may be difficult to place and compact the on-site soils to achieve the required density during certain periods of the year, such as the spring, fall, and winter months when precipitation levels are relatively high. As such, we anticipate that any structural fill required to raise site grades and backfill utility excavations will need to be imported to the site.

Since the natural moisture content of the on-site soils varies, moisture conditioning by wetting, drying, or scarifying may be required to achieve proper compaction. Some delays due to moisture conditioning and difficulties achieving the required compaction criteria should be expected.

CONSTRUCTION CONSIDERATIONS

The following sections of the report include comments on items related to geotechnical engineering aspects of the proposed construction. This section is written primarily for the engineer responsible for preparation of plans and specifications. Since this section identifies potential construction problems related to foundations and earthwork, it will also aid personnel who monitor the construction activity.

Prospective contractors for the project must evaluate potential construction problems on the basis of their own knowledge and experience in the District of Columbia, and on the basis of similar projects in other localities, taking into account their own proposed construction methods and procedures.

In addition to the construction guidelines and recommendations made herein, construction activities should conform to the requirements of OSHA and other applicable state and regulatory agencies.

Drainage and Subgrade Protection

Surface drainage should be maintained throughout the site and channeled to appropriate disposal facilities. Ponding of surface water should not be allowed, especially adjacent to pavements and existing structures. In addition, it is recommended that appropriate sedimentation and erosion controls be implemented in accordance with the approved grading plans prior to commencement of any grading operations.

Exposed subgrades at the site will likely consist of clayey SAND (SC) and lean CLAY (CL) fill soils. Due to the relatively high moisture content of these soils, we anticipate that the on-site soils will provide only a marginal travel surface for heavy equipment and construction vehicles. Consideration should be given to placing a 6-in. to 12-in. thick layer of crushed stone to protect the subgrade in areas where construction traffic is anticipated.

Dewatering

Groundwater was not encountered in any of our test borings. However, the potential exists to encounter perched water during excavations for utilities. During construction, the contractor should be prepared to temporarily dewater excavations, such as those required for utility installation. In general, a temporary dewatering system may consist of pumping from sumps within the excavation or pumps installed in wellpoints in close proximity to the excavation.

Existing Utilities and Underground Obstructions

Existing utilities, foundations, and underground obstructions that will not be removed or relocated during construction should be clearly marked and protected during construction. If any existing utilities, foundations, or underground obstructions are removed, the materials generated from clearing and demolition of such utilities should be disposed of in an approved off-site disposal facility.

Protection of Existing Structures

A. Existing Retaining Wall on West Side of 1st Street

An existing retaining wall that supports the sidewalk and roadway is located on the west side of 1st Street. It is our understanding that the retaining wall is likely to be a traditional cantilever retaining wall without tiebacks; however, this has not been confirmed by Stantec. We recommend that prior to construction, the Contractor be required to verify that tiebacks or other forms of horizontal support do not exist. If the presence of tiebacks or horizontal support is discovered, excavation activities in close proximity to the wall will need to be planned in such a way that they do not compromise their integrity. In addition, excavation for utility installation should be performed in manner that does not undermine the existing retaining wall foundation.

B. Existing WMATA Tunnel

An existing WMATA tunnel abuts the east side of the project. The top of the WMATA tunnel is at approximately El. 56 and bears at El. 17. The sidewalk adjacent to the tunnel is at approximately El. 42. Further, along the east side of the project, water quality inlet structures may be proposed within 5 to 10 ft from the western limits of the existing WMATA tunnel. The exact location and number of inlets was not know at the time this report was prepared. Approximate dimensions of the proposed inlet are 3.5 ft wide by 9.3 ft long by 7 ft deep. The excavation required to install the inlet is anticipated to extend about 10 ft below existing grade and the bottom of the excavation will be about 15 ft above the bottom of the tunnel. As such, we do not anticipate any issues with regard to undermining the tunnel foundation during installation of the water quality inlet. However, due to the proximity of the inlet to the WMATA tunnel, the excavation work will fall within the WMATA zone of influence as defined in the 2010 WMATA Adjacent Construction Project Manual (ACPM). All excavation work with the WMATA zone of influence will need to be performed in accordance with Section 3 of the WMATA ACPM. Of particular note, if an excavation support system will be used, the Contractor performing the excavation should be made aware of the bullet items shown below.

- The excavation support system will need to be designed in accordance with Section 3 of the WMATA ACPM.
- The design of the excavation support system will need to incorporate a deep seated slope stability analysis and must be submitted to WMATA for approval.
- The dewatering details must be submitted to WMATA for approval.
- Soldier piles cannot be installed by driving and will need to be installed in pre-drilled holes.
- A system for monitoring the vertical and horizontal movement of the excavation support system will need to be submitted to WMATA for approval.

Excavation

Excavation will be required for utility installation. We anticipate that excavation of the existing FILL soils should generally be achievable using conventional heavy earth-moving equipment in proper working condition.

During excavation and pavement subgrade preparation, care should be taken not to disturb the exposed FILL soils at the excavation subgrade level. The following excavation guidelines are recommended:

- The final excavation to design subgrade level in areas below pavements should be made with a backhoe equipped with a smooth-edged bucket.

- The exposed subgrade soils should be examined for the presence of loose or unsuitable soils. If unsuitable soils are encountered, they should be removed and replaced as discussed previously in this report.

Temporary construction excavations above the water table and not exceeding 4.5 ft in depth may be constructed with 1.5H:1V side slopes. Localized instabilities in such excavations may occur due to the heterogeneity of the near-surface soils. In such instances, the excavation sides should be flattened to a stable slope. The side slopes should be protected from excessive disturbance and surface water runoff.

In some areas, such as where excavating is required to install water quality inlets, laying back the excavation side slopes may not be practical due to space limitations. Accordingly, a temporary excavation support system consisting of soldier piles and wood lagging should be used to retain the soils. Table IV provides recommended soil properties for the design of the temporary excavation support system.

Table IV
Soil Properties for Design of the Temporary Excavation Support System

Stratum	Moist Unit Weight (pcf)	Buoyant Unit Weight (pcf)	Friction Angle (degrees)	Cohesion (psf)
Fill	120	60	28	50

In addition, regardless of the above recommendations, all excavations should be performed in accordance with local, state, and federal regulations, including current OSHA excavation safety standards.

Construction Monitoring

We recommended that Haley & Aldrich be retained to be present during construction to:

- Observe and approve pavement subgrades;

- Observe placement and test compaction of all fill materials in accordance with ASTM D 1556 (sand cone method) or ASTM D 2922 and D3017 (nuclear method) to verify the density, degree of compaction, and moisture content of the fill;

- Collect soil samples and perform additional laboratory tests, as required during construction, to help determine the suitability of proposed structural fill; and

- Prepare a field report for each day's work summarizing the test results and observations, including comments on the day's construction activities.

LIMITATIONS

This report has been prepared for specific application to the proposed reconstruction as understood at this time. In the event that changes in the nature, design, or location of the project are planned, the conclusions and recommendations contained in this report should not be considered valid, unless the changes are reviewed by Haley & Aldrich and the conclusions of this report modified or verified in writing.

The geotechnical analyses and recommendations are based, in part, upon the data obtained from the referenced subsurface explorations. The nature and extent of variations between explorations may not become evident until construction. If variations appear at that time, it may be necessary to re-evaluate the recommendations of this report.

This report is prepared for the exclusive use of DDOT and Stantec and their subconsultants in connection with the design and reconstruction of First Street, NE, Washington, D.C. There are no intended beneficiaries other than Stantec. Haley & Aldrich shall owe no duty whatsoever to any other person or entity on account of the Agreement or the report. Use of this report by any person or entity other than Stantec or its subconsultants for any purpose whatsoever is expressly forbidden unless such other person or entity obtains written authorization from Stantec and from Haley & Aldrich. Use of this report by such other person or entity without the written authorization of Stantec and Haley & Aldrich shall be at such other person's or entity's sole risk, and shall be without legal exposure or liability to Haley & Aldrich.

We appreciate the opportunity to provide engineering services on this project. Please do not hesitate to call if you have any questions or comments.

Sincerely yours,
HALEY & ALDRICH, INC.

Kashyap Chaturvedula
Senior Engineer

Derrick A. Shelton, P.E.
Program Manager / Vice President

DISTRICT OF COLUMBIA
DERRICK A. SHELTON
No. PE 906086
CIVIL
PROFESSIONAL ENGINEER

Enclosures:

Table I – Summary of Test Borings
Table II – Summary of Laboratory Test Results
Figure 1 – Project Locus
Figures 2 and 3 – Subsurface Exploration Location Plan
Appendix A – Concept Plans
Appendix B – Test Boring Logs and Pavement Core Logs
Appendix C – Laboratory Test Results
Appendix D – Calculations

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TABLE I
SUMMARY OF SUBSURFACE EXPLORATIONS
RECONSTRUCTION OF FIRST STREET, NE
WASHINGTON, D.C.

Test Boring Designation[1]	Ground Surface Elevation[2] (ft)	Test Boring Depth (ft)	Depth to Groundwater During Drilling[3] (ft)	Groundwater Elevation During Drilling[3] (ft)	Depth to Groundwater After Completion[3] (ft)	Groundwater Elevation After Completion[3] (ft)
HA01	50.7	9.2	Dry	Dry	Not measured	Not measured
HA02	42.0	11.2	Dry	Dry	Not measured	Not measured
HA03	36.2	5.2	Dry	Dry	Not measured	Not measured
HA03A	36.2	9.0	Dry	Dry	Not measured	Not measured
HA04	31.3	9.2	Dry	Dry	Not measured	Not measured

Notes:

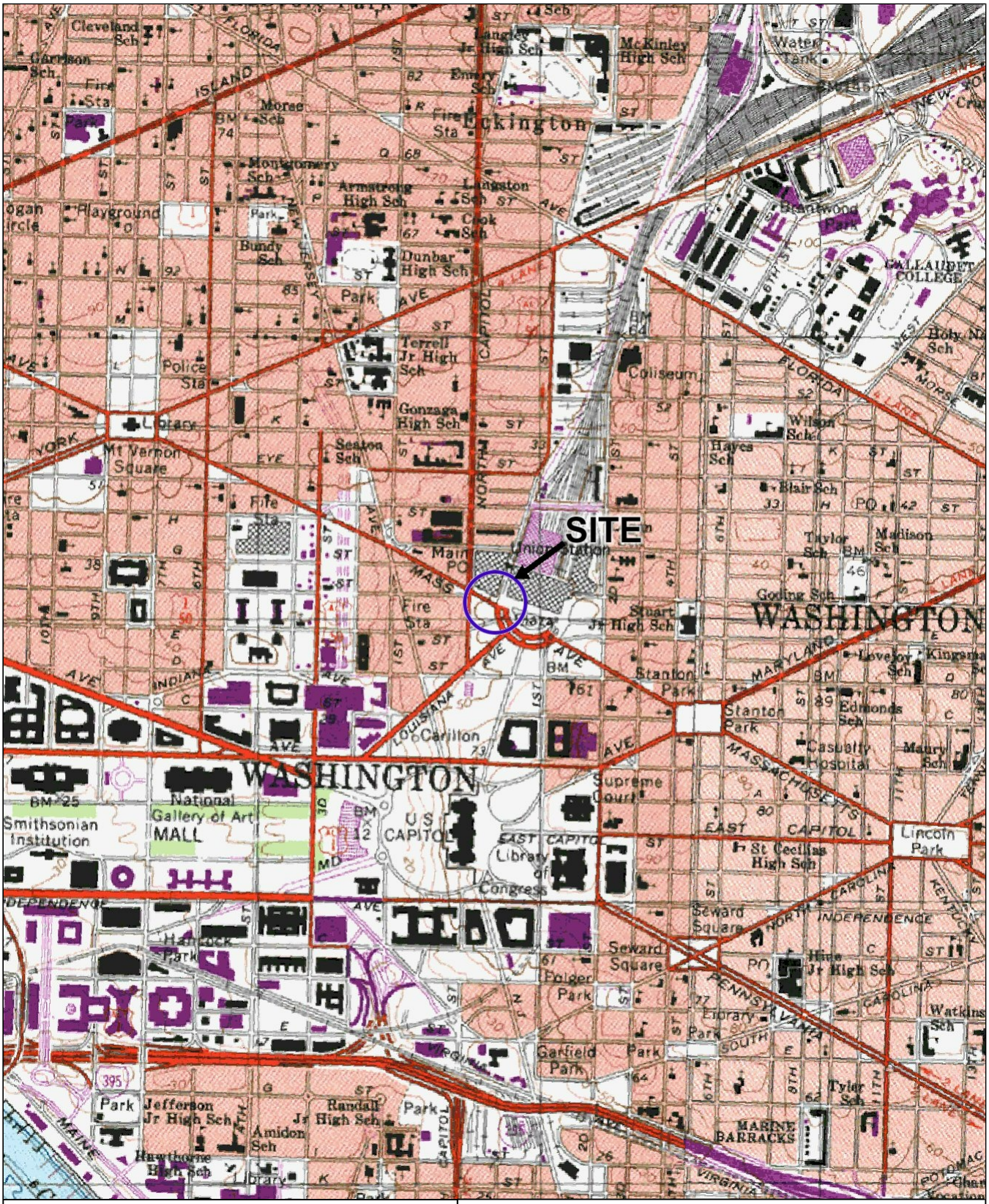
1. Technical monitoring of test borings completed on 11 January 2013 and 14 January 2013 was performed by Haley & Aldrich, Inc.
2. Ground surface elevations of test borings were provided by Greenhorne & O'Mara.
3. Groundwater level readings have been made in the boreholes at times and under conditions discussed herein. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in season, rainfall, temperature, and other factors not evident at the time measurements were made and reported.

TABLE II
LABORATORY TEST RESULTS
RECONSTRUCTION OF FIRST STREET, NE
WASHINGTON, D.C.

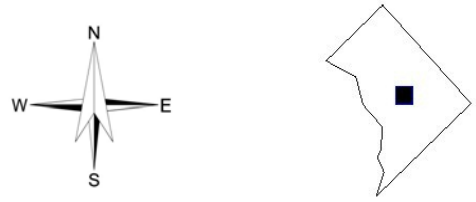
Boring Designation	Sample Number	Sample Depth	USCS Symbol	Stratum	Moisture Content (%)	LL	PI	% Gravel	% Sand	% Fines	Max. Dry Density[1] (pcf)	Optimum Moisture[1] (%)	CBR Value[2]	Swell (%)
HA01	S1	1.2-3.2	SM	FILL	6.9									
HA01	S2	3.2-5.2	SM	FILL	11.9									
HA01	S3	5.2-7.2	SM	FILL	20.9									
HA01	S4A	7.2-8.9	SC	FILL	16.9									
HA01	S4B	8.9-9.2	CL	FILL	22.7									
HA02	Bulk	3.2-7.2	SC	FILL	12.1	34	15			30.4	134.5	7.9	35.2	0.72
HA02	S1	1.2-3.2	SC	FILL	17.0									
HA02	S2	3.2-5.2	SC	FILL	16.2									
HA02	S3	5.2-7.2	CL	FILL	19.6									
HA02	S4	7.2-9.2	SC	FILL	20.8									
HA02	S5	9.2-11.2	SC	FILL	21.2									
HA03	S1	1.2-3.2	SC	FILL	5.5									
HA03	S2	3.2-5.2	CL	FILL	9.7									
HA03A	S1	1.0-3.0	SC	FILL	17.5	33	10			29.9				
HA03A	S2	3.0-5.0	SC	FILL	12.1									
HA03A	S3	5.0-7.0	SC	FILL	16.3									
HA03A	S4	7.0-9.0	SC	FILL	19.4									
HA04	Bulk	3.2-7.2	SC	FILL	18.9	39	21			47.5	127.0	8.2	3.3	3.6
HA04	S1	1.2-3.2	CL	FILL	16.7									
HA04	S2A	3.2-4.5	GC	FILL	27.7									
HA04	S2B	4.5-5.2	CL	FILL	22.0									
HA04	S3	5.2-7.2	CL	FILL	21.2									
HA04	S4	7.2-9.2	SM	FILL	12.4									

Notes:

1. Based on AASHTO T-180 Method C (Modified Proctor)
2. CBR values are based on 0.1-in. penetration of soaked samples compacted to 95% of maximum dry density based on AASHTO T-180 Method C (Modified Proctor).



SITE COORDINATES:38°53'50"N 77°0'28"W



U.S.G.S. QUADRANGLE: WASHINGTON WEST, DC

HALEY & ALDRICH

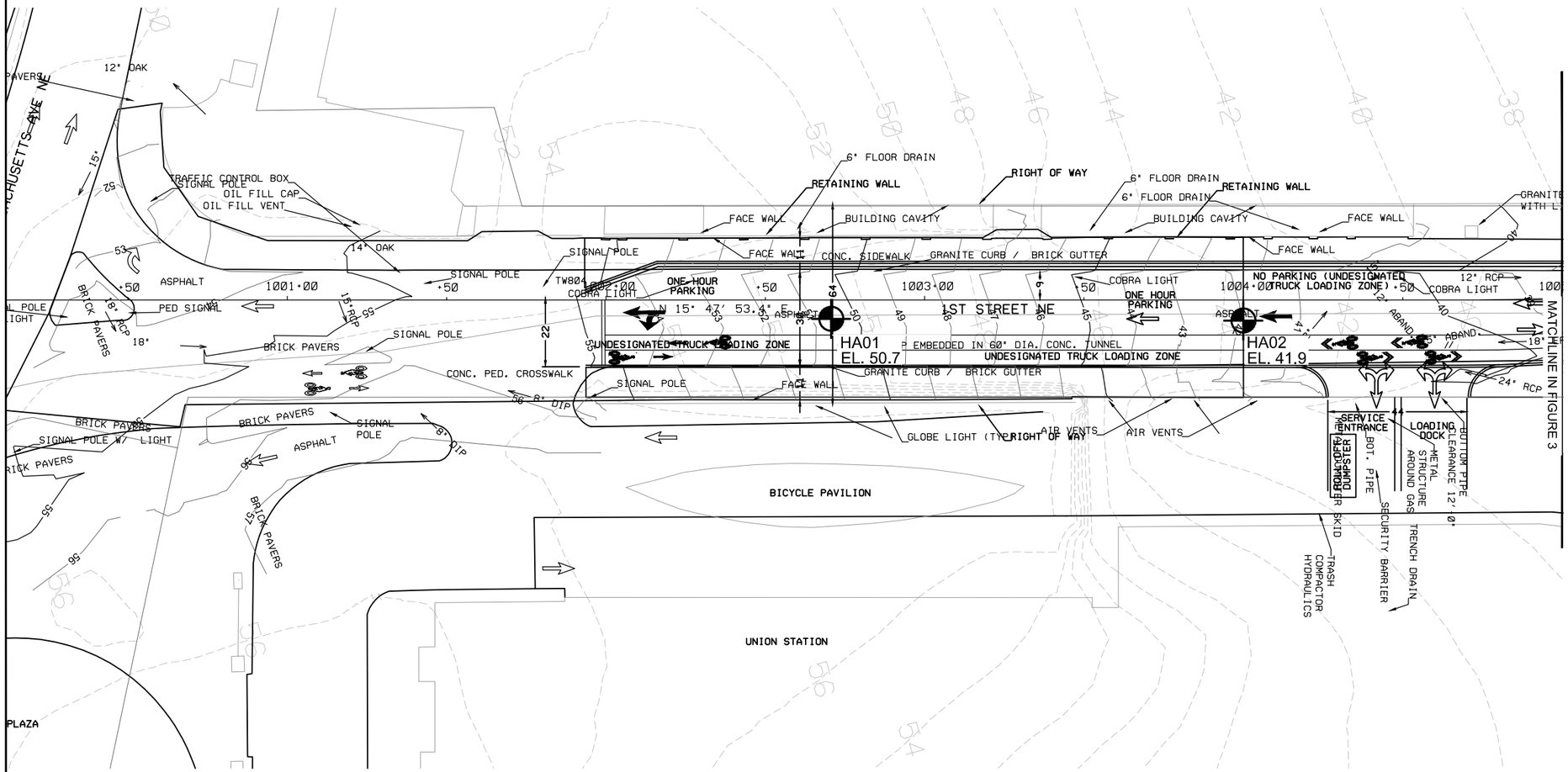
RECONSTRUCTION OF FIRST STREET, NE
MASSACHUSETTTS AVENUE TO G STREET
WASHINGTON, D.C.

PROJECT LOCUS

SCALE: 1:24,000
APRIL 2013

FIGURE 1

39195-000 1.PDF



LEGEND

HA01
EL. 50.7

DESIGNATION, LOCATION AND GROUND SURFACE ELEVATION OF TEST BORINGS PERFORMED BY BURGESS & NIPLE OF CHANTILLY, VIRGINIA ON 11 AND 14 OF JANUARY 2013.

NOTES:

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM AN ELECTRONIC MICROSTATION FILE OF THE SITE ENTITLED "SOIL BORING PLAN STA. 1000+00 TO STA. 1004+00", PROVIDED TO HALEY & ALDRICH, INC. (HALEY & ALDRICH) BY GREENHORNE & O'MARA ON 6 FEBRUARY 2013.
2. ELEVATIONS INDICATED ON THIS DRAWING ARE IN FEET. THE VERTICAL DATUM IS DC ENGINEERS DATUM.
3. TECHNICAL MONITORING OF TEST BORINGS COMPLETED DURING THE PERIOD 11 JANUARY 2013 AND 14 JANUARY 2013 WAS PERFORMED BY HALEY & ALDRICH.
4. AS DRILLED LOCATIONS AND ELEVATIONS OF TEST BORINGS WERE DETERMINED IN THE FIELD BYGREENHORNE & O'MARA BY OPTICAL SURVEY.

N
S
E

0 40 80
SCALE IN FEET

HALEY & ALDRICH

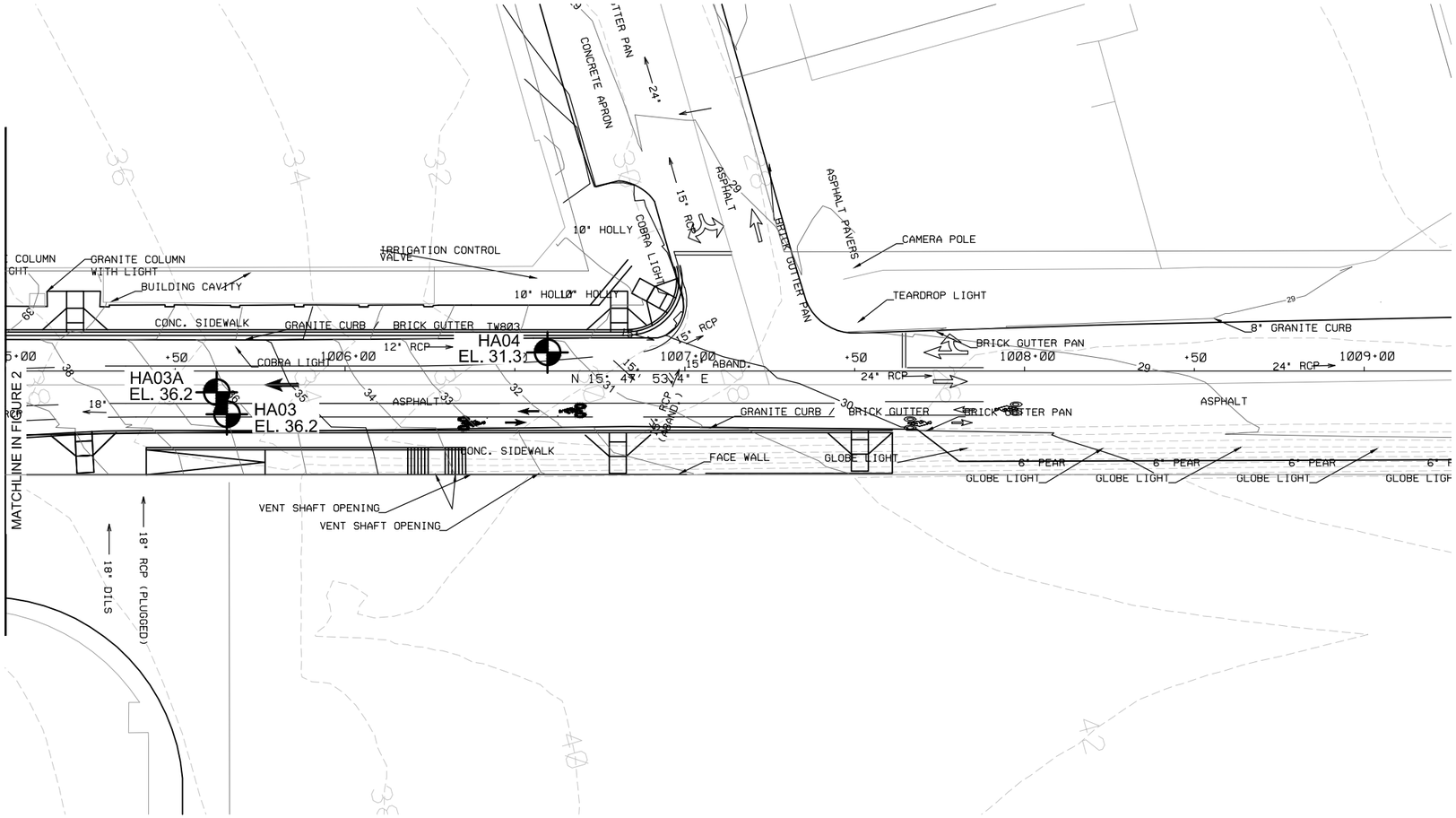
RECONSTRUCTION OF 1ST STREET N.E.
MASSACHUSETTS AVE. TO G STREET
WASHINGTON D.C.

SUBSURFACE EXPLORATION LOCATION PLAN

SCALE: AS SHOWN
APRIL 2013

FIGURE 2

G:\39195-1ST STREET\GLOBAL\CAD\DRAWINGS\39195-000-0002.SITE.DWG



LEGEND

HA04
EL.31.3

DESIGNATION, LOCATION AND GROUND SURFACE ELEVATION OF TEST BORINGS PERFORMED BY BURGESS & NIPLE OF CHANTILLY, VIRGINIA ON 11 AND 14 OF JANUARY 2013.

NOTES:

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM AN ELECTRONIC MICROSTATION FILE OF THE SITE ENTITILED "SOIL BORING PLAN STA. 1000+00 TO STA. 1004+00", PROVIDED TO HALEY & ALDRICH, INC. (HALEY & ALDRICH) BY GREENHORNE & O'MARA ON 6 FEBRUARY 2013.
2. ELEVATIONS INDICATED ON THIS DRAWING ARE IN FEET. THE VERTICAL DATUM IS DC ENGINEERS DATUM.
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4. AS DRILLED LOCATIONS AND ELEVATIONS OF TEST BORINGS WERE DETERMINED IN THE FIELD BYGREENHORNE & O'MARA BY OPTICAL SURVEY.

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S
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0 40 80
SCALE IN FEET

HALEY & ALDRICH

RECONSTRUCTION OF 1ST STREET N.E.
MASSACHUSETTS AVE. TO G STREET
WASHINGTON D.C.

SUBSURFACE EXPLORATION LOCATION PLAN

SCALE: AS SHOWN
APRIL 2013

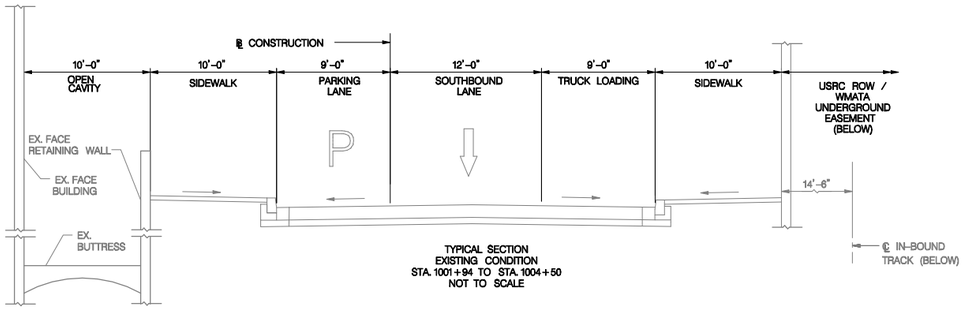
FIGURE 3

G:\39195-1ST STREET\GLOBAL\CAD\DRAWINGS\39195-000-0002 SITE.DWG

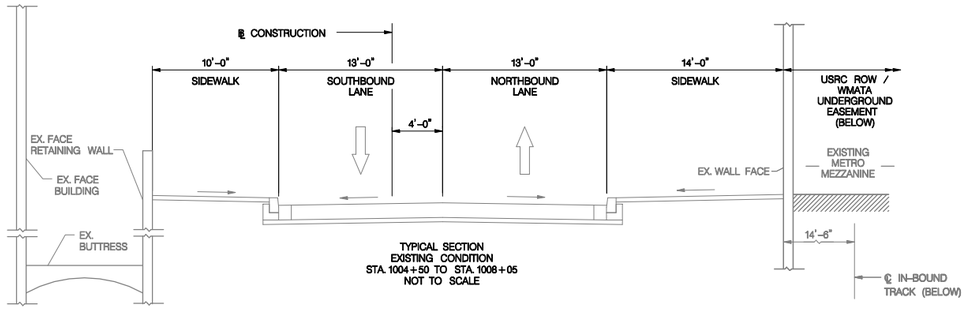
APPENDIX A

Stantec Concept Plans

REG	STATE	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
3	D.C.	STP-XXXX (XXX)		–



TYPICAL SECTION
EXISTING CONDITION
STA. 1001+94 TO STA. 1004+50
NOT TO SCALE



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EXISTING CONDITION
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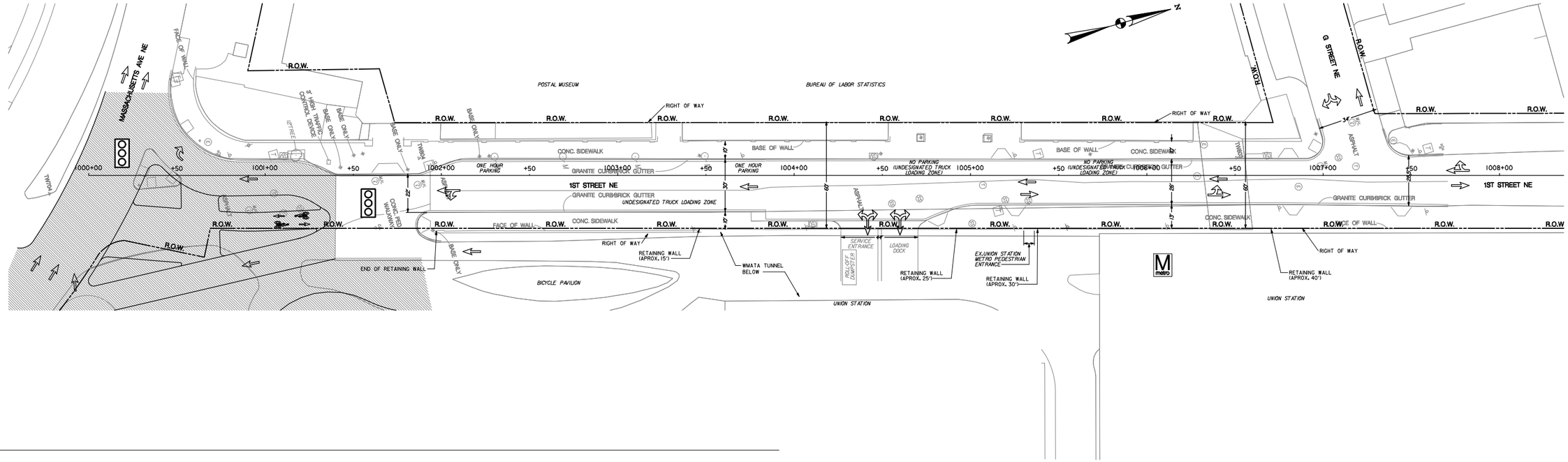
NOT TO SCALE



LEGEND

- EXISTING TRAVEL LANE
- 10+00 STATION / BASELINE
- EXISTING TRAFFIC CONTROL (TO REMAIN)
- EXISTING FEATURE
- IMPROVEMENTS BY OTHERS

30' 0 30' 60'
SCALE: 1"=30'

DATE: JAN. 2013 | SCALE: 1" = 30'

D.C. DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION
PROJECT MANAGEMENT DIVISION

RECONSTRUCTION OF 1ST STREET, N.E.
FROM MASSACHUSETTS AVE TO G STREET
CONTRACT NO. DCKA-XXXX-X-XXXX

CONCEPT PLAN – ALTERNATIVE 1
NO BUILD
STA. 1001+94 TO STA. 1008+05

PROJECT ENG. _____
DESIGNED BY _____
CHECKED BY _____
DRAWN BY _____
PROJECT MGR. _____
DIVISION CHIEF
DATE _____
FILE _____
SHEET OF 251

GREENHORNE & O'MARA, INC.
ENGINEERING-PLANNING-EARTH SCIENTISTS-SURVEYING
6110 FROST PLACE,
LAUREL, MARYLAND 20707
(301) 982-2800
www.greenhorne.com
Stantec

J:\TRANS\1049013 First Street NE - G to Mass\CADD\Display files\pHD-ALT1_first.dgn
Monday, January 14, 2013 AT 09:02 AM

REG	STATE	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
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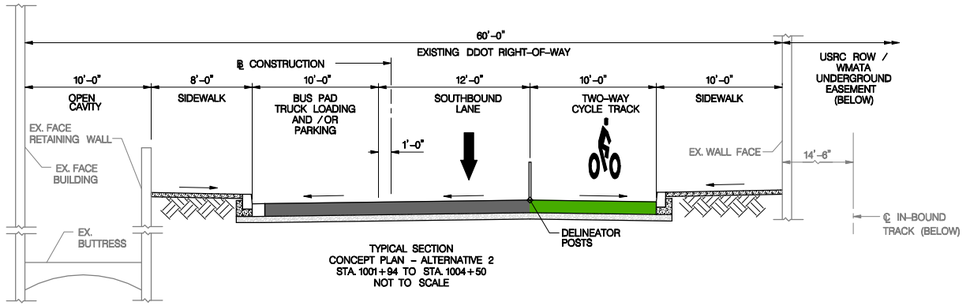
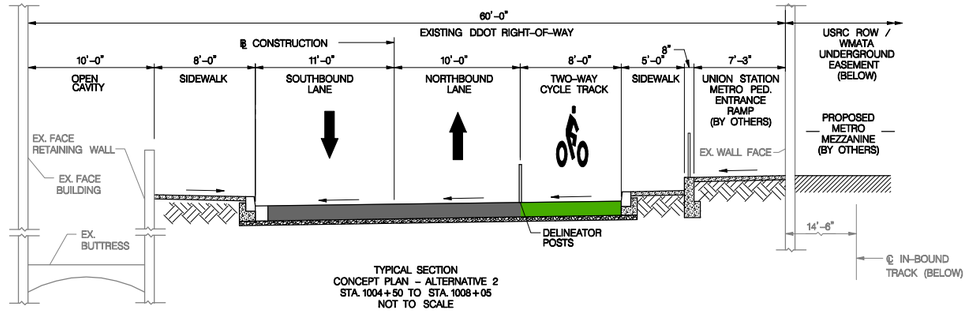
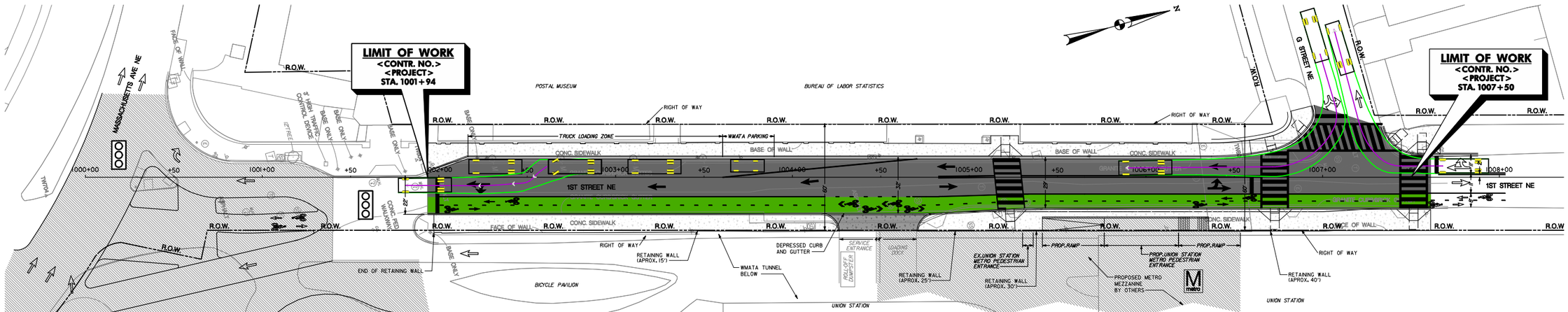


TYPICAL SECTION
CONCEPT PLAN – ALTERNATIVE 2
STA. 1001+94 TO STA. 1004+50
NOT TO SCALE



TYPICAL SECTION
CONCEPT PLAN – ALTERNATIVE 2
STA. 1004+50 TO STA. 1008+05
NOT TO SCALE



LEGEND

- PROPOSED / EXISTING TRAVEL LANE
- PROPOSED TWO-WAY CYCLE TRACK
- PROPOSED FULL DEPTH ASPHALT PAVEMENT
- PROPOSED SIDEWALK (EXPOSED AGGREGATE)
- IMPROVEMENTS BY OTHERS
- 10+00 STATION / BASELINE
- PROPOSED PEDESTRIAN RAMP
- EXISTING TRAFFIC CONTROL (TO REMAIN)
- EXISTING FEATURE

30' 0 30' 60'
SCALE: 1"=30'

DATE: JAN. 2013	SCALE: 1" = 30'	

D.C. DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION
PROJECT MANAGEMENT DIVISION

RECONSTRUCTION OF 1ST STREET, N.E.
FROM MASSACHUSETTS AVE TO G STREET
CONTRACT NO. DCKA-XXXX-X-XXXX

CONCEPT PLAN – ALTERNATIVE 2
PARTIAL TWO-WAY TRAFFIC
STA. 1001+94 TO STA. 1008+05

PROJECT ENG. _____
DESIGNED BY _____
CHECKED BY _____
DRAWN BY _____
PROJECT MGR. _____

DIVISION CHIEF

DATE _____
FILE _____
SHEET OF 251

GREENHORNE & O'MARA, INC.
ENGINEERING-PLANNING-EARTH SCIENTISTS-SURVEYING
6110 FROST PLACE,
LAUREL, MARYLAND 20707
(301) 982-2800
www.greenhorne.com

Stantec

J:\TRANS\1049.013 First Street NE - G to Mass\CADD\Display files\pHD-ALT2_first.dgn
Monday, January 14, 2013 AT 09:03 AM

REG	STATE	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
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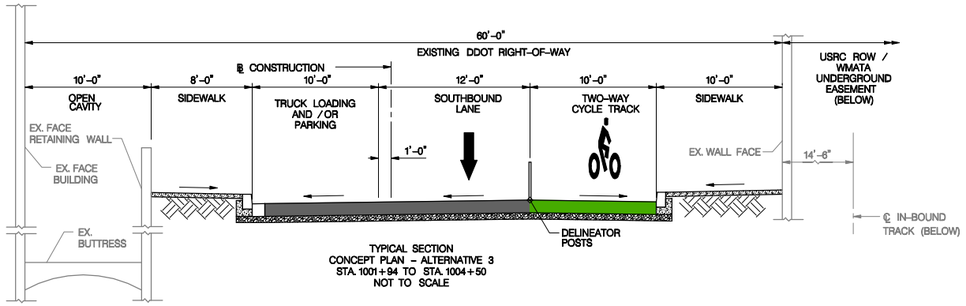

TYPICAL SECTION
CONCEPT PLAN – ALTERNATIVE 3
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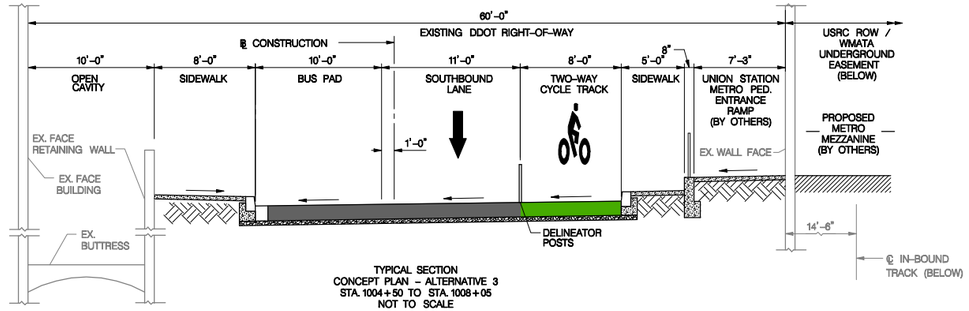
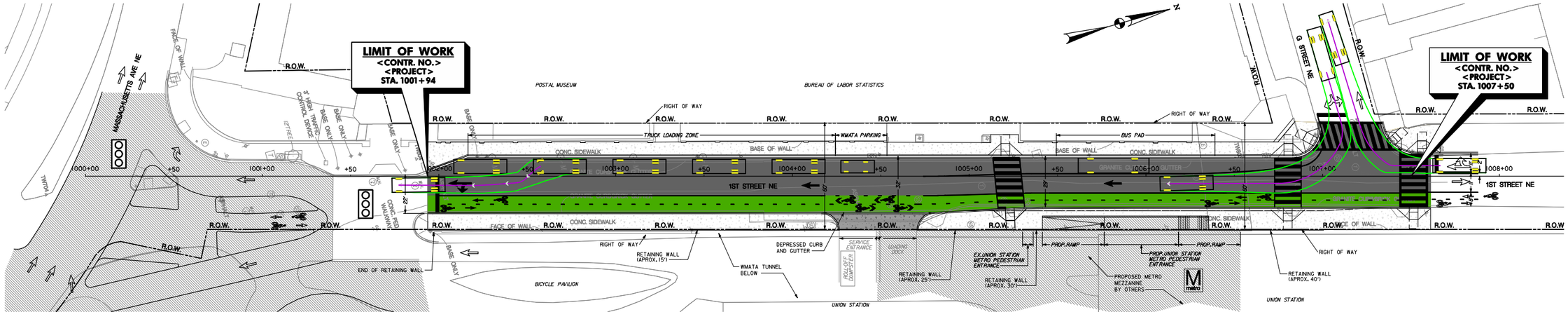
NOT TO SCALE



TYPICAL SECTION
CONCEPT PLAN – ALTERNATIVE 3
STA. 1004+50 TO STA. 1008+05
NOT TO SCALE



LEGEND

PROPOSED / EXISTING TRAVEL LANE	STATION / BASELINE (10+00)
PROPOSED TWO-WAY CYCLE TRACK	PROPOSED PEDESTRIAN RAMP
PROPOSED FULL DEPTH ASPHALT PAVEMENT	EXISTING TRAFFIC CONTROL (TO REMAIN)
PROPOSED SIDEWALK (EXPOSED AGGREGATE)	EXISTING FEATURE
IMPROVEMENTS BY OTHERS	

30' 0 30' 60'
SCALE: 1"=30'

DATE: JAN. 2013 | SCALE: 1" = 30'

D.C. DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION
PROJECT MANAGEMENT DIVISION

RECONSTRUCTION OF 1ST STREET, N.E.
FROM MASSACHUSETTS AVE TO G STREET
CONTRACT NO. DCKA-XXXX-X-XXXX

PROJECT ENG. _____
DESIGNED BY _____
CHECKED BY _____
DRAWN BY _____
PROJECT MGR. _____

CONCEPT PLAN – ALTERNATIVE 3
ONE-WAY SOUTHBOUND TRAFFIC
STA. 1001+94 TO STA. 1008+05

DIVISION CHIEF
DATE _____
FILE _____
SHEET OF 251

GREENHORNE & O'MARA, INC.
ENGINEERING-PLANNING-EARTH SCIENTISTS-SURVEYING
6110 FROST PLACE,
LAUREL, MARYLAND 20707
(301) 982-2800
www.greenhorne.com
Stantec

J:\TRANS\1049.013 First Street NE - G to Mass\CADD\Display files\pHD-ALT3_first.dgn
Monday, January 14, 2013 AT 09:03 AM

APPENDIX B

Test Boring Logs

Pavement Core Logs

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA01

Project Reconstruction of First Street NE; Washington, DC
Client Greenhorne & O'Mara
Contractor Burgess & Niple

File No. 39195-000
Sheet No. 1 of 1
Start January 11, 2013
Finish January 11, 2013
Driller W. Cave
H&A Rep. D. Seserko

Elevation 50.7
Datum DC Engineers
Location (MD State Plane)
N 448,330
E 1,310,172

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	--	Rig Make & Model: CME 55
Inside Diameter (in.)	3.25	1-3/8	--	Bit Type: Cutting Head
Hammer Weight (lb)	--	140	-	Drill Mud: None
Hammer Fall (in.)	--	30	-	Casing: HSA Spun
				Hoist/Hammer: Winch / Automatic Hammer
				PID Make & Model:

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				50.5		2.5" ASPHALT CONCRETE										
				0.2		11.5" PORTLAND CEMENT CONCRETE										
				49.5												
	8 12 11 17	S1 20	1.2 3.2	1.2 49.2	GC	Medium dense, gray-brown, clayey GRAVEL (GC), mps 75 mm, moist	25	50	-	5	5	15				
				1.5	SM	Medium dense, black and gray, silty SAND with gravel (SM), mps 75 mm, petroleum-like odor, moist, contains brick fragments -FILL-	10	10	10	25	30	15				
	8 6 5 3	S2 13	3.2 5.2		SM	Similar to S1, except contains cement and clay pocket	10	10	10	25	30	15				
				46.5 4.2	SC	Medium dense, tan and red, clayey SAND (SC), mps 2.0 mm, petroleum-like odor, moist				5	60	35				
5	2 1 2 2	S3 15	5.2 7.2		SC	Very loose, tan and red, clayey SAND (SC), mps 2.0 mm, petroleum-like odor, moist										
	1 1 1 2	S4A S4B 24	7.2 9.2		SC	Similar to S3				5	60	35				
				41.8 8.9	CL	Very soft, yellow-brown, lean CLAY (CL), mps 0.42 mm, petroleum-like odor, moist, contains mica					10	90				
				41.5 9.2		Bottom of Exploration 9.2 ft										
10																

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
1/11/13	10:15	0.25	--	5.7	DRY

Sample ID
O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	9.2
Rock Cored (ft)	0
Samples	4S

Boring No. HA01

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HAR HA-LIB07-R1.GLB HA-TB+CORE+WELL-07-1.GDT \\WAS\COMMON\PROJECTS\39195\FIELDWORK\BORING LOGS\39195-000_2013-0212_HA01-HA04.GPJ Apr 1, 13

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA02

Project Reconstruction of First Street NE; Washington, DC
Client Greenhorne & O'Mara
Contractor Burgess & Niple

File No. 39195-000
Sheet No. 1 of 1
Start January 11, 2013
Finish January 11, 2013
Driller W. Cave
H&A Rep. D. Seserko

Elevation 41.9
Datum DC Engineers
Location (MD State Plane)
N 448,454
E 1,310,208

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	--	Rig Make & Model: CME 55
Inside Diameter (in.)	3.25	1-3/8	--	Bit Type: Cutting Head
Hammer Weight (lb)	--	140	-	Drill Mud: None
Hammer Fall (in.)	--	30	-	Casing: HSA Spun
				Hoist/Hammer: Winch / Automatic Hammer
				PID Make & Model:

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				41.9		1.50" ASPHALT CONCRETE										
				0.1		12.5" PORTLAND CEMENT CONCRETE										
				40.8												
	8 16 6 6	S1 22	1.2 3.2	1.2	GC	Medium dense, black and gray, clayey GRAVEL with sand (GC), mps 75 mm, petroleum-like odor, moist	25	30	10	10	10	15				
				39.8		-FILL-										
				2.2	SC	Medium dense, tan and red, clayey SAND (SC), mps 2.0 mm, petroleum-like odor, moist, contains mica				5	65	30				
	7 5 5 4	S2 16	3.2 5.2		SC	Loose, tan and red, clayey SAND (SC), mps 2.0 mm, petroleum-like odor, moist				5	65	30				
5				36.8												
	8 1 3 3	S3 18	5.2 7.2	5.2	CL	Soft, yellow-brown, sandy lean CLAY (CL), mps 0.42 mm, petroleum-like odor, moist, contains mica					20	80				
				34.8												
	1 1 1 1	S4 20	7.2 9.2	7.2	SC	Very loose, tan and yellow-brown, clayey SAND (SC), mps 2.0 mm, moist, contains mica				5	75	20				
	1 2 2 2	S5 18	9.2 11.2		SC	Similar to S4				5	60	35				
10				30.8												
				11.2		Bottom of Exploration 11.2 ft										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
1/11/13	--	--	--	11.2	DRY

Sample ID
O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	11.2
Rock Cored (ft)	0
Samples	5S

Boring No. HA02

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA03

Project Reconstruction of First Street NE; Washington, DC
Client Greenhorne & O'Mara
Contractor Burgess & Niple

File No. 39195-000
Sheet No. 1 of 1
Start January 11, 2013
Finish January 14, 2013
Driller W. Cave
H&A Rep. D. Seserko

Elevation 36.2
Datum DC Engineers
Location (MD State Plane)
N 448,612
E 1,310,259

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	--	Rig Make & Model: CME 55
Inside Diameter (in.)	3.25	1-3/8	--	Bit Type: Cutting Head
Hammer Weight (lb)	--	140	-	Drill Mud: None
Hammer Fall (in.)	--	30	-	Casing: HSA Spun
				Hoist/Hammer: Winch / Automatic Hammer
				PID Make & Model:

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				36.0		2.5" ASPHALT CONCRETE										
				0.2		11.5" PORTLAND CEMENT CONCRETE										
				35.0												
	7 13 14 18	S1 20	1.2 3.2	1.2	GC	Medium dense, gray, clayey GRAVEL with sand (GC), mps 75 mm, moist	25	20	10	10	20	15				
				34.5		-FILL-										
				1.7	SC	Medium dense, tan, clayey SAND with gravel (SC), mps 75 mm, moist	15	20	15	15	20	15				
				33.0												
	4 7 52 48	S2 15	3.2 5.2	3.2	CL	Hard, gray and brown, sandy lean CLAY with gravel (CL), mps 75 mm, moist, contains plastic fragments	10	10	10	10	10	50				
5				31.0		Note: Encountered obstruction at 5.2 ft. See offset boring HA03A.										
				5.2		Bottom of Exploration 5.2 ft										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
1/11/13	--	--	--	5.2	DRY

Sample ID
O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	5.2
Rock Cored (ft)	0
Samples	2S

Boring No. HA03

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA03A

Project Reconstruction of First Street NE; Washington, DC
Client Greenhorne & O'Mara
Contractor Burgess & Niple

File No. 39195-000
Sheet No. 1 of 1
Start January 14, 2013
Finish January 14, 2013
Driller W. Cave
H&A Rep. D. Seserko

Elevation 36.2
Datum DC Engineers
Location (MD State Plane)
N 448,611
E 1,310,252

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	--	Rig Make & Model: CME 55
Inside Diameter (in.)	3.25	1-3/8	--	Bit Type: Cutting Head
Hammer Weight (lb)	--	140	-	Drill Mud: None
Hammer Fall (in.)	--	30	-	Casing: HSA Spun
				Hoist/Hammer: Winch / Automatic Hammer
				PID Make & Model:

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				36.0		2.5" ASPHALT CONCRETE										
				0.2		9.5" PORTLAND CEMENT CONCRETE										
				35.2												
	5 10 8 6	S1 21	1.0 3.0	1.0	GC	Medium dense, gray, clayey GRAVEL with sand (GC), mps 75 mm, moist -FILL-	30	25	10	10	10	15				
				34.5												
				1.7	SC	Medium dense, tan, clayey SAND (SC), mps 4.75 mm, moist, contains mica			10	20	40	30				
	8 9 7 5	S2 5	3.0 5.0		SC	Medium dense, light brown, clayey SAND (SC), mps 19 mm, moist		10	10	15	45	20				
5	9 2 3 2	S3 23	5.0 7.0		SC	Similar to S2, except loose, mps 4.75 mm, contains mica			10	20	45	25				
	2 2 2 3	S4 23	7.0 9.0		SC	Very loose, light brown, clayey SAND (SC), mps 2.0 mm, moist, contains mica				20	40	40				
				27.2												
				9.0		Bottom of Exploration 9.0 ft										
10																

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
1/14/13	11:15	0.25	--	1.2	DRY

Sample ID
O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	9.0
Rock Cored (ft)	0
Samples	4S

Boring No. HA03A

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA04

Project Reconstruction of First Street NE; Washington, DC
Client Greenhorne & O'Mara
Contractor Burgess & Niple

File No. 39195-000
Sheet No. 1 of 1
Start January 11, 2013
Finish January 11, 2013
Driller W. Cave
H&A Rep. D. Seserko

Elevation 31.3
Datum DC Engineers

Location (MD State Plane)
N 448,707
E 1,310,267

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	--	Rig Make & Model: CME 55
Inside Diameter (in.)	3.25	1-3/8	--	Bit Type: Cutting Head
Hammer Weight (lb)	--	140	-	Drill Mud: None
Hammer Fall (in.)	--	30	-	Casing: HSA Spun
				Hoist/Hammer: Winch / Automatic Hammer
				PID Make & Model:

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				31.0		3.5" ASPHALT CONCRETE										
				0.3		10.5" PORTLAND CEMENT CONCRETE										
				30.1												
	5 5 5 4	S1A, S1B 19	1.2 3.2	1.2	GC	Loose, gray, clayey GRAVEL with sand (GC), mps 75 mm, petroleum-like odor, moist	15	35	10	10	10	20				
				29.3		-FILL-										
				2.0	CL	Stiff, yellow-brown and black, gravelly lean CLAY with sand (CL), mps 75 mm, petroleum-like odor, moist	15	20	5	5	5	50				
				28.1												
	1 1 2 2	S2 24	3.2 5.2	3.2	GC	Very loose, gray, clayey GRAVEL with sand (GC), mps 2.0 mm, petroleum-like odor, moist, contains mica	15	30	20	10	10	15				
				26.8												
5				4.5	CL	Soft, yellow-brown, sandy lean CLAY (CL), mps 2.0 mm, petroleum-like odor, moist, contains mica				5	25	70				
	2 2 2 3	S3 14	5.2 7.2		CL	Soft, yellow-brown, sandy lean CLAY with sand (CL), mps 19 mm, petroleum-like odor, moist, contains mica		10		5	10	75				
				24.1												
	2 2 3 3	S4 16	7.2 9.2	7.2	SM	Loose, black, silty SAND with gravel (SM), mps 75 mm, moist, contains crushed brick	10	10	10	20	25	25				
				22.1												
				9.2		Bottom of Exploration 9.2 ft										
10																

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
1/11/13	13:30	0.25	--	5.5	DRY

Sample ID
O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	9.2
Rock Cored (ft)	0
Samples	4S

Boring No. HA04

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HAR HA-LIB07-R1.GLB HA-TB+CORE+WELL-07-1.GDT \\WAS\COMMON\PROJECTS\39195\FIELDWORK\BORING LOGS\39195-000_2013-0212_HA01-HA04.GPJ Apr 1, 13

Station No.	1002+71	Core No:	**HA01**
Lane:	West	Core Diameter:	6 inches
Contractor:	Burgess & Niple	Date:	11 January 2013

LAYER NO.	DEPTH (INCHES)		THICKNESS (INCHES)	MATERIAL DESCRIPTION
	FROM	TO		
1	0.0	2.5	2.5	Asphalt Concrete – Surface Mix (SM)
2	2.5	14.0	11.5	Portland Cement Concrete
3	14.0	18.0	4.0	Granular Base Course

HALEY & ALDRICH

RECONSTRUCTION OF FIRST STREET, NE
MASSACHUSETTS AVENUE TO G STREET
WASHINGTON, D.C.

PAVEMENT CORE LOG
HA01

February 2013

FILE NO. 39195-000

Station No.	1004+00	Core No:	**HA02**
Lane:	West	Core Diameter:	6 inches
Contractor:	Burgess & Niple	Date:	11 January 2013

LAYER NO.	DEPTH (INCHES)		THICKNESS (INCHES)	MATERIAL DESCRIPTION
	FROM	TO		
1	0.0	1.5	1.5	Asphalt Concrete – Surface Mix (SM)
2	1.5	14.0	12.5	Portland Cement Concrete
3	14.0	26.0	12.0	Granular Base Course

FILE NO. 39195-000

HALEY & ALDRICH

RECONSTRUCTION OF FIRST STREET, NE
MASSACHUSETTS AVENUE TO G STREET
WASHINGTON, D.C.

PAVEMENT CORE LOG
HA02

February 2013

Station No.	1005+65	Core No:	**HA03**
Lane:	East	Core Diameter:	6 inches
Contractor:	Burgess & Niple	Date:	11 January 2013

LAYER NO.	DEPTH (INCHES)		THICKNESS (INCHES)	MATERIAL DESCRIPTION
	FROM	TO		
1	0.0	2.5	2.5	Asphalt Concrete – Surface Mix (SM)
2	2.5	14.0	11.5	Portland Cement Concrete
3	14.0	20.0	6.0	Granular Base Course

HALEY & ALDRICH

RECONSTRUCTION OF FIRST STREET, NE
MASSACHUSETTS AVENUE TO G STREET
WASHINGTON, D.C.

PAVEMENT CORE LOG
HA03

February 2013

FILE NO. 39195-000

Station No.	1005+62	Core No:	**HA03A**
Lane:	East	Core Diameter:	6 inches
Contractor:	Burgess & Niple	Date:	14 January 2013

LAYER NO.	DEPTH (INCHES)		THICKNESS (INCHES)	MATERIAL DESCRIPTION
	FROM	TO		
1	0.0	2.5	2.5	Asphalt Concrete – Surface Mix (SM)
2	2.5	12.0	9.5	Portland Cement Concrete
3	12.0	20.0	8.0	Granular Base Course

FILE NO. 39195-000

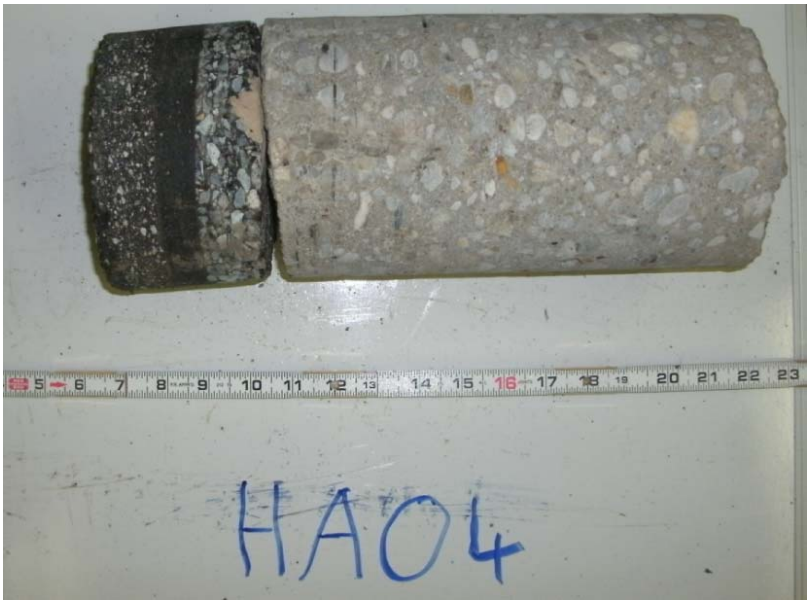
HALEY & ALDRICH

RECONSTRUCTION OF FIRST STREET, NE
MASSACHUSETTS AVENUE TO G STREET
WASHINGTON, D.C.

PAVEMENT CORE LOG
HA03A

February 2013

Station No.	1006+59	Core No:	**HA04**
Lane:	West	Core Diameter:	6 inches
Contractor:	Burgess & Niple	Date:	11 January 2013



LAYER NO.	DEPTH (INCHES)		THICKNESS (INCHES)	MATERIAL DESCRIPTION
	FROM	TO		
1	0.0	3.5	3.5	Asphalt Concrete – Surface Mix (SM)
2	3.5	14.0	10.5	Portland Cement Concrete
3	14.0	24.0	10.0	Granular Base Course

FILE NO. 39195-000

HALEY & ALDRICH

RECONSTRUCTION OF FIRST STREET, NE
MASSACHUSETTS AVENUE TO G STREET
WASHINGTON, D.C.

PAVEMENT CORE LOG
HA04

February 2013

APPENDIX C

Laboratory Test Results

JAY KAY TESTING
5233 Lehman Road, Suite 110
Spring Grove, PA 17362
Phone: (410) 259-5101

Reconstruction of First Street NE

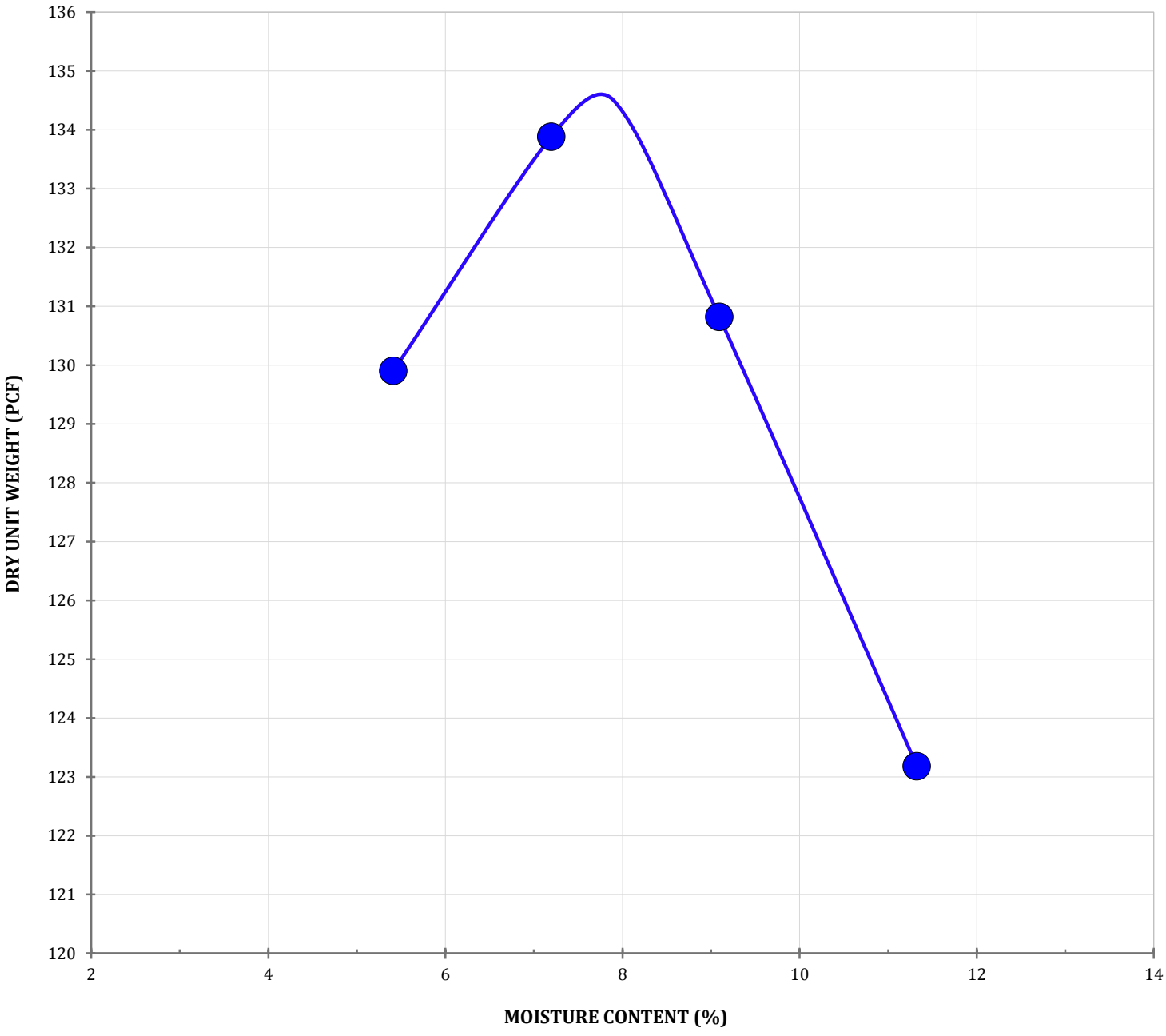
BORING	SAMPLE	DEPTH
HA02	Bulk	3.2-7.2

Project Number
39195-000

MODIFIED PROCTOR TEST RESULTS

MAXIMUM DRY UNIT WEIGHT: **134.5** PCF
OPTIMUM MOISTURE CONTENT: **7.9** %

Test Procedure
AASHTO T-180 (C)



MC	USCS	AASHTO	LL	PL	PI	% FINES	SOIL DESCRIPTION
12.1	SC	A-2-6	34	19	15	30.4	Brown clayey SAND

JAY KAY TESTING
5233 Lehman Road, Suite 110
Spring Grove, PA 17362
Phone: (410) 259-5101

Reconstruction of First Street NE

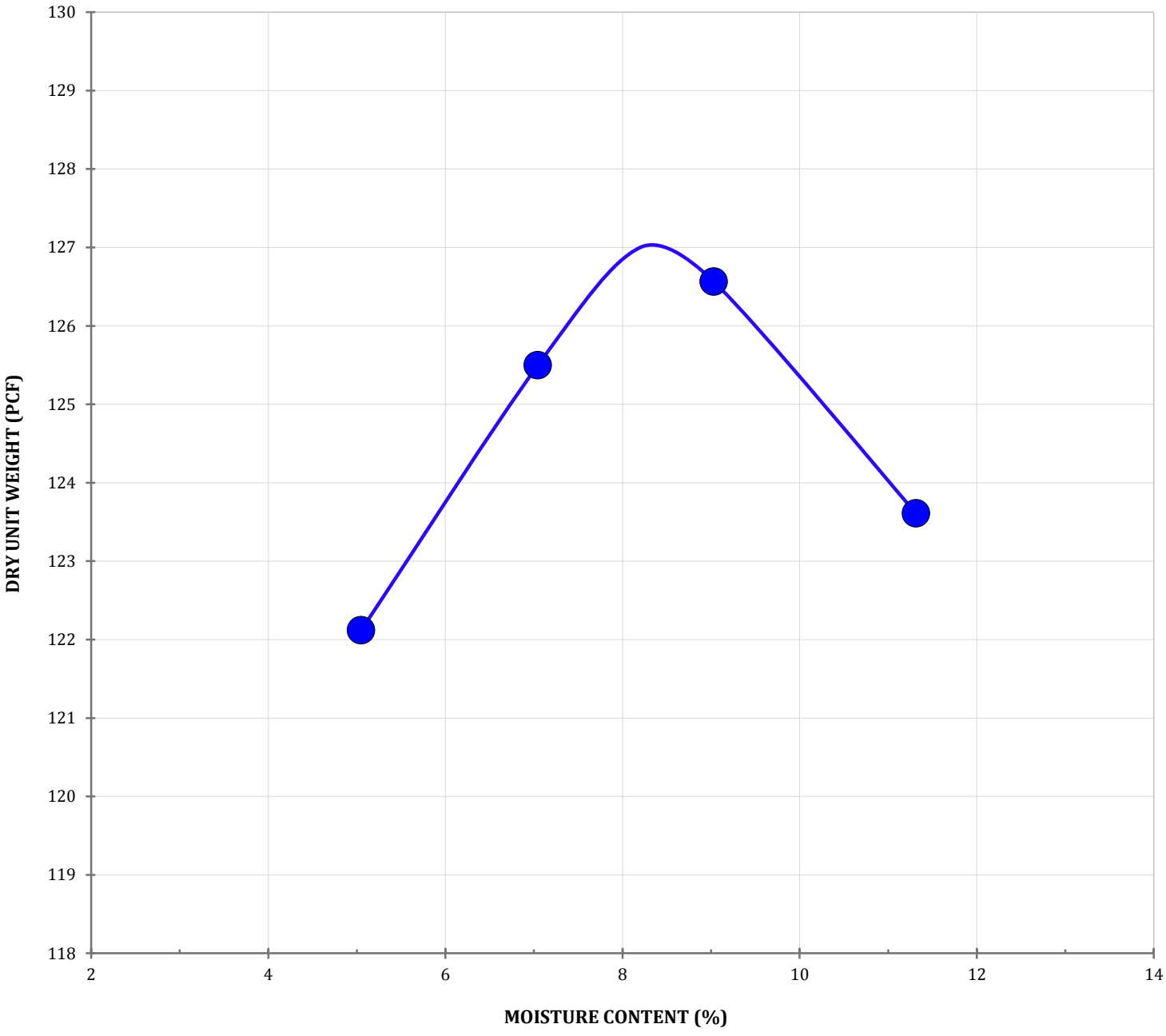
BORING	SAMPLE	DEPTH
HA04	Bulk	3.2-7.2

Project Number
39195-000

MODIFIED PROCTOR TEST RESULTS

MAXIMUM DRY UNIT WEIGHT: **127.0** PCF
OPTIMUM MOISTURE CONTENT: **8.2** %

Test Procedure
AASHTO T-180 (C)



MC	USCS	AASHTO	LL	PL	PI	% FINES	SOIL DESCRIPTION
18.9	SC	A-6	39	18	21	47.5	Brown clayey SAND

JAY KAY TESTING
5233 Lehman Road, Suite 110
Spring Grove, PA 17362
Phone: (410) 259-5101

Reconstruction of First Street NE

BORING	SAMPLE	DEPTH
HA02	Bulk	3.2-7.2

Project Number
39195-000

CALIFORNIA BEARING RATIO
STRESS PENETRATION CURVE

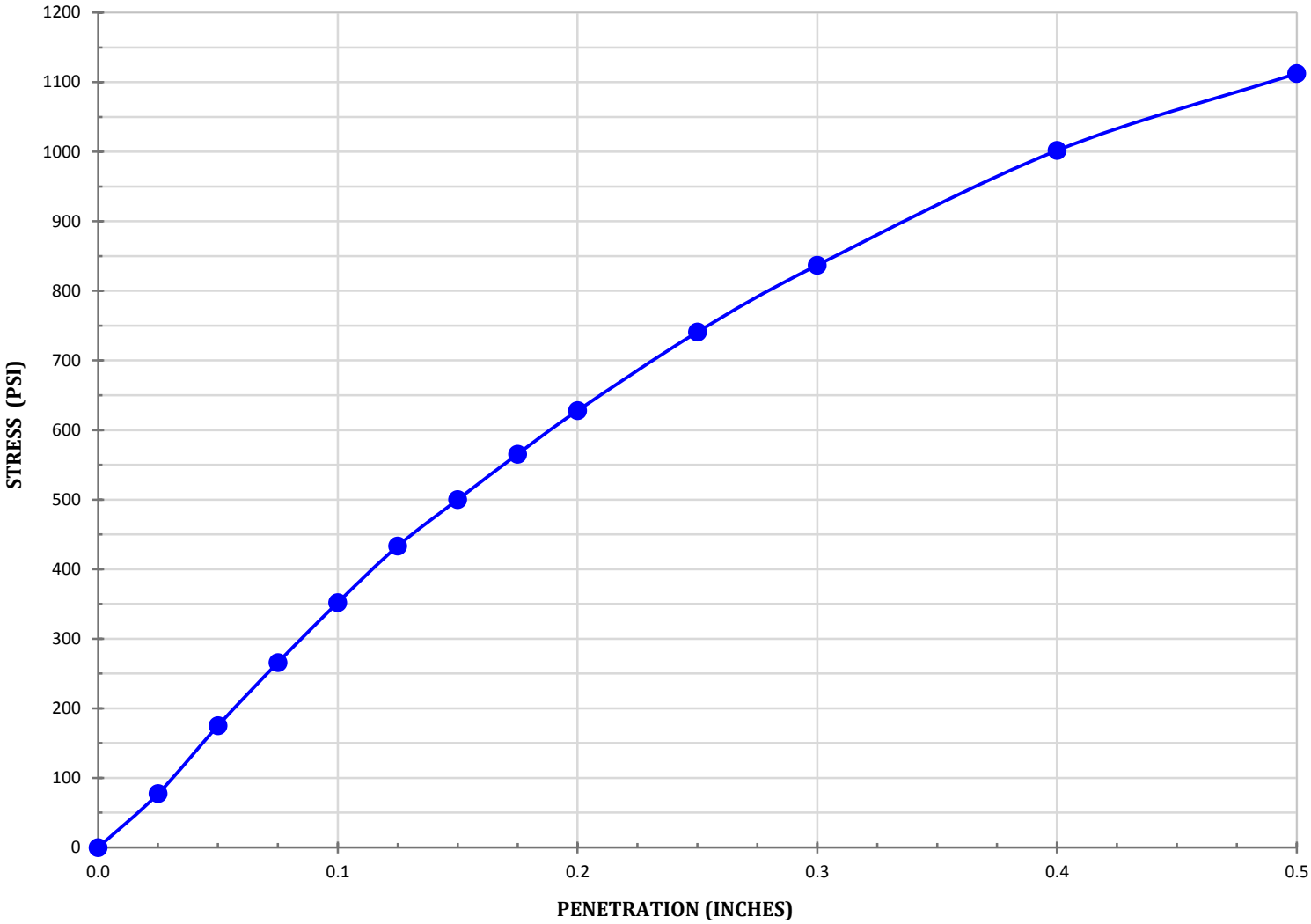
Compacted According to
AASHTO T-180 (A)

CBR at 0.1": **35.2**
CBR at 0.2": **41.9**

Tested in Accordance With
AASHTO T-193

TEST RESULTS	As Molded	After Soak
Dry Unit Weight (pcf)	128.7	128.1
Moisture Content %	8.6	10.3
% Compaction	95.7	95.2
% Swell	-	0.72

SURCHARGE
75 PSF



MC	USCS	AASHTO	LL	PL	PI	% FINES	SOIL DESCRIPTION
12.1	SC	A-2-6	34	19	15	30.4	Brown clayey SAND

JAY KAY TESTING
5233 Lehman Road, Suite 110
Spring Grove, PA 17362
Phone: (410) 259-5101

Reconstruction of First Street NE

BORING	SAMPLE	DEPTH
HA04	Bulk	3.2-7.2

Project Number
39195-000

CALIFORNIA BEARING RATIO
STRESS PENETRATION CURVE

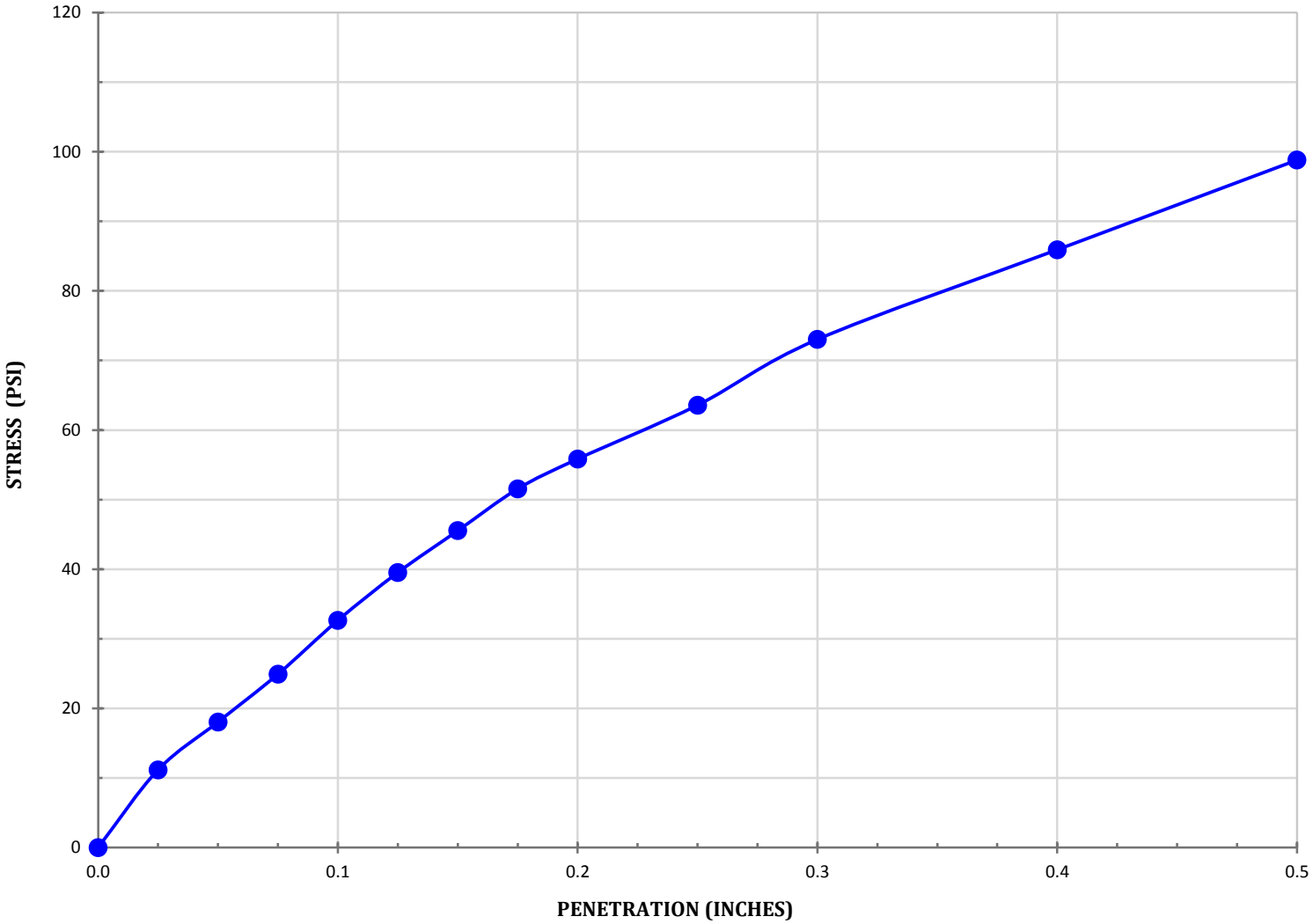
Compacted According to
AASHTO T-180 (C)

CBR at 0.1": **3.3**
CBR at 0.2": **3.7**

Tested in Accordance With
AASHTO T-193

TEST RESULTS	As Molded	After Soak
Dry Unit Weight (pcf)	120.7	116.6
Moisture Content %	8.6	15.0
% Compaction	95.0	91.8
% Swell	-	3.60

SURCHARGE
75 PSF



MC	USCS	AASHTO	LL	PL	PI	% FINES	SOIL DESCRIPTION
18.9	SC	A-6	39	18	21	47.5	Brown clayey SAND

APPENDIX D

Pavement Design Calculations

TRAFFIC DATA EVALUATION

T_I =	2013		YEAR	ADT		% Passenger Cars	94% =	6,925 vpd
T_F =	2033		**2013**	**6,700**	<--- From TLB Report	% Trucks	6% =	442 vpd
ADT_I =	6,700	vpd	2014	6,764				
ADT_F =	8,100	vpd	2015	6,828				
Calculated								
Growth Rate =	0.95%		2016	6,893				
			2017	6,959				
			2018	7,026				
			2019	7,092				
			2020	7,160				
			2021	7,228				
			2022	7,297				
			2023	7,367				
			2024	7,437				
			2025	7,508				
			2026	7,580				
			2027	7,652				
			2028	7,725				
			2029	7,798				
			2030	7,873				
			2031	7,948				
			2032	8,024				
			2033	**8,100**	<--- Design Value			

WinPAS

Pavement Thickness Design According to

1993 AASHTO Guide for Design of Pavements Structures

American Concrete Pavement Association

ESAL Determination by Traffic Factor

Agency: DDOT
Company: Haley & Aldrich, Inc.
Contractor: N/A
Project Description: Reconstruction of 1st Street, NE
Location: Massachusetts Avenue to G Street

Traffic Factor

Estimated Rigid Thickness	8.90	**inches**
Estimated Structural Number	4.5	
Terminal Serviceability	2.9	
Design Life	20	**years**
Annual Growth Rate	1.07	**percent**
Traffic Input by	Day	

Traffic Input by

Total Traffic 1-way
Design Lane Distribution 90 percent

ESAL Determination by Traffic Input

Traffic Input As

	Average Daily Traffic (ADTT)	0.00
>	**Average Daily Traffic (ADT)**	2,100.00
	% of Heavy trucks	15.00

ESAL Traffic Factors

Rigid ESAL/Truck	1.92
Flexible ESAL/Truck	1.28

Total Rigid ESAL	4,407,614
Total Flexible ESAL	2,938,410

Engineer: Derrick Shelton, P.E.

WinPAS

Pavement Thickness Design According to

1993 AASHTO Guide for Design of Pavements Structures

American Concrete Pavement Association

Flexible Design Inputs

Agency: DDOT
Company: Haley & Aldrich, Inc.
Contractor: N/A
Project Description: Reconstruction of 1st Street, NE
Location: Massachusetts Avenue to G Street

Flexible Pavement Design/Evaluation

Structural Number	4.53		**Soil Resilient Modulus**	7,500.00	**psi**
Design ESALs	2,938,410		**Initial Serviceability**	4.20	
Reliability	90.00	**percent**	**Terminal Serviceability**	2.90	
Overall Deviation	0.49				

WinPAS

Pavement Thickness Design According to

1993 AASHTO Guide for Design of Pavements Structures

American Concrete Pavement Association

ESAL Determination by Traffic Factor (FLEXIBLE DESIGN)

Agency: DDOT
Company: Haley & Aldrich, Inc.
Contractor: N/A
Project Description: Reconstruction of 1st Street, NE
Location: Massachusetts Avenue to G Street

Traffic Factor

Estimated Structural Number	4.5	
Terminal Serviceability	2.9	
Design Life	20	**years**
Annual Growth Rate	1.07	**percent**
Traffic Input by	Day	

Traffic Input by

Total Traffic 1-way
Design Lane Distribution 90 percent

ESAL Determination by Traffic Input

Traffic Input As

	Average Daily Traffic (ADTT)	0.00
>	**Average Daily Traffic (ADT)**	2,100.00
	% of Heavy trucks	15.00

ESAL Traffic Factors

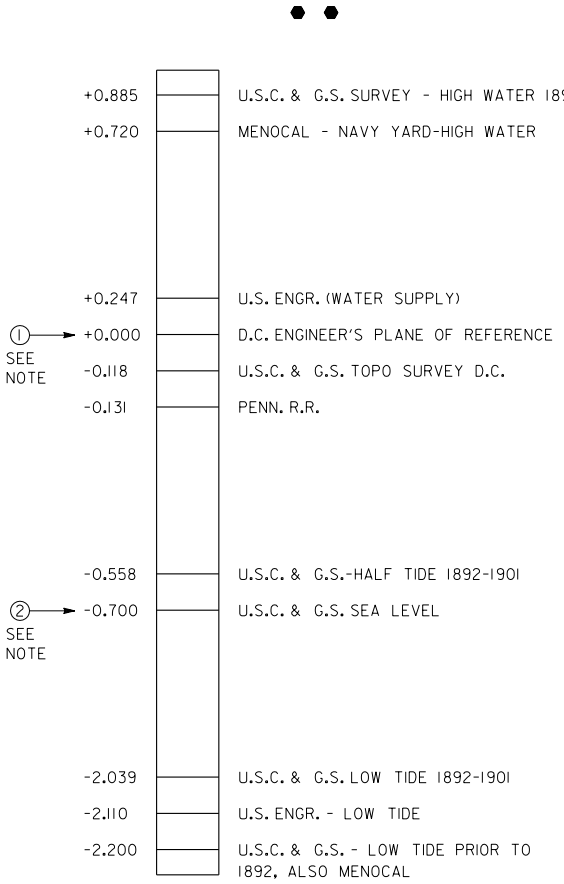
Rigid ESAL/Truck	1.92
Flexible ESAL/Truck	1.28

Total Rigid ESAL	4,407,614
Total Flexible ESAL	2,938,410

Engineer: Derrick Shelton, P.E.

APPENDIX M
DDOT STANDARD DETAILS

DIFFERENCES IN DATUM



CAPITOL B.M. ●

D.C. ENGRS.	89.840
U.S.C. & G.S. SEA LEVEL	90.540
TOPO SURVEY	89.958
PENN. R.R.	89.970
U.S. ENGRS. RIVER IMPT.	92.050

U.S.C. & G.S. REPORT ON COMPARISONS - SEE NO. 6845, VOL. D, 1892 D.C. ENGRS. DEPT. FILES.

NOTES:

● CAPITOL BENCH MARK - APEX OF BRONZE BOLT SET IN EAST WINDOW SILL OF THE SOUTH SIDE OF THE SENATE WING OF U.S. CAPITOL. IT WAS PLACED IN POSITION IN JUNE 1894 AND IS INSCRIBED "CAPITOL B.M."

● ● ELEV. DIFFS. TO BE ADDED TO OR SUBTRACTED FROM THE RESPECTIVE DATUMS TO ARRIVE AT D.C. DATUM.

① D.C. DEPT. OF TRANSPORTATION DATUM.

② U.S.C. & G.S. DATUM

DATE	APPR.	REFERENCE
REVISED		
ISSUED:		

RECOMMENDED: DEPUTY CHIEF ENGINEER

APPROVED: CHIEF TRANSPORTATION ENGINEER

DIFFERENCES IN DATUM

d. DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. **GEN.04**

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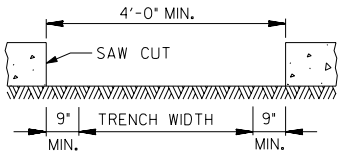
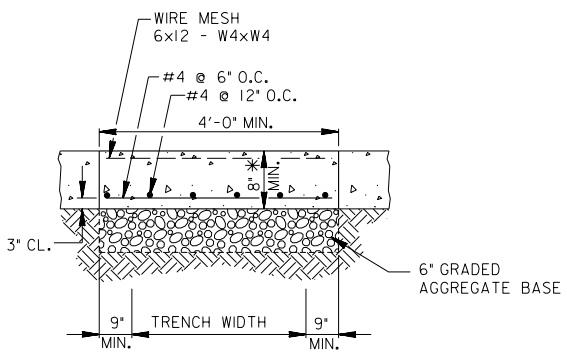
CLEAN AND WET EDGES OF
CUTS BEFORE PLACING CONCRETE

COMPACT AND DAMPEN
SUBGRADE BEFORE PLACING BAR

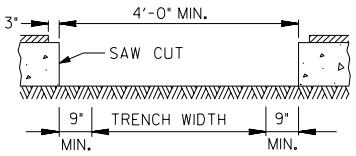


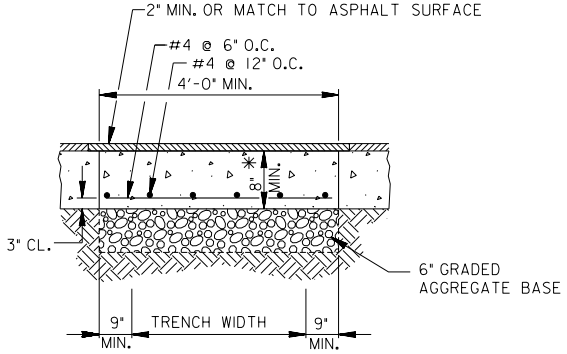


CONCRETE PAVEMENT

CLEAN AND WET EDGES OF
CUTS BEFORE PLACING CONCRETE

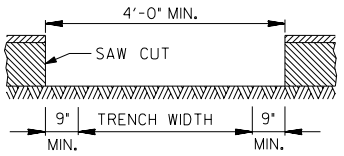
COMPACT AND DAMPEN
SUBGRADE BEFORE PLACING BAR

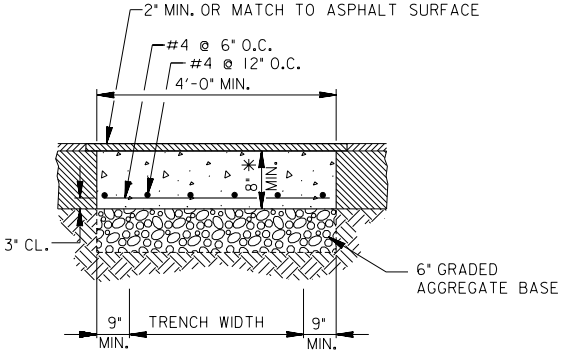




CONCRETE PAVEMENT
WITH ASPHALT OVERLAY

COMPACT AND DAMPEN
SUBGRADE BEFORE PLACING BAR





ASPHALT PAVEMENT

✳ 8" MIN. OR MATCH TO
EXIST. PAVEMENT SECTION

NOTES:

1. ALL EXPOSED EDGES OF EXISTING ASPHALT AND SURFACE OF CONCRETE BASE SHALL BE PRIMED BEFORE ASPHALT MIXTURE IS PLACED.

2. IF THE TRENCH CUT OCCURS NEAR EXISTING PAVEMENT JOINTS, PERFORM PAVEMENT REPAIR WORK ACCORDING TO DETAILS SHOWN ON DWG. 501.01 THRU 501.10.

			RECOMMENDED: DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: CHIEF TRANSPORTATION ENGINEER
REVISED			
ISSUED:			
		REFERENCE	

TRENCH REPAIR DETAIL

d. DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 207.01

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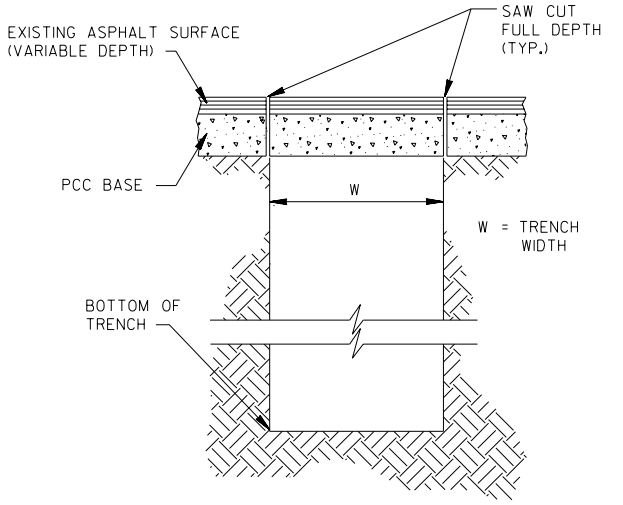
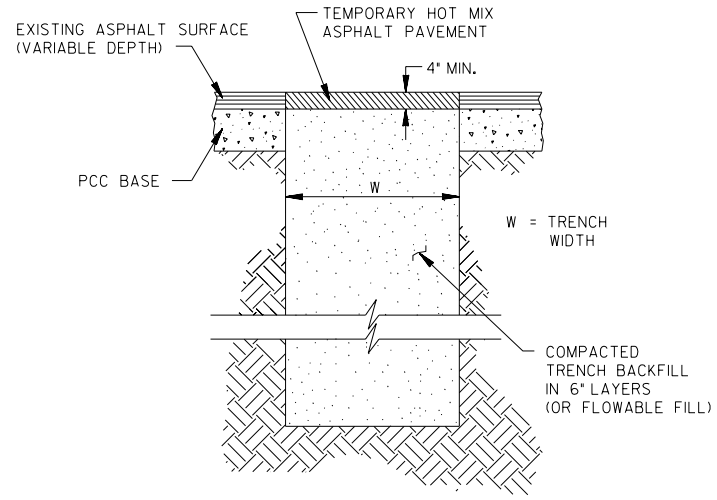
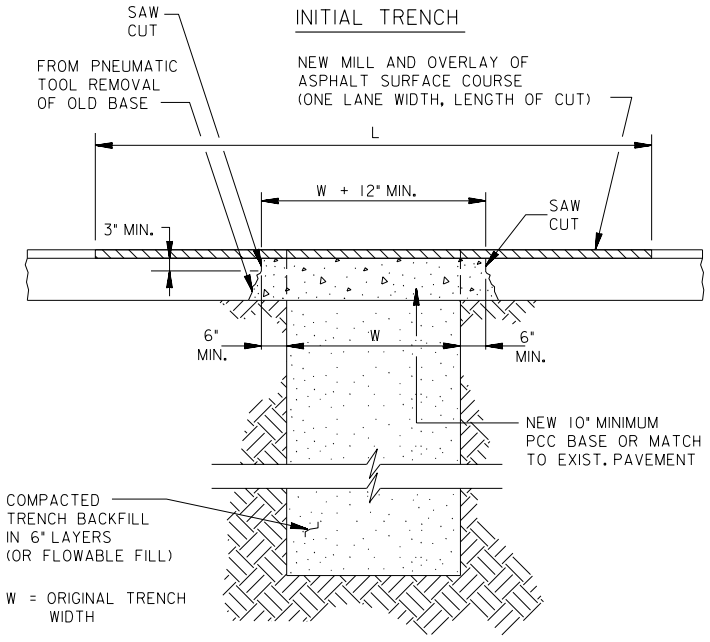


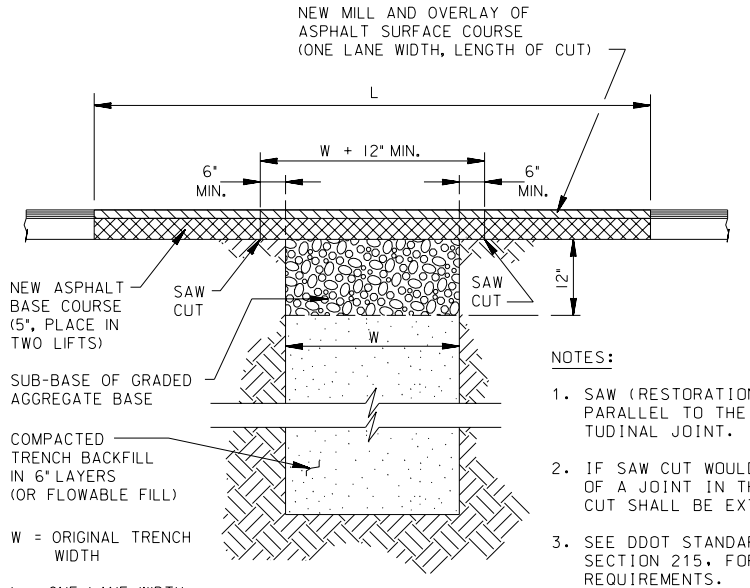
INITIAL TRENCH



TEMPORARY RIDING SURFACE



RESTORATION OF PCC BASE AND ASPHALT SURFACE



NOTES:

1. SAW (RESTORATION) CUT SHALL BE PARALLEL TO THE ROADWAY LONGITUDINAL JOINT.
2. IF SAW CUT WOULD BE WITHIN 2 FT. OF A JOINT IN THE BASE COURSE, CUT SHALL BE EXTENDED TO THE JOINT.
3. SEE DDOT STANDARD SPECIFICATIONS, SECTION 215, FOR ADDITIONAL REQUIREMENTS.

RESTORATION OF FLEXIBLE PAVEMENT

DATE	APPR.		RECOMMENDED: DEPUTY CHIEF ENGINEER
REVISED			
ISSUED:		REFERENCE	APPROVED: CHIEF TRANSPORTATION ENGINEER

PAVEMENT RESTORATION
UTILITY LINES - 1

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 215.01

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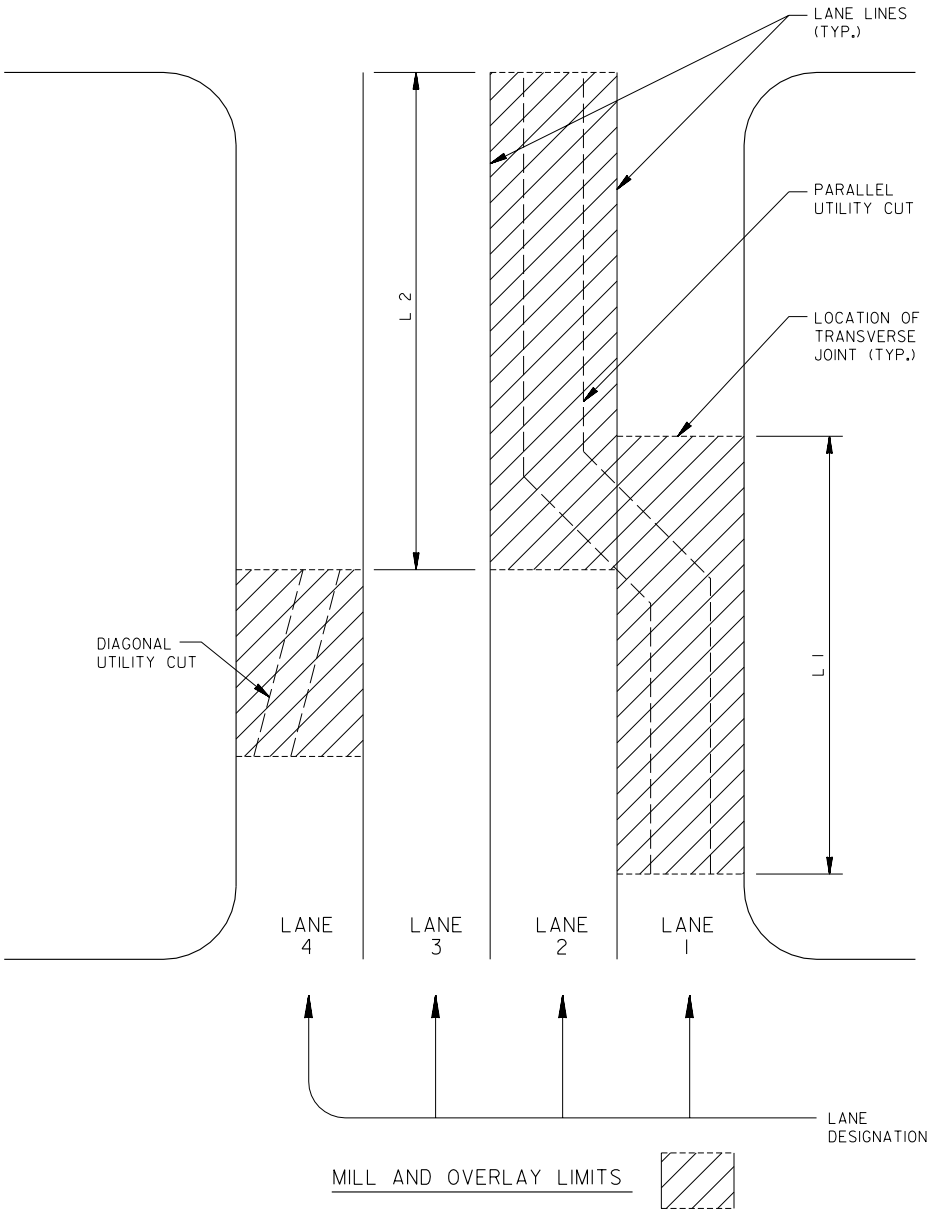

PAVEMENT RESTORATION NOTES:

1. WIDTH: THE CONTRACTOR SHALL MILL AND OVERLAY THE ENTIRE WIDTH OF THE AFFECTED LANE OR LANES.

2. LENGTH: IF THE UTILITY CUT IS LESS THAN 30 FT. IN LENGTH, THE CONTRACTOR SHALL MILL AND OVERLAY THE LENGTH OF THE CUT PLUS THE SECTIONS FROM EACH END OF THE CUT TO THE NEAREST TRANSVERSE PAVEMENT JOINT. IF THE UTILITY CUT IS 30 FT. OR GREATER IN LENGTH, THE CONTRACTOR SHALL MILL AND OVERLAY THE ENTIRE LENGTH OF THE BLOCK.

3. SPECIAL CASES:

   (A) SPECIAL CASE 1 - UTILITY CUT IN TWO ADJACENT TRAFFIC LANES AND CROSSING A LONGITUDINAL PAVEMENT JOINT: (SEE LANES 1 AND 2)

   L1 = DISTANCE IN A TRAFFIC LANE FROM THE START OF A UTILITY REPAIR TO THE TRANSVERSE PAVEMENT JOINT NEAREST TO THE CROSS-OVER TO THE ADJACENT LANE.

   L2 = DISTANCE IN AN ADJACENT LANE FROM THE END OF THE UTILITY REPAIR TO THE TRANSVERSE PAVEMENT JOINT NEAREST TO THE CROSS-OVER FROM THE ADJACENT LANE.

   (i) IF L1 IS LESS THAN 30 FT., THE CONTRACTOR SHALL MILL AND OVERLAY THE LENGTH OF L1 PLUS THE SECTIONS FROM EACH END OF L1 TO THE NEAREST TRANSVERSE JOINT. IF L2 IS LESS THAN 30 FT., THE SAME PAVING REQUIREMENTS APPLY.

   (ii) IF EITHER L1 OR L2 ARE GREATER THAN 30 FT. IN LENGTH, THE CONTRACTOR SHALL MILL AND OVERLAY THE AFFECTED LANE(S) FOR THE FULL LENGTH OF THE BLOCK.

   (iii) IN ALL CASES, THE CONTRACTOR SHALL MAKE ALL CUTS IN THE BASE COURSE PARALLEL TO EITHER LONGITUDINAL OR TRANSVERSE JOINTS.

   (B) SPECIAL CASE 2 - DIAGONAL UTILITY CUT:

   IF THE UTILITY CUT IS DIAGONAL, THE CONTRACTOR MUST REPLACE THE BASE COURSE SLAB(S) THROUGH WHICH THE CUT RUNS FROM JOINT TO JOINT. THE PREVIOUS REQUIREMENTS ON THE LENGTH AND WIDTH OF MILLING AND OVERLAYING APPLY.

   (C) FULL SLAB REPLACEMENT OPTION:

   THE CONTRACTOR MAY FULLY REPLACE ALL BASE COURSE SLABS AFFECTED BY UTILITY CUTS IN LIEU OF THE ABOVE OPTION OF PARTIAL REPLACEMENT AND MILLING AND OVERLAYING OF THE SURFACE COURSE.

DATE	APPR.	
REVISED		
ISSUED:		
		REFERENCE

RECOMMENDED: DEPUTY CHIEF ENGINEER

APPROVED: CHIEF TRANSPORTATION ENGINEER

PAVEMENT RESTORATION UTILITY LINES - 2

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 215.02

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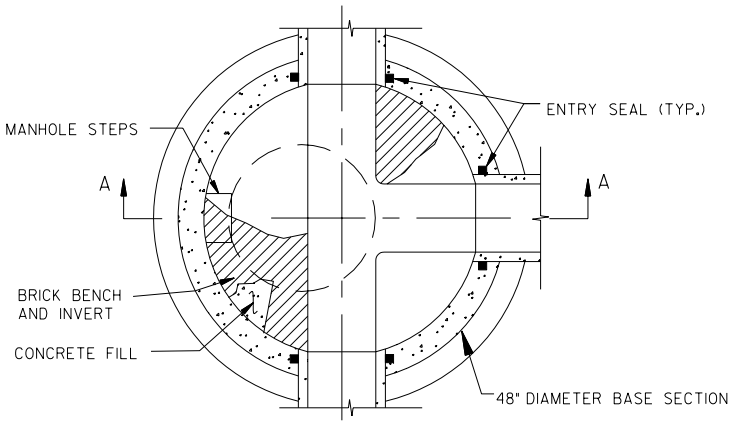
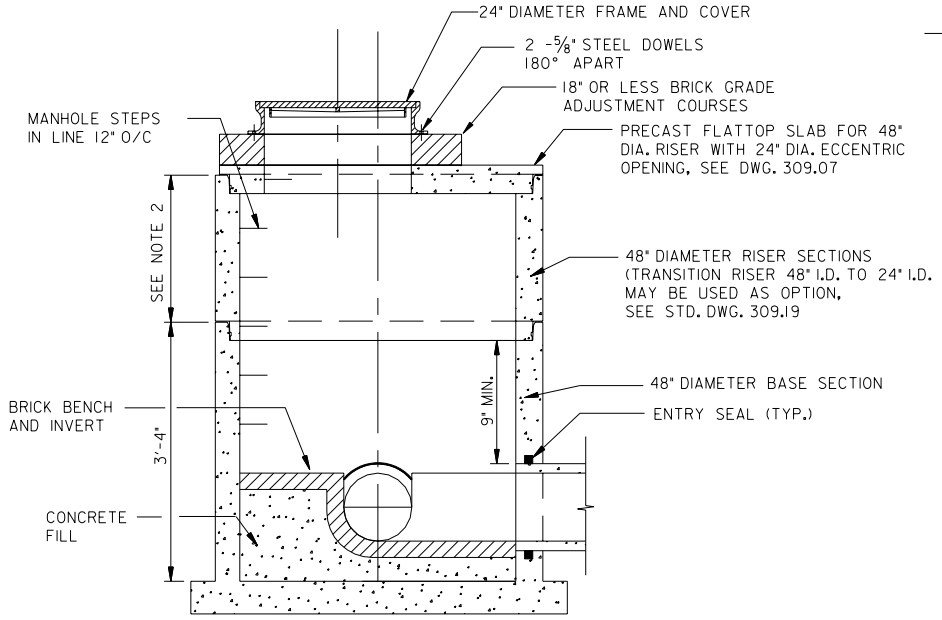
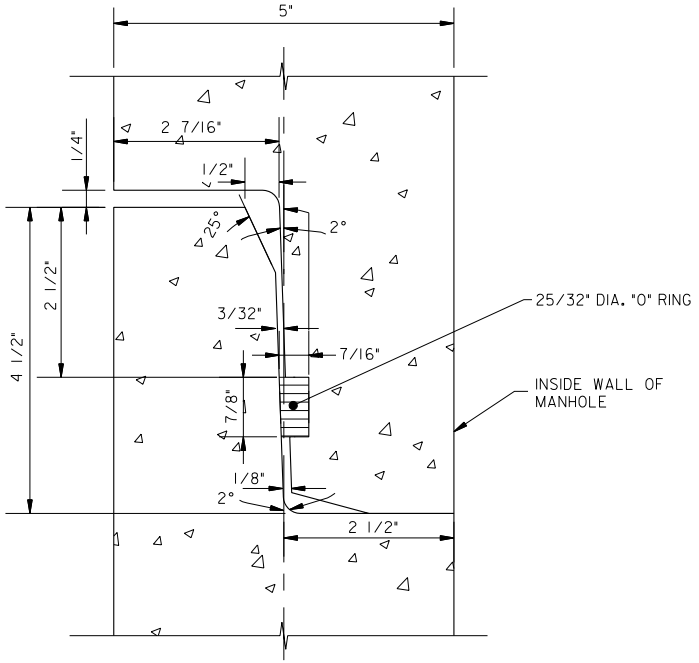


SECTIONAL PLAN



SECTION A - A



PIPE RISER JOINT DETAIL
(48" DIAMETER RISER)

NOTES:

1. STRUCTURAL CALCULATIONS MUST BE SUBMITTED FOR APPROVAL PRIOR TO MANUFACTURE OF BASE AND TRANSITION SLABS.
2. 1', 2', 3' OR 4' OR A COMBINATION THEREOF AS NEEDED FOR GRADE ADJUSTMENT.
3. PROVIDE ENTRY SEALS ON SANITARY AND COMBINED SEWERS CONNECTIONS 24" AND SMALLER.
4. FOR CLARITY, REINFORCING NOT SHOWN.

DATE	APPR.	
REVISED		
ISSUED:		
		REFERENCE

RECOMMENDED: DEPUTY CHIEF ENGINEER

APPROVED: CHIEF TRANSPORTATION ENGINEER

PRECAST CONCRETE MANHOLE

FOR NEW 10" THRU 21" DIAMETER SEWERS (48" DIAMETER PRECAST BASE)

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 309.02

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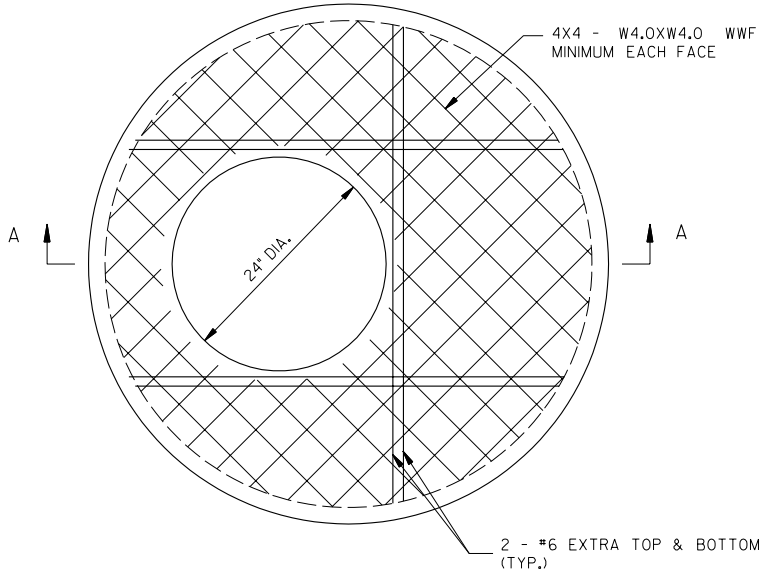

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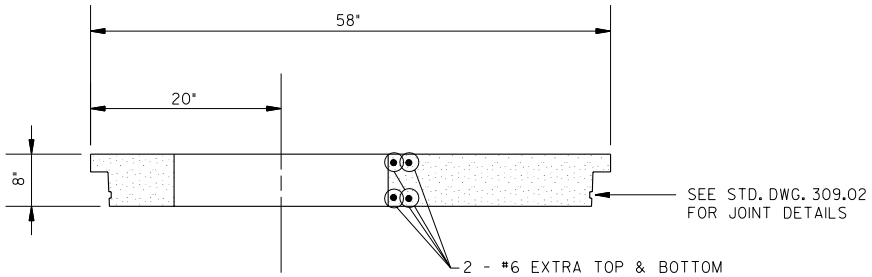

SECTION A - A

NOTES:

1. ALL CONCRETE TO BE CLASS B, AIR ENTRAINED, TYPE II CEMENT.
2. REINFORCING STEEL SHALL CONFORM TO AASHTO M31, GRADE 60.
3. WWF PER AASHTO M55.

			RECOMMENDED: DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: CHIEF TRANSPORTATION ENGINEER
REVISED			
ISSUED:		REFERENCE	

PRECAST FLAT TOP SLAB

FOR 48" DIAMETER MANHOLE RISER WITH 24" DIAMETER ECCENTRIC OPENING

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 309.07

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Friday, April 03, 2009 AT 2:15 PM

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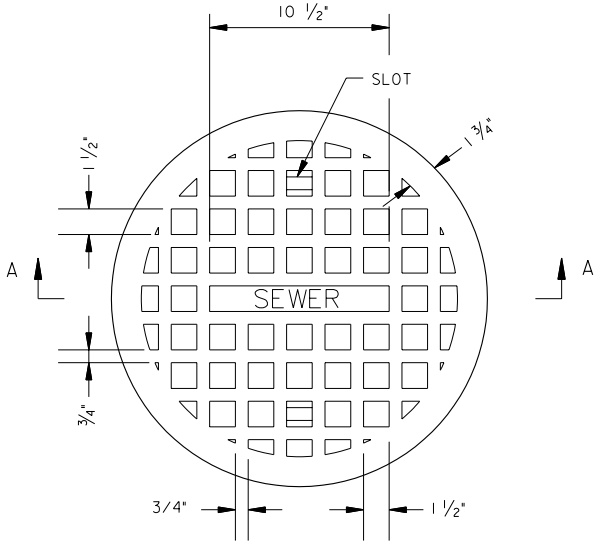
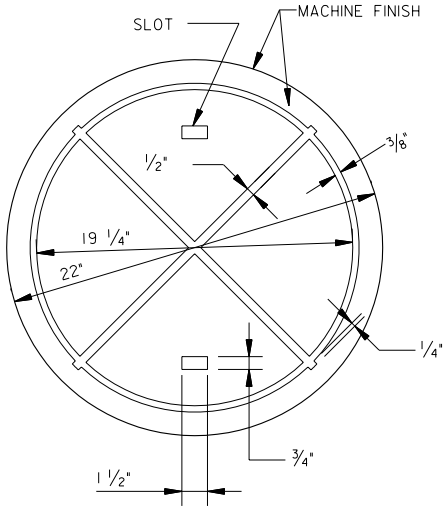
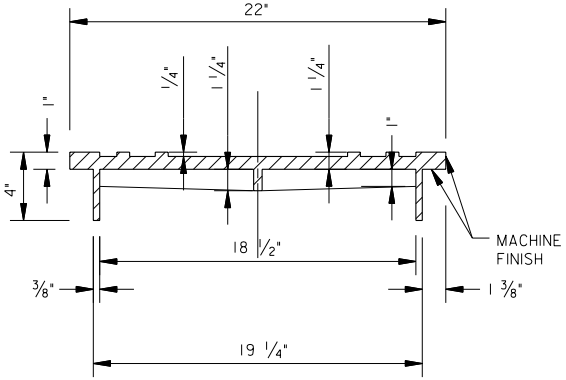


PLAN - COVER TOP



PLAN - COVER BOTTOM



SECTION A - A

NOTES:

1. GRAY IRON CASTINGS PER AASHTO M105, CLASS 30A.
2. ALL MACHINE FINISH TO BE A.S.A. SPECIFICATION, ROUGHNESS SYMBOL 250, TOLERANCE -0" +1/16".
3. THE WORD "SEWER" IN 1" LETTER SHALL BE CAST IN THE DEPRESSION SHOWN IN THE CENTER OF TOP OF COVER AND TO BE FLUSH WITH SURFACE OF COVER.

DATE	APPR.	
REVISED		
ISSUED:		
		REFERENCE

RECOMMENDED: DEPUTY CHIEF ENGINEER

APPROVED: CHIEF TRANSPORTATION ENGINEER

DETAILS OF 24-INCH CAST IRON MANHOLE COVER

(SEWER)

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 309.11

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Friday, April 03, 2009 AT 2:15 PM

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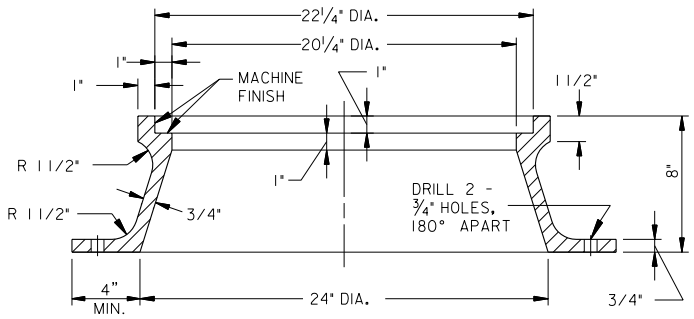
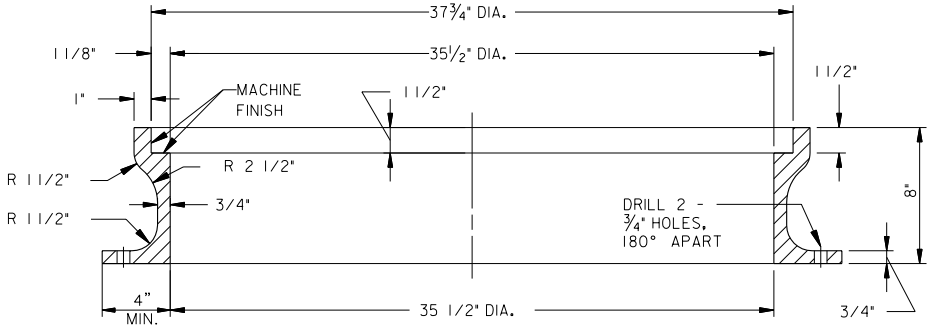
DC WASA DWG. S - 90.24



SECTION OF 24-INCH DIAMETER FRAME



SECTION OF 36-INCH DIAMETER FRAME

NOTES:

1. GRAY IRON CASTINGS PER AASHTO M105, CLASS 30A.
2. ALL MACHINE FINISH TO BE A.S.A. SPECIFICATION, ROUGHNESS SYMBOL 250, TOLERANCE -0" +1/16".

			RECOMMENDED: DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: CHIEF TRANSPORTATION ENGINEER
REVISED			
ISSUED:			
		REFERENCE	

DETAILS OF 24" & 36" DIAMETER CAST IRON FRAMES

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 309.13

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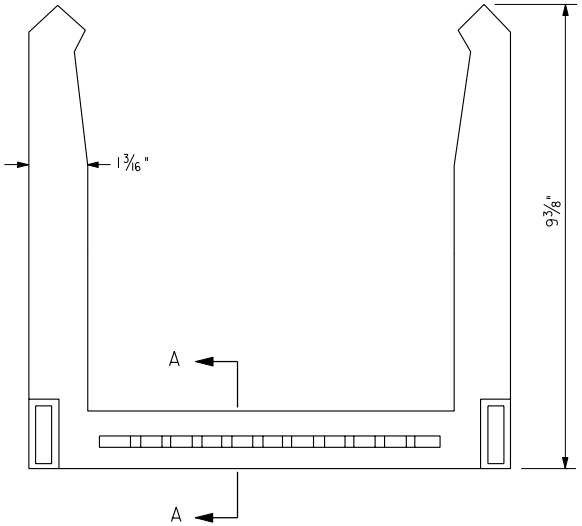
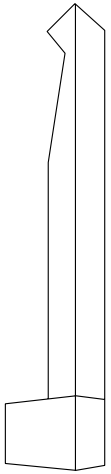
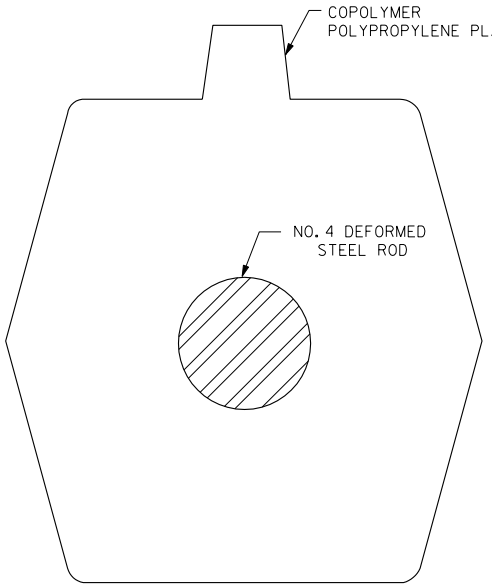
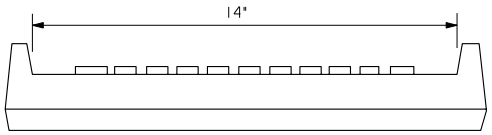
Friday, April 03, 2009 AT 12:15 PM

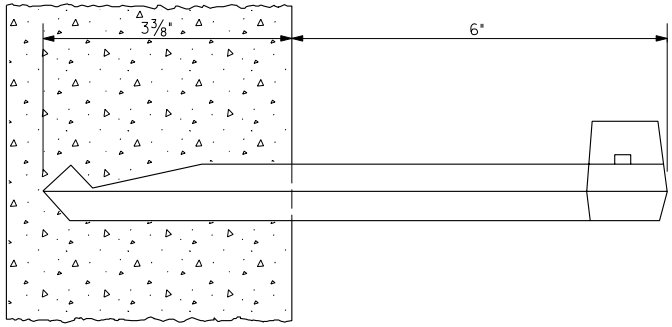






SECTION A-A





NOTES:

1. REFER TO DDOT STD. SPECIFICATIONS 309.04(C), 309.04(D) AND 821.07 FOR ADDITIONAL MANHOLE STEP DETAILS.
2. STEPS SHALL BE PLACED INTO WET CONCRETE WALL DURING MANUFACTURE OR MORTARED INTO HOLES AFTER CONCRETE HAS SET.

DATE	APPR.	
REVISED		
ISSUED:		
		REFERENCE

RECOMMENDED: DEPUTY CHIEF ENGINEER

APPROVED: CHIEF TRANSPORTATION ENGINEER

MANHOLE STEPS

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 309.14

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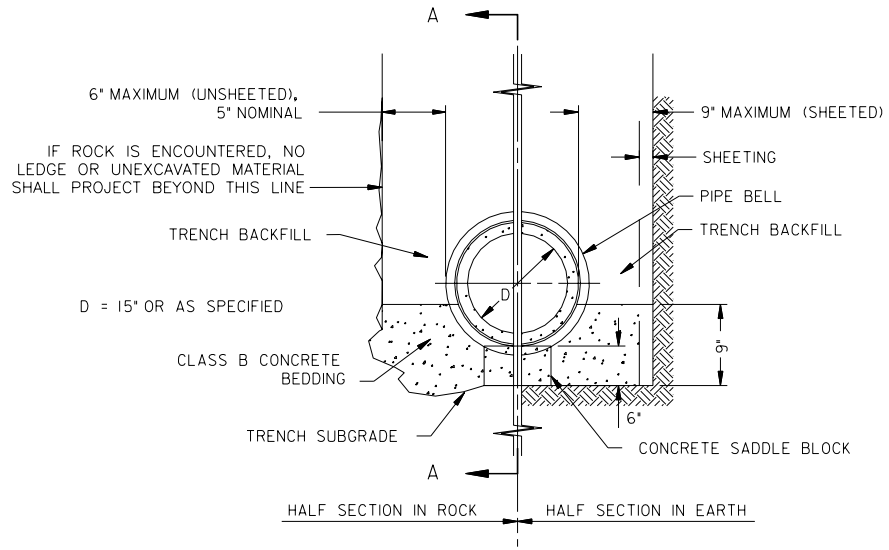
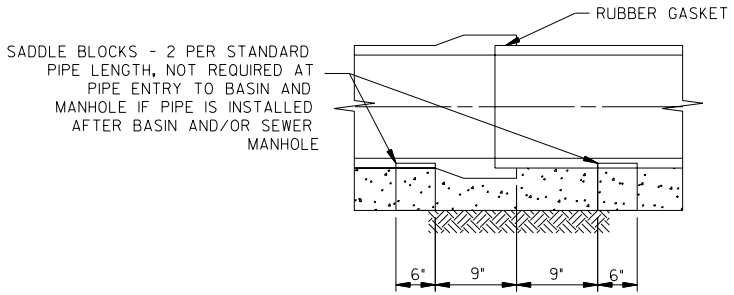
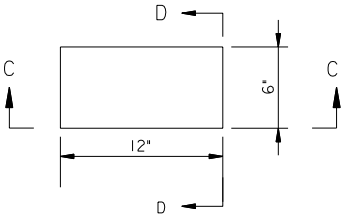
Friday, April 03, 2009 AT 12:15 PM

DC WASA DWG. S - 12.02
DC WASA DWG. S - 30.04

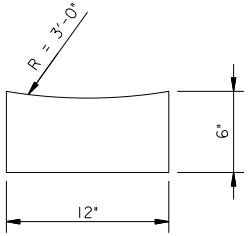




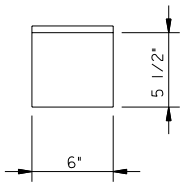
SECTION A - A



PLAN - BLOCK



VIEW C - C



VIEW D- D

NOTES:

1. SEE DDOT STANDARD SPECIFICATIONS, SECTION 310.
2. CLASS B CONCRETE, AIR ENTRAINED, TYPE II CEMENT.

CONCRETE SADDLE BLOCK

			RECOMMENDED: DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: CHIEF TRANSPORTATION ENGINEER
REVISED			
ISSUED:			
		REFERENCE	

CATCH BASIN CONNECTION PIPE

TRENCH LAYING CONDITION

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 310.04

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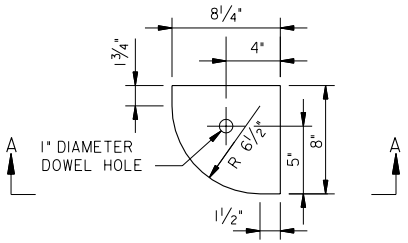
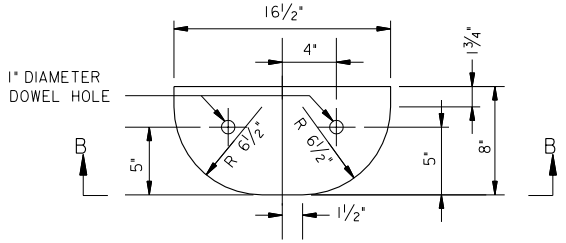
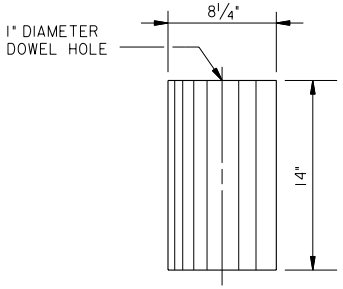
Friday, April 03, 2009 AT 2:15 PM



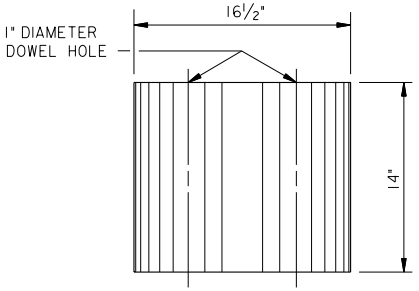
PLAN - CORNER CHEEK BLOCK



PLAN - SUPPORT CHEEK BLOCK



SECTION A - A



SECTION B - B

NOTES:

1. SEE DDOT STANDARD SPECIFICATIONS, SECTION 310.
2. CLASS B CONCRETE, AIR ENTRAINMENT, TYPE II CEMENT.
3. SEE DDOT STANDARD DRAWING 310.04 FOR SADDLE BLOCK DETAIL.

			RECOMMENDED: DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: CHIEF TRANSPORTATION ENGINEER
REVISED			
ISSUED:			
		REFERENCE	

DETAILS FOR CHEEK BLOCKS

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 310.05

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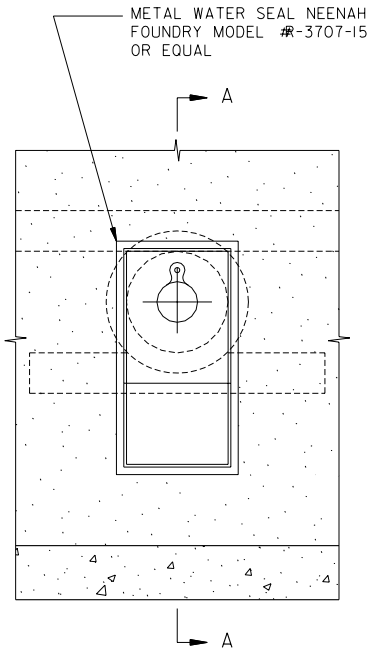
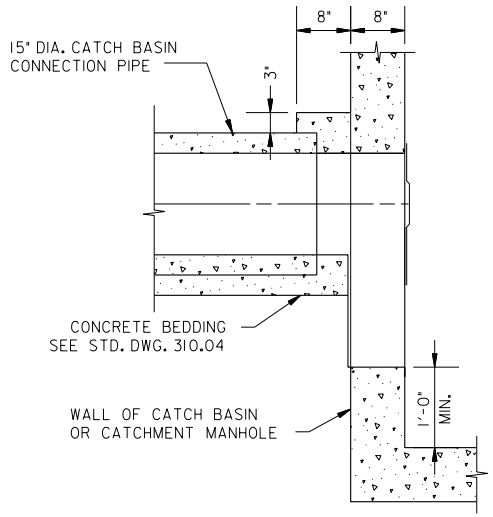
Friday, April 03, 2009 AT 2:15 PM

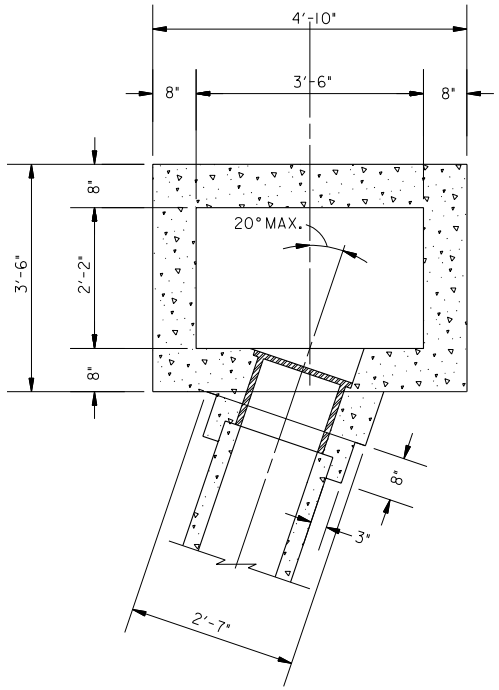
DC WASA DWG. S - 30.20.1
DC WASA DWG. S - 30.20.2



FRONT ELEVATION



SECTION A - A



SECTIONAL PLAN
NON-PERPENDICULAR
CATCH BASIN CONNECTION PIPE

NOTES:

1. GRAY IRON CASTINGS PER AASHTO M105, CLASS 30A.
2. ALL MACHINE FINISH TO BE A.S.A. SPECIFICATION, ROUGHNESS SYMBOL 250, TOLERANCE -0" +1/16".
3. WHEN THE CATCH BASIN CONNECTION PIPE IS NOT PERPENDICULAR TO THE CATCH BASIN WALL, THE WALL SHALL BE MODIFIED TO INSTALL WATER SEAL ON SAME ALIGNMENT AS THE CATCH BASIN PIPE. SEE SECTIONAL PLAN.

DATE	APPR.	
REVISED		
ISSUED:		
		REFERENCE

RECOMMENDED: DEPUTY CHIEF ENGINEER

APPROVED: CHIEF TRANSPORTATION ENGINEER

WATER SEAL

FOR 15" DIAMETER CATCH BASIN CONNECTION (COMBINED SYSTEM ONLY)

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 310.08

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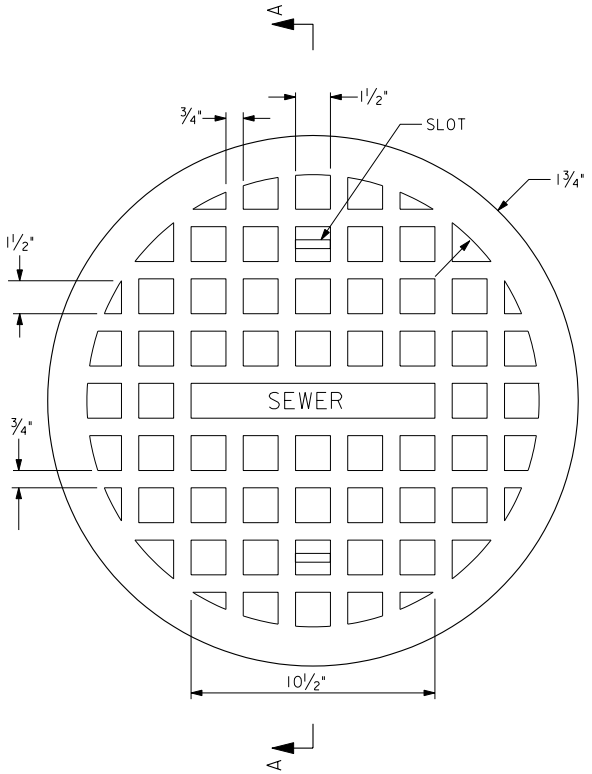
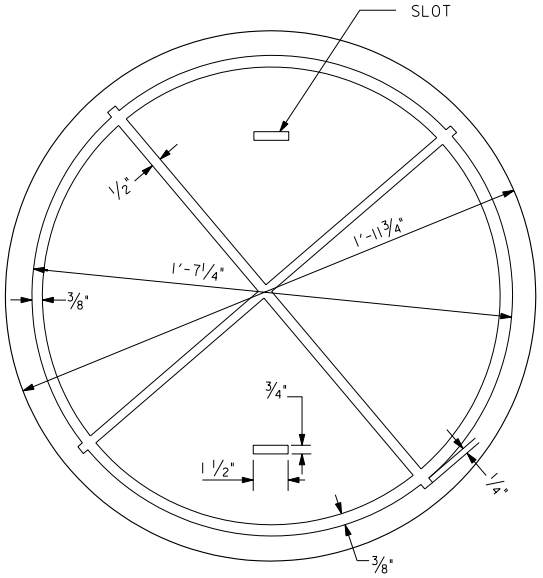
Friday, April 03, 2009 AT 12:15 PM

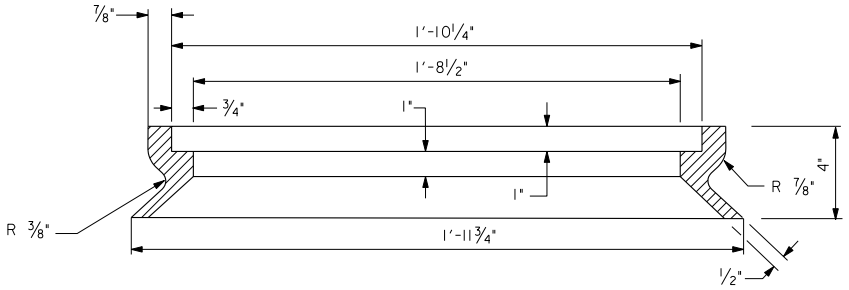
DC WASA DWG. S - 90.31



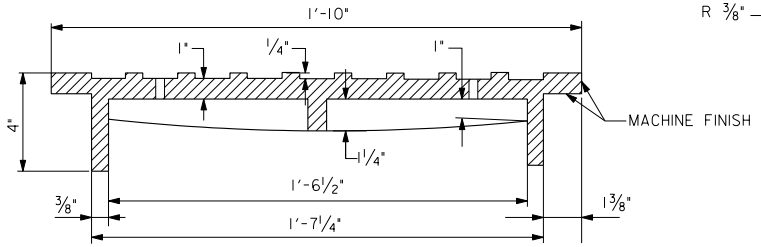
PLAN - COVER TOP



PLAN - COVER BOTTOM



SECTION OF FRAME



SECTION A-A

NOTES:

1. GRAY IRON CASTINGS PER AASHTO M105, CLASS 30A, OR 35.
2. ALL MACHINE FINISH TO BE A.S.A. SPECIFICATIONS, ROUGHNESS SYMBOL 250, TOLERANCE -0"+1/16".
3. THE WORD "SEWER" IN 1" LETTERS TO BE CAST IN THE DEPRESSION SHOWN IN THE CENTER OF TOP OF COVER AND TO BE FLUSH WITH SURFACE OF COVER.

DATE	APPR.	
REVISED		
ISSUED:		
		REFERENCE

RECOMMENDED: DEPUTY CHIEF ENGINEER

APPROVED: CHIEF TRANSPORTATION ENGINEER

DETAILS OF 24-INCH CAST IRON FRAME COVER

(FOR SEWER BASIN TOP)

d. DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 310.13

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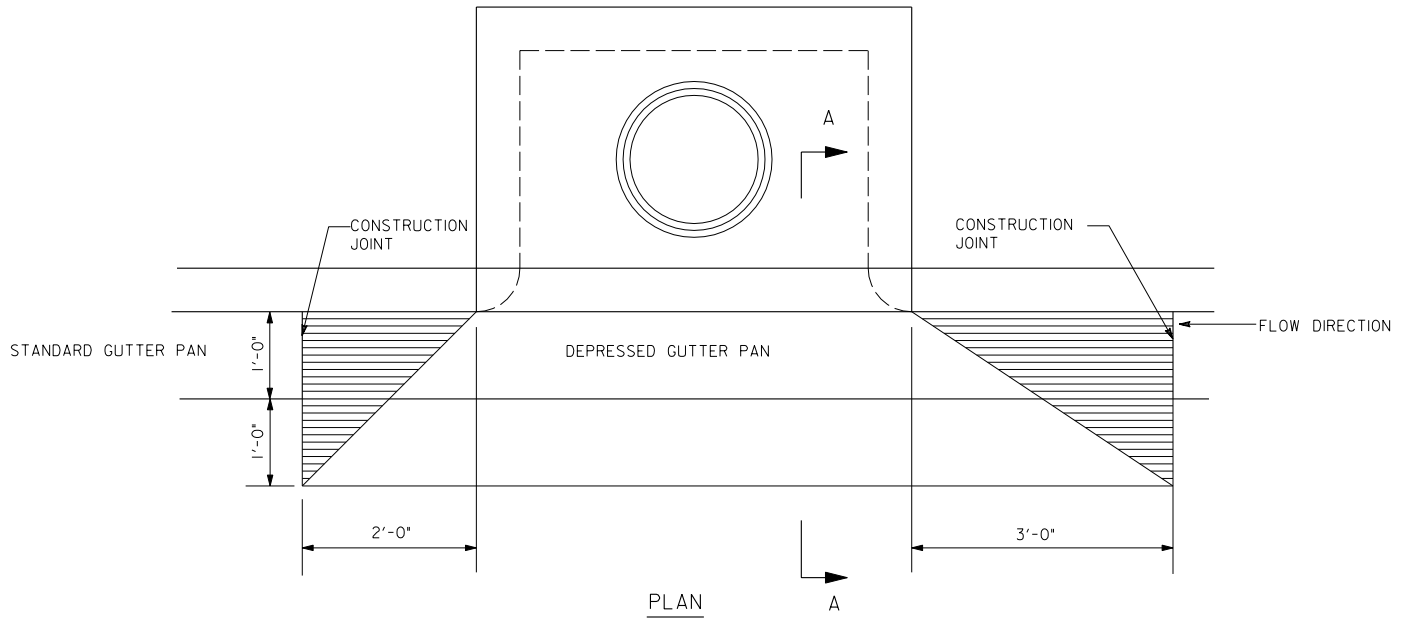
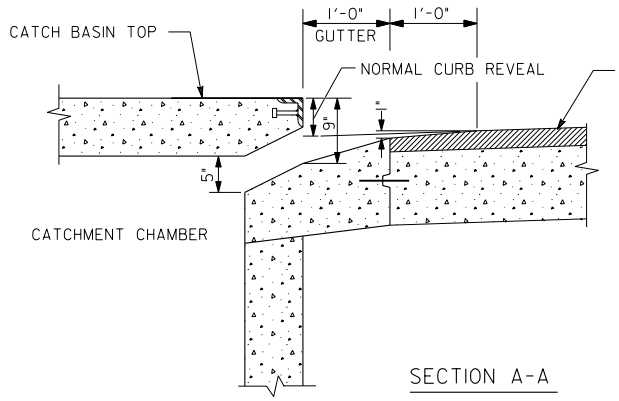
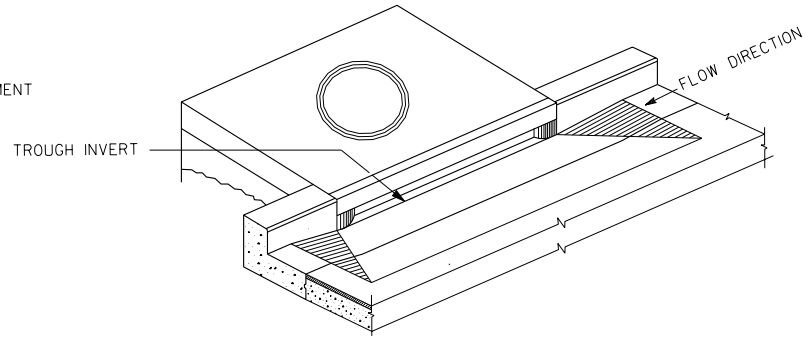
Friday, April 03, 2009 AT 12:15 PM



PLAN



SECTION A-A



ISOMETRIC VIEW

			RECOMMENDED: DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: CHIEF TRANSPORTATION ENGINEER
REVISED			
ISSUED:			
		REFERENCE	

METHOD OF DEPRESSING GUTTER

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. **310.15**

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Friday, April 03, 2009 AT 12:16 PM

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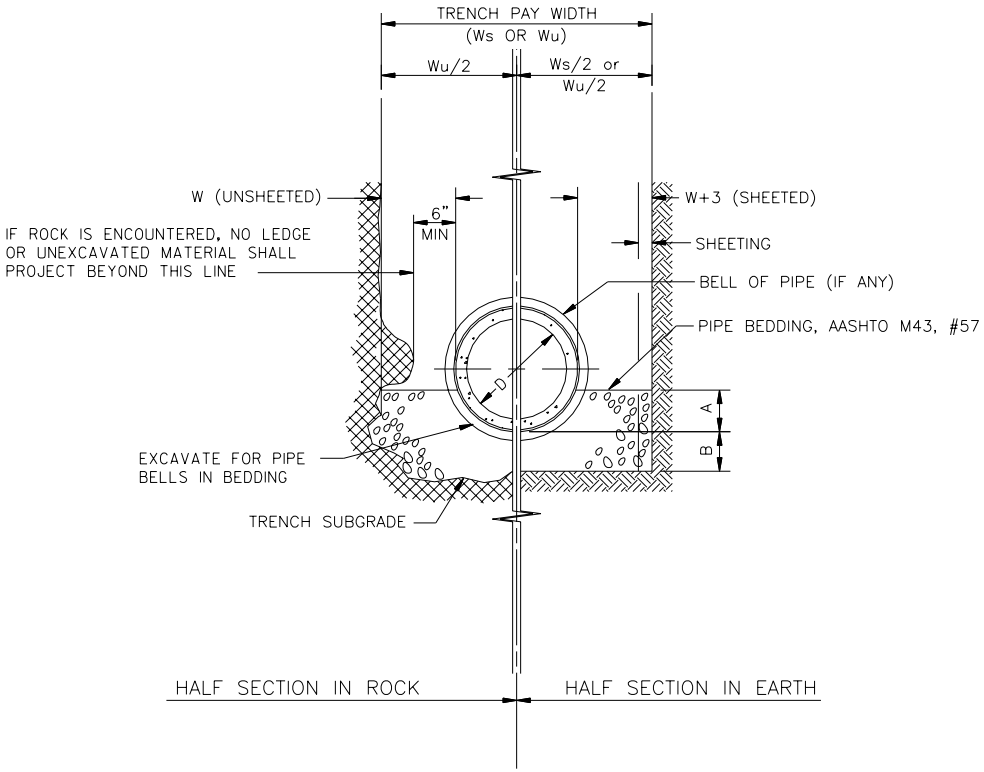
DC WASA DWG. S - 12.01.2



PIPE DIAMETER	PIPE BEDDING DIMENSION				TRENCH PAY WIDTH	
D	W	A	B		UNSHEETED Wu	SHEETED Ws
			IN SOIL	IN ROCK		
12"	12"	5"	3"	6"	3' – 4"	3' – 10"
15"	12"	5"	3"	6"	3' – 7"	4' – 1"
18"	12"	6"	3"	6"	3' – 11"	4' – 5"
21"	12"	7"	3"	6"	4' – 3"	4' – 9"
24"	12"	8"	3"	6"	4' – 6"	5' – 0"
27"	18"	8"	3"	6"	5' – 9"	6' – 3"
30"	18"	9"	4"	9"	6' – 1"	6' – 7"
33"	18"	10"	4"	9"	6' – 5"	6' – 11"
36"	18"	10"	4"	9"	6' – 8"	7' – 2"
42"	18"	13"	4"	9"	7' – 3"	7' – 9"
48"	24"	15"	4"	9"	8' – 10"	9' – 4"
54"	24"	16"	4"	9"	9' – 5"	9' – 11"
60"	24"	18"	4"	9"	10' – 0"	10' – 6"
66"	24"	20"	6"	12"	10' – 7"	11' – 1"
72"	24"	22"	6"	12"	11' – 2"	11' – 8"
78"	24"	23"	6"	12"	11' – 9"	12' – 3"
84"	24"	25"	6"	12"	12' – 4"	12' – 10"
90"	24"	27"	6"	12"	12' – 11"	13' – 5"
96"	24"	28"	6"	12"	13' – 6"	14' – 0"
102"	24"	30"	6"	12"	14' – 1"	14' – 7"
108"	24"	32"	6"	12"	14' – 8"	15' – 2"

NOTES:

1. IF THE VALVE OF W IS EXCEEDED BELOW A HORIZONTAL PLANE 1'-0" ABOVE TOP OF PIPE, SEE SPECIFICATION SECTION 207.05(A).

2. SHEETING, IF USED, SHALL BE REMOVED IN CONJUNCTION WITH THE BACKFILLING OPERATION UNLESS OTHERWISE SPECIFIED OR SHOWN ON DRAWING. HOWEVER, IF APPROVED IN WRITING, SHEETING MAY BE CUT-OFF AND LEFT IN PLACE BELOW A LINE 1'-0" ABOVE THE TOP OF THE PIPE OR AS DIRECTED BY THE ENGINEER.

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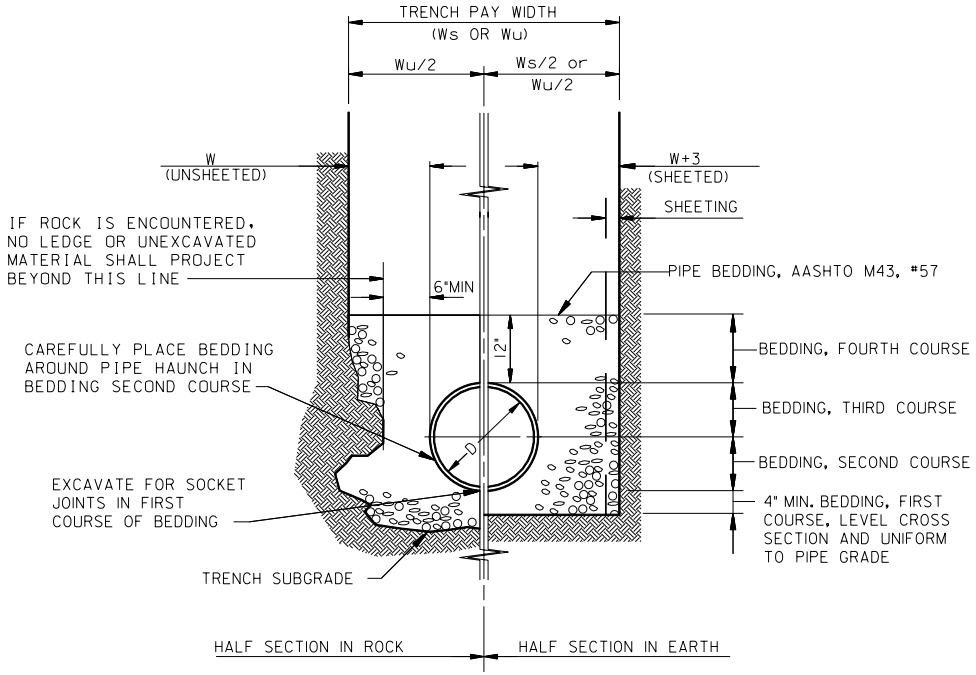
Friday, April 03, 2009 AT 12:16 PM

			RECOMMENDED: DEPUTY CHIEF ENGINEER
DATE	APPR.		
REVISED			APPROVED: CHIEF TRANSPORTATION ENGINEER
ISSUED:			
		REFERENCE	

CONCRETE SEWER PIPE TRENCH LAYING CONDITION

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 314.01



TRENCH PAY WIDTH (Ws OR Wu)			
PIPE DIAMETER	TRENCH WIDTH CLEAR	TRENCH PAY WIDTH	
D	W	Wu	Ws
10"	12"	2'-11"	3'-5"
12"	12"	3'-1"	3'-7"
15"	12"	3'-4"	3'-10"
18"	12"	3'-7"	4'-1"
21"	12"	3'-10"	4'-4"
24"	12"	4'-1"	4'-7"
27"	12"	4'-4"	4'-10"

NOTES:

1. IF THE VALUE OF W IS EXCEEDED BELOW A HORIZONAL PLANE 1'-0" ABOVE TOP OF PIPE, SEE SPECIFICATION SECTION 207.05(A).

2. SHEETING, IF USED, SHALL BE REMOVED IN CONJUNCTION WITH THE BACKFILLING OPERATION UNLESS OTHERWISE SPECIFIED OR SHOWN ON DRAWING.

			RECOMMENDED: DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: CHIEF TRANSPORTATION ENGINEER
REVISED			
ISSUED:			
		REFERENCE	

POLYVINYL CHLORIDE (PVC) PIPE SEWER TRENCH LAYING CONDITION

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 314.04

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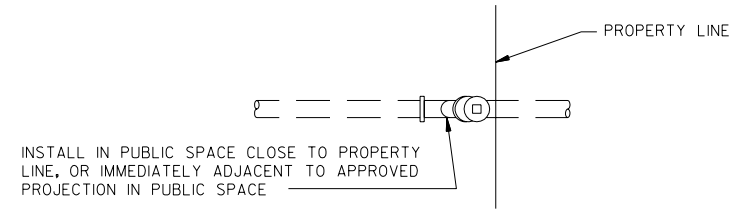
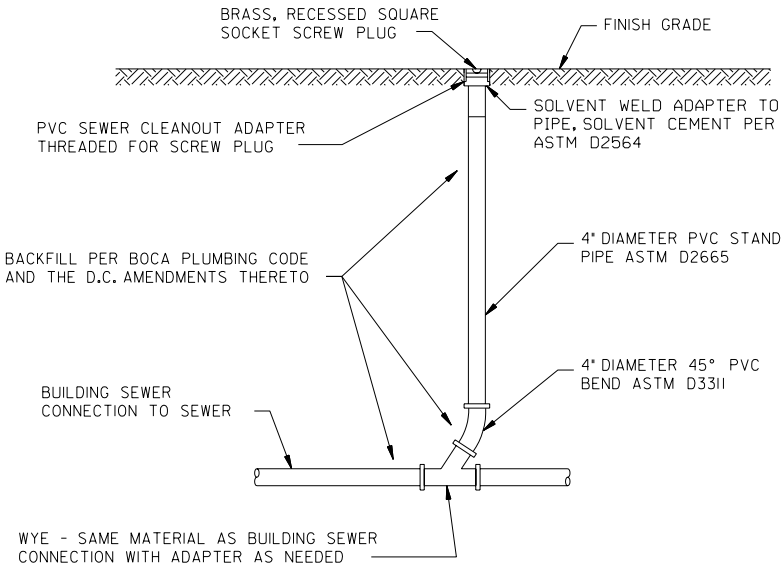
Friday, April 03, 2009 AT 2:16 PM

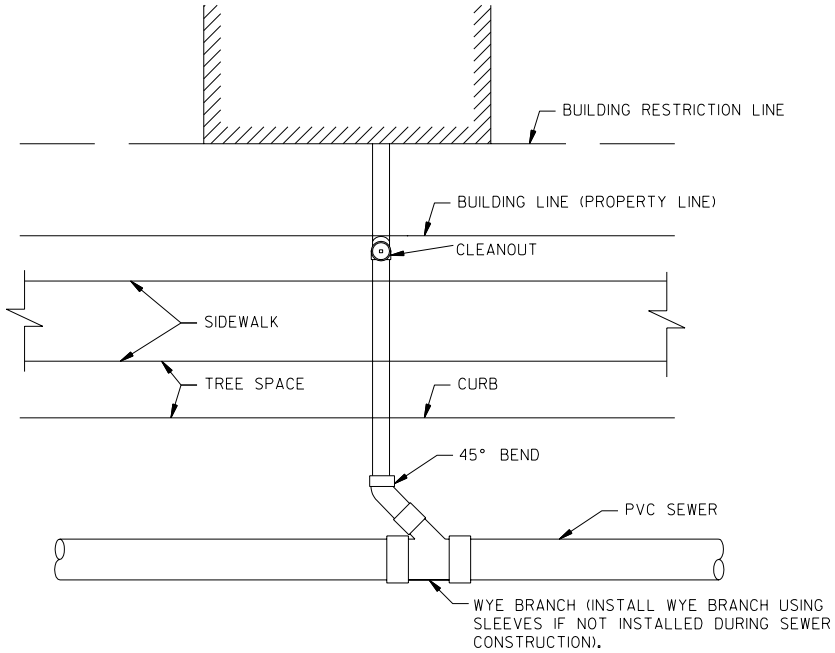
DC WASA DWG. S - 80.01
DC WASA DWG. S - 80.02



PLAN



ELEVATION



PLAN

NOTES:

1. MATERIALS AND WORKMANSHIP BETWEEN THE WYE BRANCH AND THE BUILDING MUST BE IN ACCORDANCE WITH D.C. PLUMBING CODE.
2. VERTICAL BENDS FOR GRADE (NOT SHOWN) MAY BE REQUIRED ON SEWER LATERAL.

			RECOMMENDED: DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: CHIEF TRANSPORTATION ENGINEER
REVISED			
ISSUED:			
		REFERENCE	

SEWER LATERAL PLAN
(BUILDING CONNECTION TO PVC SEWER)

d. DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 316.01

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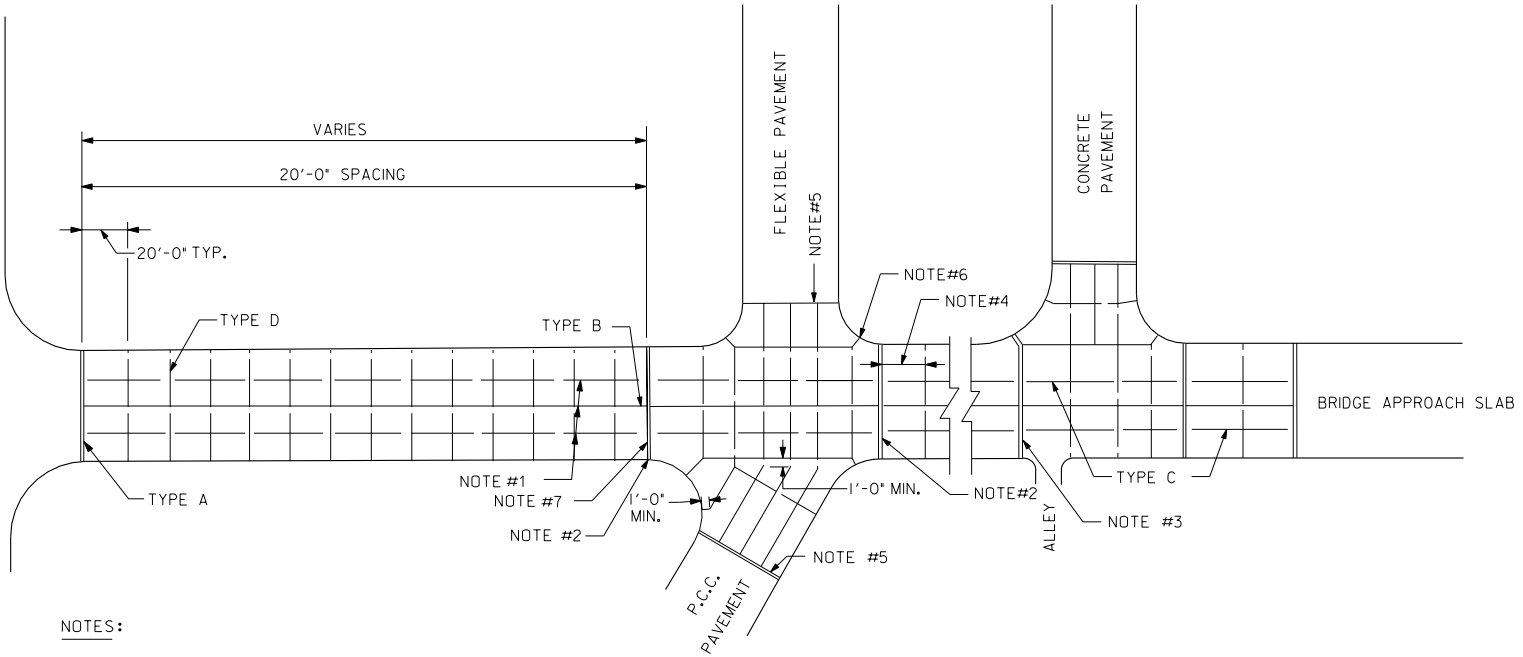
Friday, April 03, 2009 AT 12:16 PM



NOTES:

1. LANE WIDTH & LONGITUDINAL JOINT TYPE AS SHOWN ON CONTRACT DRAWINGS.
2. TRANSVERSE JOINT SPACING MAY BE ALTERED AT INTERSECTIONS TO ALLOW JOINTS TO COINCIDE WITH TANGENT POINTS.
3. TRANSVERSE JOINT SPACING MAY BE ALTERED TO ALLOW JOINTS TO COINCIDE WITH ALLEY RETURNS.
4. MAXIMUM DISTANCE BETWEEN TRANSVERSE JOINTS IS 20'-0".
5. JOINT TYPE DEPENDENT ON PAVEMENT OF INTERSECTING STREET.
6. JOINTS RUNNING INTO A CORNER ARE TO BE RADIAL TO THE CURVE.
7. TRANSVERSE EXPANSION JOINTS TO BE PLACED AT INTERSECTION STREET TANGENT POINTS OR 360'-0" MAX. SPACING.

JOINT LEGEND

TYPE A	═══	TRANSVERSE EXPANSION
TYPE B	———	LONGITUDINAL CONSTRUCTION
TYPE C	——— ———	LONGITUDINAL CONTRACTION
TYPE D	——— ——— ———	TRANSVERSE CONTRACTION

DATE	APPR.	
REVISED		
ISSUED:		
		REFERENCE

RECOMMENDED: DEPUTY CHIEF ENGINEER

APPROVED: CHIEF TRANSPORTATION ENGINEER

TYPICAL JOINT LAYOUT P.C.C. PAVEMENT AND BASE

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 501.01

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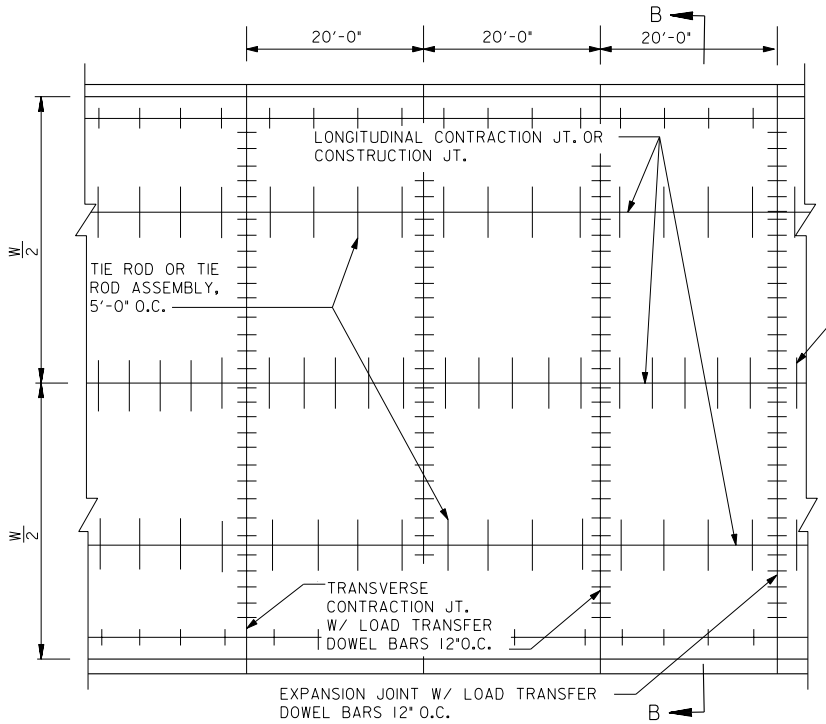
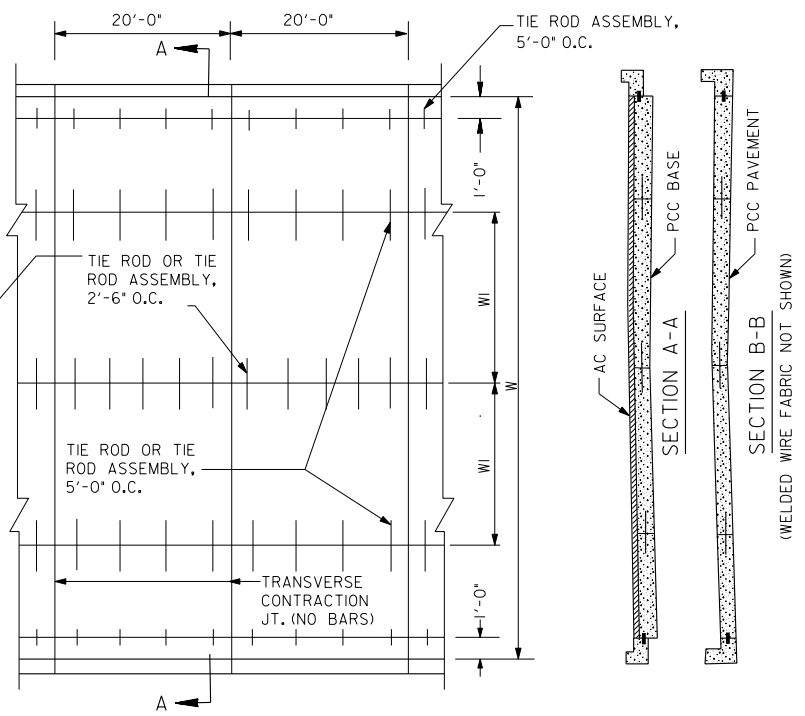
Friday, April 03, 2009 AT 12:16 PM



PORTLAND CEMENT CONCRETE PAVEMENT

(WELDED WIRE FABRIC NOT SHOWN)



PORTLAND CEMENT CONC. BASE

(NO WELDED WIRE FABRIC IN P.C.C. BASE)

WELDED WIRE FABRIC REINFORCEMENT SCHEDULE
(MINIMUM REQUIREMENT)

SLAB THICKNESS (INCH)	ROADWAY WIDTH			
	EQUAL TO OR LESS THAN 24'-0"		GREATER THAN 24'-0"	
	TYPE	W.T.(#/100S.F.)	TYPE	W.T.(#/100S.F.)
6	6x12 - W4xW4	44	6x12 - W4xW4.5	46
7	6x12 - W4.5xW4	49	6x12 - W4.5xW4.5	51
8	6x12 - W5xW4	51	6x12 - W5xW5	54
9	6x12 - W5.5xW4	54	6x12 - W5.5xW5.5	59
10	6x12 - W6xW4	61	6x12 - W6xW6	69

NOTE: REINFORCEMENT SHALL BE PLACED 2" BELOW SURFACE

EXPANSION JOINTS:

THE DOWEL BARS SHALL BE A DISTANCE OF SIX INCHES (6") FROM THE END OF THE JOINT AND SHALL BE NOT CLOSER THAN SIX INCHES (6") TO A LONGITUDINAL JOINT.

LONGITUDINAL CONTRACTION AND CONSTRUCTION JOINTS:

1/2" Ø DEFORMED TIE RODS 2'-6" LONG OR 9/16" Ø TIE ROD ASSEMBLIES SPACED AS SHOWN ABOVE SHALL BE USED FOR CONTRACTION AND CONSTRUCTION JOINTS RESPECTIVELY. TIE RODS OR TIE ROD ASSEMBLIES SHALL NOT BE PLACED CLOSER THAN 18" TO A TRANSVERSE JOINT.

LANE WIDTH (WI):

SHALL BE PER CONTRACT DRAWINGS.

DATE	APPR.	
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ISSUED:		
		REFERENCE

RECOMMENDED: DEPUTY CHIEF ENGINEER

APPROVED: CHIEF TRANSPORTATION ENGINEER

LAYOUT OF JOINTS

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 501.02

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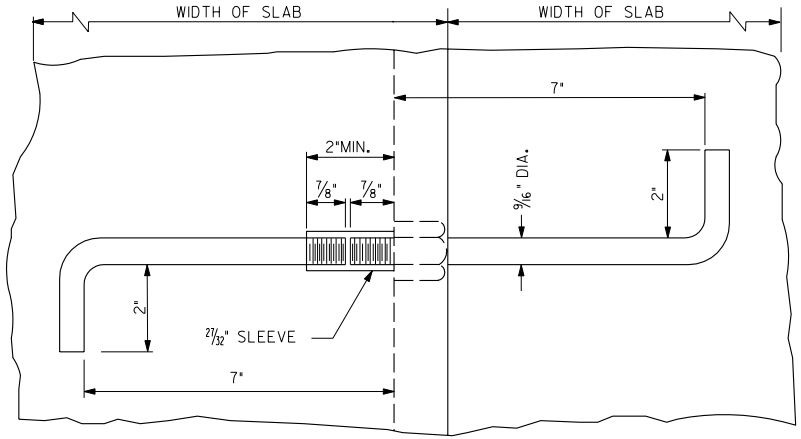
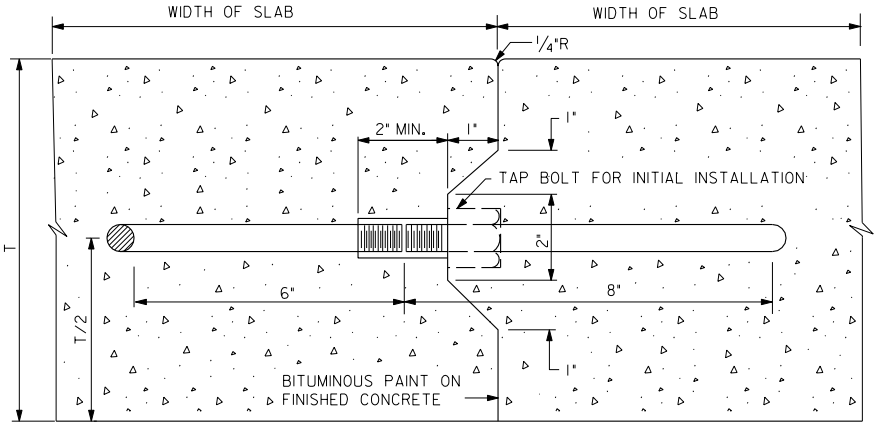
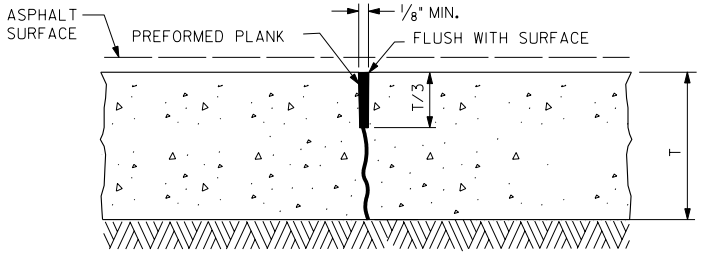


PLAN



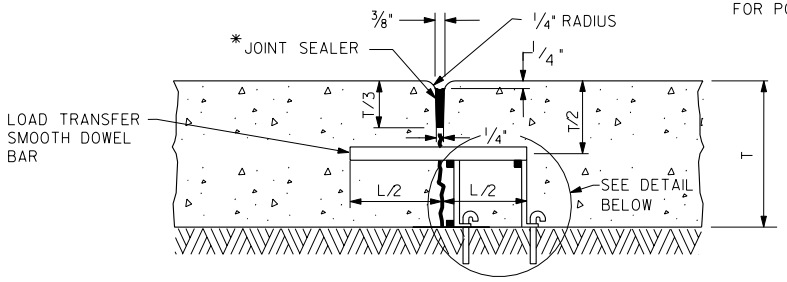
CROSS SECTION

TIE ROD ASSEMBLY
(CONSTRUCTION JOINT)

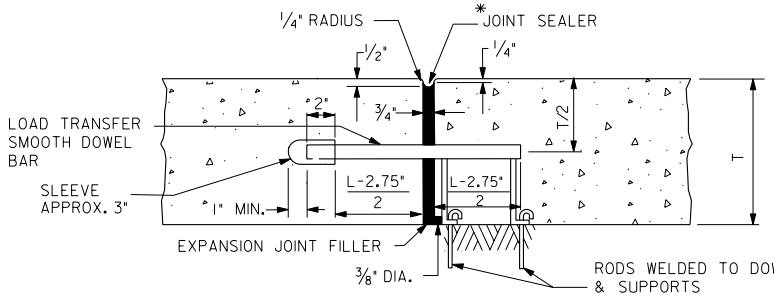


CONTRACTION JOINT FOR PCC BASE

* JOINT SEALER NOT REQUIRED FOR PCC BASE.



CONTRACTION JOINT FOR PCC PAVEMENT



TYPICAL EXPANSION JOINT

(OTHER DESIGNS OF EQUAL STRENGTH MAY BE USED, SUBJECT TO PRIOR APPROVAL)

DIAMETER OF DOWEL BARS

WHEN T = 8" ; 1" DIA.

WHEN T = 9" OR 10" ; 1 1/4" DIA.

LENGTH OF DOWEL BARS

DOWEL BAR ≥ 1" DIA.; L = 12 DIA. ± 2.5"

MIN. TOTAL LENGTH OF 1" DOWEL BAR FOR EXPANSION JOINT = 14 1/2"

TRANSVERSE JOINTS

			RECOMMENDED: DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: CHIEF TRANSPORTATION ENGINEER
REVISED			
ISSUED:			
		REFERENCE	

TIE ROD ASSEMBLY AND JOINTS WITH LOAD TRANSFER

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 501.03

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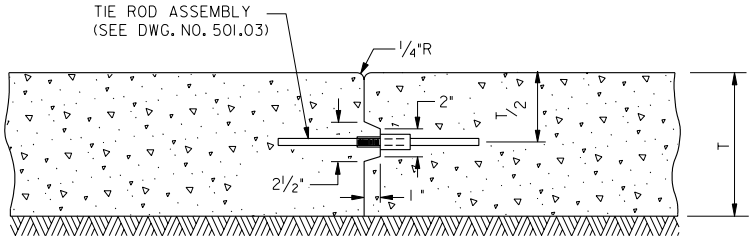
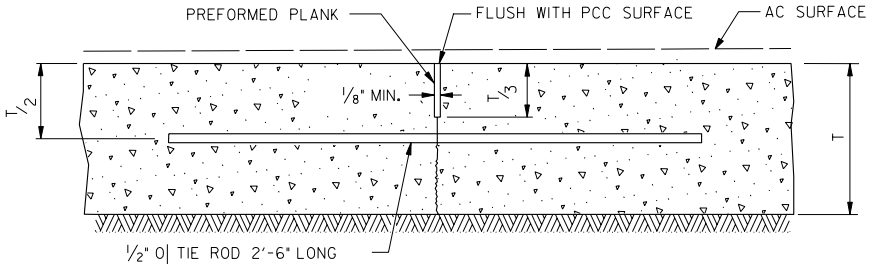
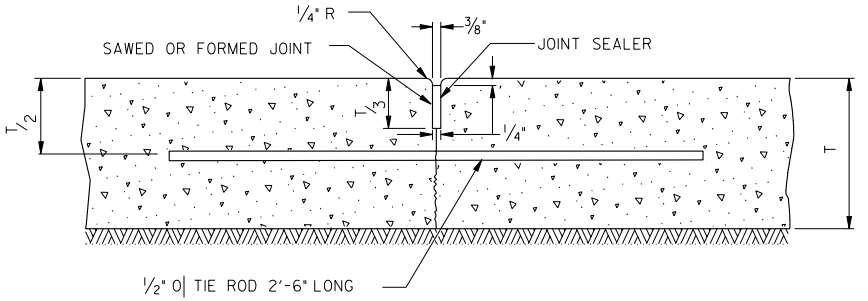


CONSTRUCTION JOINT



CONTRACTION JOINT FOR PCC BASE



CONTRACTION JOINT FOR PCC PAVEMENT

			RECOMMENDED: DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED:
REVISED			
ISSUED:			CHIEF TRANSPORTATION ENGINEER
		REFERENCE	

LONGITUDINAL CONTRACTION AND CONSTRUCTION JOINTS

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. **501.04**

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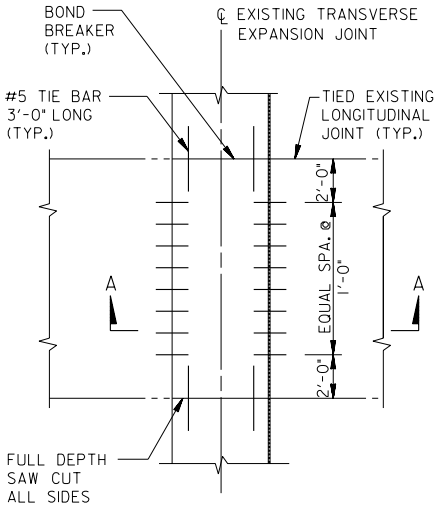
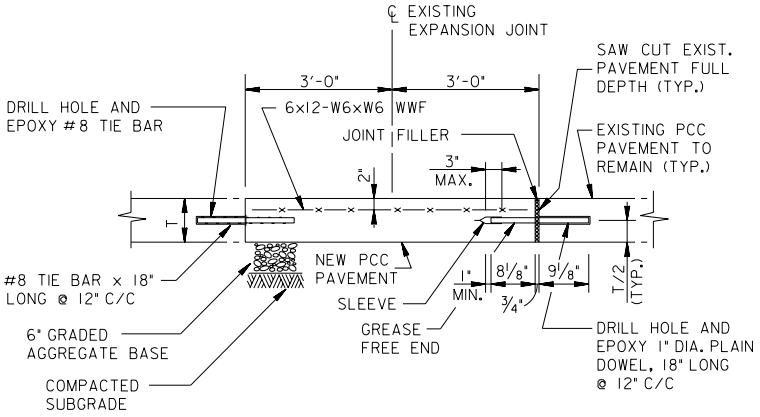


JOINT REPAIR PLAN



SECTION A-A: EXPANSION JOINT

NOTES:

1. ANCHOR TIE BARS AND DOWELS INTO EXISTING CONCRETE PAVEMENT WITH EPOXY RESIN ADHESIVE.
2. DRILL HOLES FOR THE DOWELS AND TIE BARS TO THE REQUIRED DEPTH USING FRAME MOUNTED DRILLS THAT WILL MAINTAIN THE DRILLS PARALLEL TO PROFILE AND LONGITUDINAL JOINT.
3. FOR DETAILS NOT SHOWN, SEE DRAWING NO. 501.03.

			RECOMMENDED: DEPUTY CHIEF ENGINEER
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ISSUED:		REFERENCE	

JOINT REPAIR

EXPANSION JOINT

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 501.05

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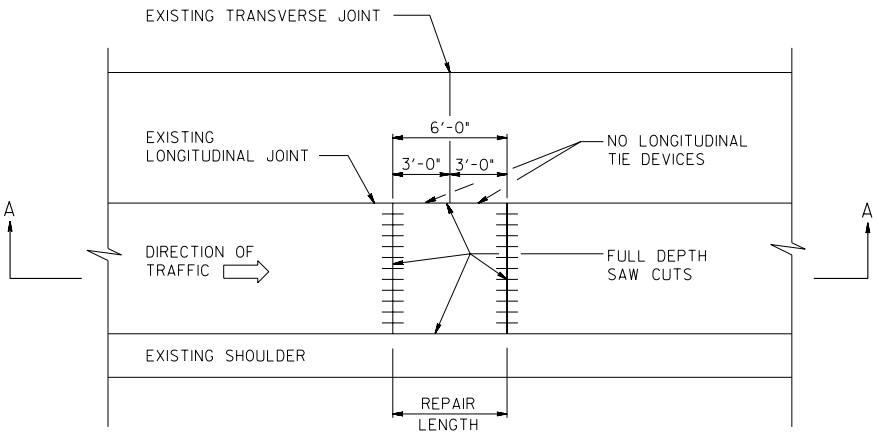

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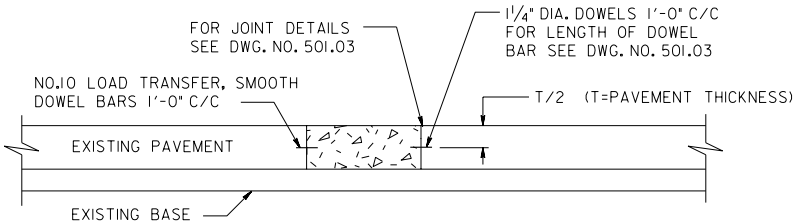

SECTION A-A

METHOD 1

REPAIRS PERFORMED AT AN EXISTING TRANSVERSE JOINT EVEN THOUGH ONLY ONE SIDE NEEDS REPAIR. THE TOTAL REPAIR LENGTH SHALL BE 6' CENTERED ON THE ADJACENT TRANSVERSE JOINT.

REPAIR GUIDELINES:

1. REPAIRS THAT ARE LESS THAN 15 FT. IN LENGTH REQUIRE NO REINFORCEMENT.
2. REPAIR SLABS AND REMAINS OF EXISTING SLABS SHALL NOT BE LESS THAN 6 FT. IN LENGTH.
3. EXISTING DOWELS AND ASSEMBLIES SHALL BE COMPLETELY REMOVED WHEN A REPAIR IS PERFORMED AT A TRANSVERSE JOINT.
4. ALL REPAIRS OFFSET MORE THAN 3 FT. ON EITHER SIDE OF AN EXISTING TRANSVERSE JOINT SHALL BE EXTENDED TO A MINIMUM OF 6 FT., AND DOWEL ASSEMBLIES SHALL BE PLACED ADJACENT TO THE EXISTING TRANSVERSE JOINTS AS SHOWN IN REPAIR METHOD 3 ON DDOT STANDARD DRAWING 501.08.

NOTES:

1. REPAIRS SHALL BE MADE IN ACCORDANCE WITH SECTION 506 OF THE DDOT STANDARD SPECIFICATIONS.
2. REPAIRS SHALL BE MADE USING CONCRETE MEETING THE REQUIREMENTS OF SECTION 501 OF THE DDOT STANDARD SPECIFICATIONS.
3. SUBGRADE PREPARATION SHALL BE IN ACCORDANCE WITH SECTIONS 209 AND 501 OF THE DDOT STANDARD SPECIFICATIONS AND MAY REQUIRE ADDITIONAL MATERIAL TO FACILITATE PLACEMENT OF LOAD TRANSFER DEVICES.
4. HOLES FOR THE DOWELS AND LOAD TRANSFER TIE DEVICES SHALL BE DRILLED SIMULTANEOUSLY TO THE REQUIRED DEPTH USING FRAME MOUNTED DRILLS THAT WILL MAINTAIN THE DRILLS IN A LONGTUDINALLY PARALLEL POSITION.
5. ALL LOAD TRANSFER TIE BARS AND DOWELS SHALL BE EPOXY COATED.

DATE	APPR.	
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ISSUED:		
		REFERENCE

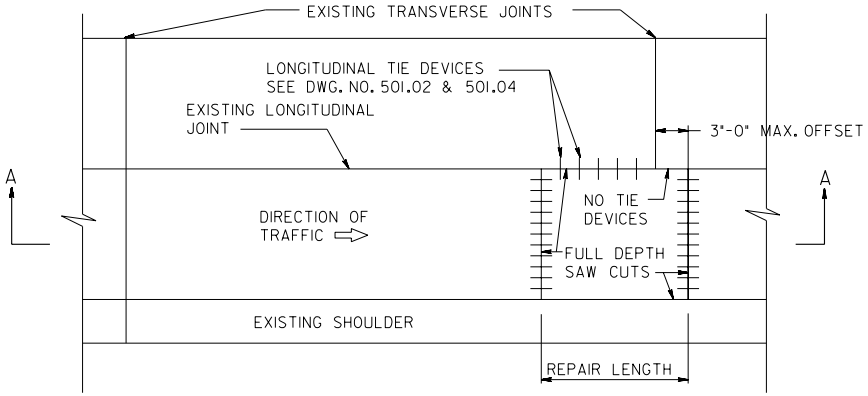
RECOMMENDED: DEPUTY CHIEF ENGINEER

APPROVED: CHIEF TRANSPORTATION ENGINEER

PCC PAVEMENT REPAIR
METHOD 1

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 501.06



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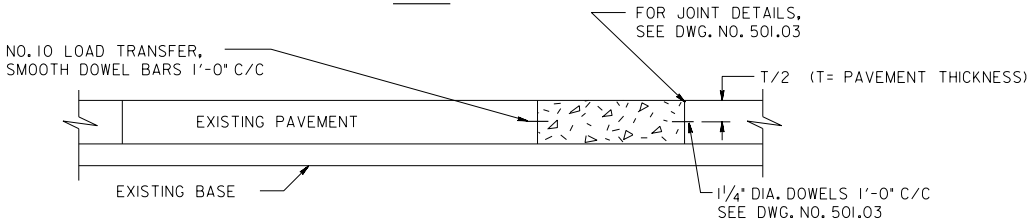

SECTION A-A

METHOD 2

REPAIRS PERFORMED AT AN EXISTING TRANSVERSE JOINT WHEN THE REPAIR EXCEEDS 3 FT. ON ONLY ONE SIDE OF THE JOINT.

REPAIR GUIDELINES:

1. REPAIRS THAT ARE LESS THAN 15 FT. IN LENGTH REQUIRE NO REINFORCEMENT.
2. REPAIR SLABS AND REMAINS OF EXISTING SLABS SHALL NOT BE LESS THAN 6 FT. IN LENGTH.
3. EXISTING DOWELS AND ASSEMBLIES SHALL BE COMPLETELY REMOVED WHEN A REPAIR IS PERFORMED AT A TRANSVERSE JOINT.
4. ALL REPAIRS OFFSET MORE THAN 3 FT. ON EITHER SIDE OF AN EXISTING TRANSVERSE JOINT SHALL BE EXTENDED TO A MINIMUM OF 6 FT., AND DOWEL ASSEMBLIES SHALL BE PLACED ADJACENT TO THE EXISTING TRANSVERSE JOINTS AS SHOWN IN REPAIR METHOD 3 ON DDOT STANDARD DRAWING 501.08.

NOTES:

1. REPAIRS SHALL BE MADE IN ACCORDANCE WITH SECTION 506 OF THE DDOT STANDARD SPECIFICATIONS.
2. REPAIRS SHALL BE MADE USING CONCRETE MEETING THE REQUIREMENTS OF SECTION 501 OF THE DDOT STANDARD SPECIFICATIONS.
3. SUBGRADE PREPARATION SHALL BE IN ACCORDANCE WITH SECTIONS 209 AND 501 OF THE DDOT STANDARD SPECIFICATIONS AND MAY REQUIRE ADDITIONAL MATERIAL TO FACILITATE PLACEMENT OF LOAD TRANSFER DEVICES.
4. HOLES FOR THE DOWELS AND LOAD TRANSFER TIE DEVICES SHALL BE DRILLED SIMULTANEOUSLY TO THE REQUIRED DEPTH USING FRAME MOUNTED DRILLS THAT WILL MAINTAIN THE DRILLS IN A LONGTUDINALLY PARALLEL POSITION.
5. ALL LOAD TRANSFER TIE BARS AND DOWELS SHALL BE EPOXY COATED.

DATE	APPR.	
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		REFERENCE

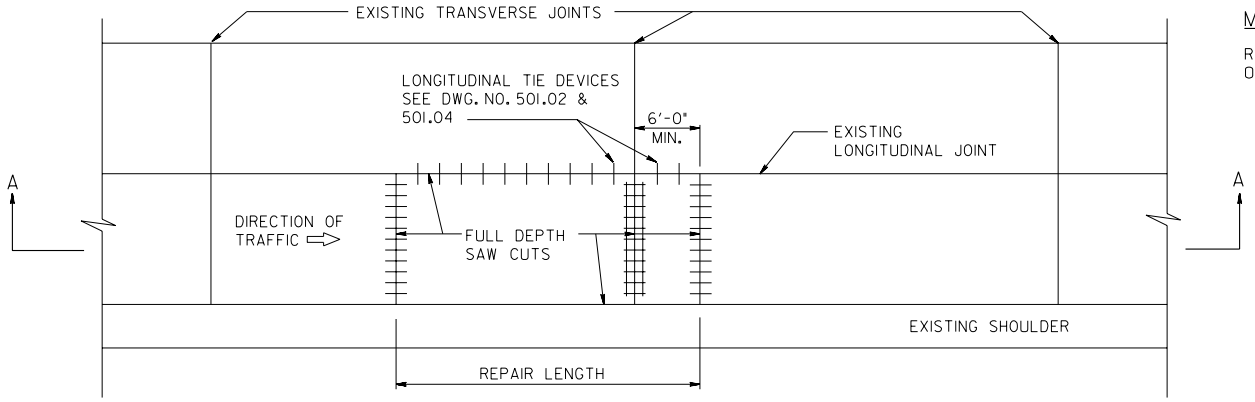
RECOMMENDED: DEPUTY CHIEF ENGINEER

APPROVED: CHIEF TRANSPORTATION ENGINEER

PCC PAVEMENT REPAIR
METHOD 2

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

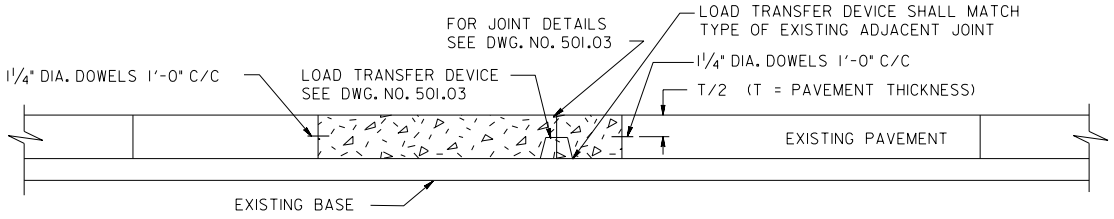
DWG. NO. 501.07



METHOD 3

REPAIRS EXCEEDING 3 FT. ON BOTH SIDES OF AN EXISTING TRANSVERSE JOINT.

PLAN



SECTION A-A

REPAIR GUIDELINES:

1. REPAIRS THAT ARE LESS THAN 15 FT. IN LENGTH REQUIRE NO REINFORCEMENT.
2. REPAIR SLABS AND REMAINS OF EXISTING SLABS SHALL NOT BE LESS THAN 6 FT. IN LENGTH.
3. EXISTING DOWELS AND ASSEMBLIES SHALL BE COMPLETELY REMOVED WHEN A REPAIR IS PERFORMED AT A TRANSVERSE JOINT.
4. ALL REPAIRS OFFSET MORE THAN 3 FT. ON EITHER SIDE OF AN EXISTING TRANSVERSE JOINT SHALL BE EXTENDED TO A MINIMUM OF 6 FT., AND DOWEL ASSEMBLIES SHALL BE PLACED ADJACENT TO THE EXISTING TRANSVERSE JOINTS.

NOTES:

1. REPAIRS SHALL BE MADE IN ACCORDANCE WITH SECTION 506 OF THE DDOT STANDARD SPECIFICATIONS.
2. REPAIRS SHALL BE MADE USING CONCRETE MEETING THE REQUIREMENTS OF SECTION 501 OF THE DDOT STANDARD SPECIFICATIONS.
3. SUBGRADE PREPARATION SHALL BE IN ACCORDANCE WITH SECTIONS 209 AND 501 OF THE DDOT STANDARD SPECIFICATIONS AND MAY REQUIRE ADDITIONAL MATERIAL TO FACILITATE PLACEMENT OF LOAD TRANSFER DEVICES.
4. HOLES FOR THE DOWELS AND LOAD TRANSFER TIE DEVICES SHALL BE DRILLED SIMULTANEOUSLY TO THE REQUIRED DEPTH USING FRAME MOUNTED DRILLS THAT WILL MAINTAIN THE DRILLS IN A LONGTUDINALLY PARALLEL POSITION.
5. ALL LOAD TRANSFER TIE BARS AND DOWELS SHALL BE EPOXY COATED.

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		REFERENCE

RECOMMENDED: DEPUTY CHIEF ENGINEER

APPROVED: CHIEF TRANSPORTATION ENGINEER

PCC PAVEMENT REPAIR
METHOD 3

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 501.08

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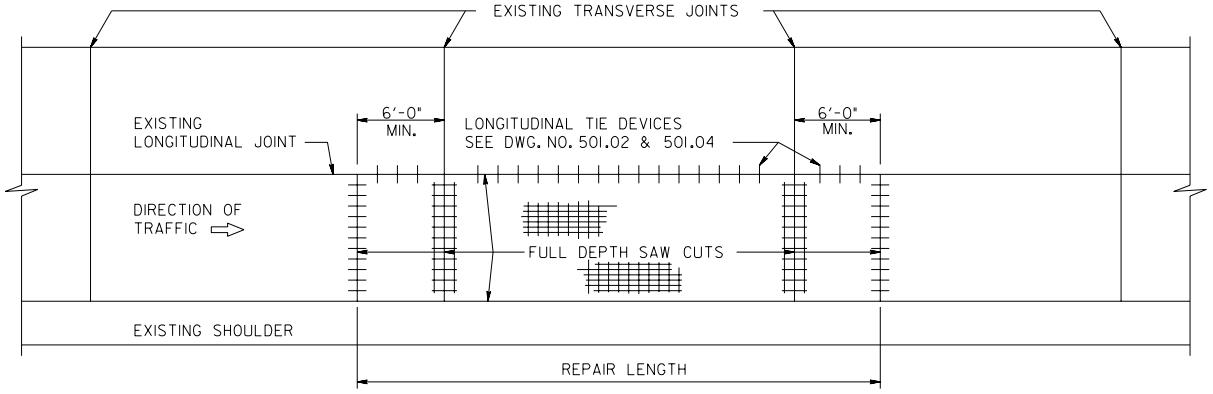

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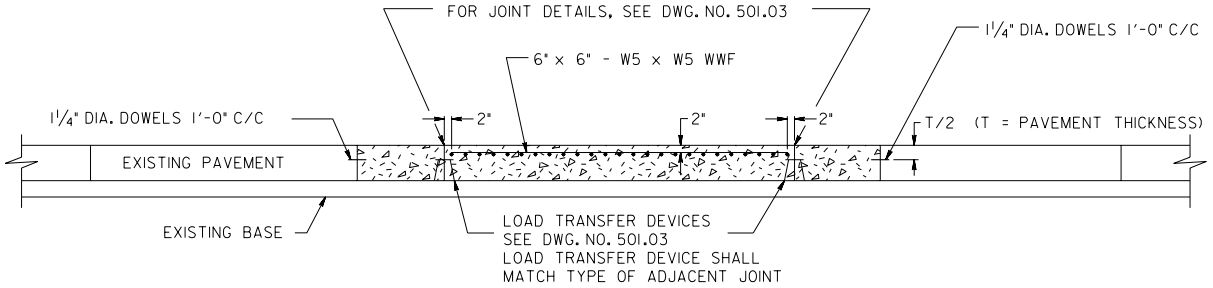

SECTION A-A

METHOD 4

REPAIRS PERFORMED TO COMPLETELY REPLACE SLABS BETWEEN TWO TRANSVERSE JOINTS.

REPAIR GUIDELINES:

1. REPAIRS THAT ARE LESS THAN 15 FT. IN LENGTH REQUIRE NO REINFORCEMENT.
2. REPAIR SLABS AND REMAINS OF EXISTING SLABS SHALL NOT BE LESS THAN 6 FT. IN LENGTH.
3. EXISTING DOWELS AND ASSEMBLIES SHALL BE COMPLETELY REMOVED WHEN A REPAIR IS PERFORMED AT A TRANSVERSE JOINT.

NOTES:

1. REPAIRS SHALL BE MADE IN ACCORDANCE WITH SECTION 506 OF THE DDOT STANDARD SPECIFICATIONS.
2. REPAIRS SHALL BE MADE USING CONCRETE MEETING THE REQUIREMENTS OF SECTION 501 OF THE DDOT STANDARD SPECIFICATIONS.
3. SUBGRADE PREPARATION SHALL BE IN ACCORDANCE WITH SECTIONS 209 AND 501 OF THE DDOT STANDARD SPECIFICATIONS AND MAY REQUIRE ADDITIONAL MATERIAL TO FACILITATE PLACEMENT OF LOAD TRANSFER DEVICES.
4. BHOLES FOR THE DOWELS AND LOAD TRANSFER TIE DEVICES SHALL BE DRILLED SIMULTANEOUSLY TO THE REQUIRED DEPTH USING FRAME MOUNTED DRILLS THAT WILL MAINTAIN THE DRILLS IN A LONGTUDINALLY PARALLEL POSITION.
5. ALL LOAD TRANSFER TIE BARS AND DOWELS SHALL BE EPOXY COATED.

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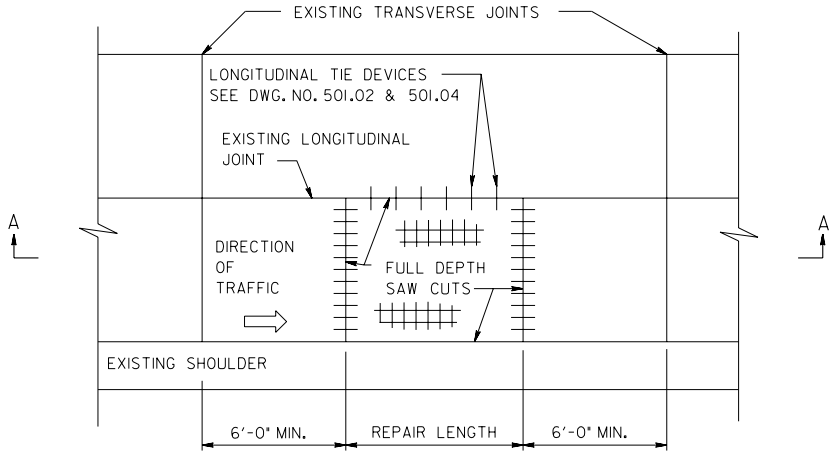
RECOMMENDED: DEPUTY CHIEF ENGINEER

APPROVED: CHIEF TRANSPORTATION ENGINEER

PCC PAVEMENT REPAIR
METHOD 4

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 501.09



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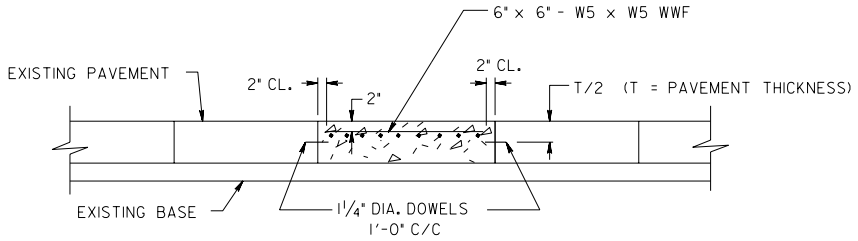

SECTION A-A

METHOD 5

REPAIRS PERFORMED AT MID SLAB OR A MINIMUM OF 6 FT. FROM AN EXISTING TRANSVERSE JOINT.

REPAIR GUIDELINES:

1. REPAIRS THAT ARE LESS THAN 15 FT. IN LENGTH REQUIRE NO REINFORCEMENT.
2. REPAIR SLABS AND REMAINS OF EXISTING SLABS SHALL NOT BE LESS THAN 6 FT. IN LENGTH.
3. EXISTING DOWELS AND ASSEMBLIES SHALL BE COMPLETELY REMOVED WHEN A REPAIR IS PERFORMED AT A TRANSVERSE JOINT.

NOTES:

1. THE ABOVE JOINT REPAIR DETAIL MAY BE USED FOR FULL DEPTH CRACKED PAVEMENT. THE EXTENT OF THE REPAIR SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. REPAIRS SHALL BE MADE IN ACCORDANCE WITH SECTION 506 OF THE DDOT STANDARD SPECIFICATIONS.
3. REPAIRS SHALL BE MADE USING CONCRETE MEETING THE REQUIREMENTS OF SECTION 501 OF THE DDOT STANDARD SPECIFICATIONS.
4. SUBGRADE PREPARATION SHALL BE IN ACCORDANCE WITH SECTIONS 209 AND 501 OF THE DDOT STANDARD SPECIFICATIONS AND MAY REQUIRE ADDITIONAL MATERIAL TO FACILITATE PLACEMENT OF LOAD TRANSFER DEVICES.
5. HOLES FOR THE DOWELS AND LOAD TRANSFER TIE DEVICES SHALL BE DRILLED SIMULTANEOUSLY TO THE REQUIRED DEPTH USING FRAME MOUNTED DRILLS THAT WILL MAINTAIN THE DRILLS IN A LONGTUDINALLY PARALLEL POSITION.
6. ALL LOAD TRANSFER TIE BARS AND DOWELS SHALL BE EPOXY COATED.

DATE	APPR.	
REVISED		
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		REFERENCE

RECOMMENDED: DEPUTY CHIEF ENGINEER

APPROVED: CHIEF TRANSPORTATION ENGINEER

PCC PAVEMENT REPAIR
METHOD 5

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 501.10

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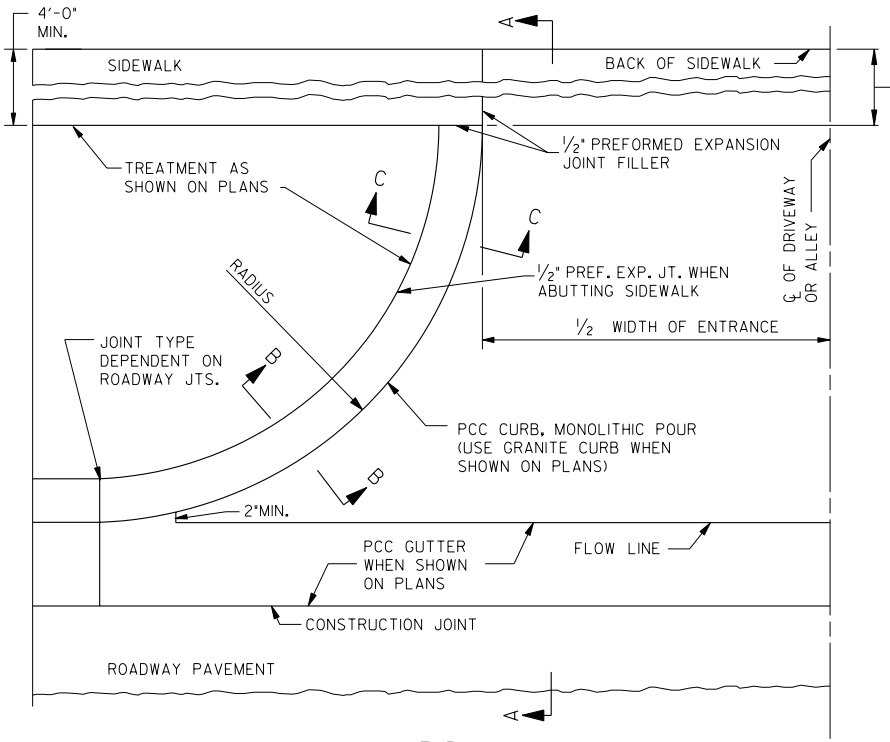
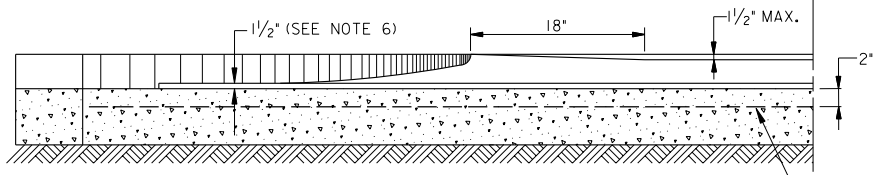
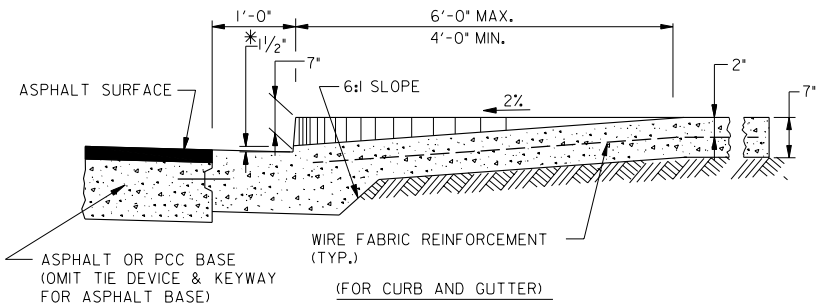


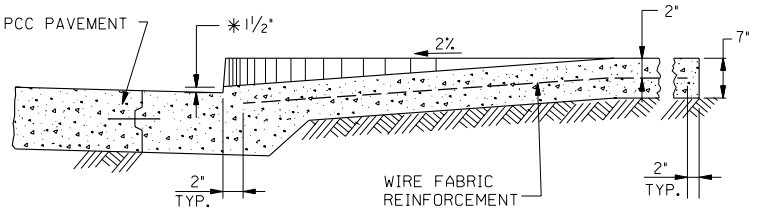
HALF PLAN



SECTION ELEVATION AT GUTTER LINE



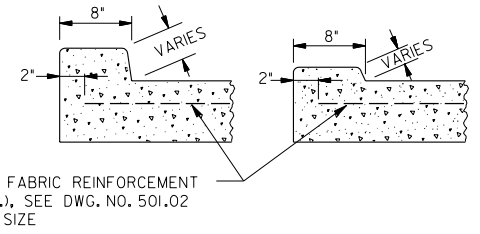
(FOR CURB AND GUTTER)



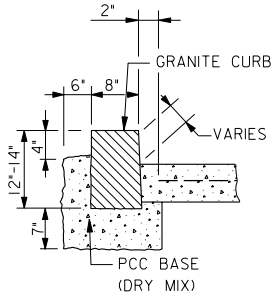
(FOR PCC PAVEMENT)

* SEE NOTE 6

SECTION A-A



SECTION B-B SECTION C-C



FOR GRANITE CURB

NOTES:

1. DRIVEWAY RADIUS = 6 FT. (UNLESS OTHERWISE SHOWN ON CONTRACT PLANS).
2. ALLEY RADIUS = 10 FT. (UNLESS OTHERWISE SHOWN ON CONTRACT PLANS).
3. 7 IN. PCC USED (UNLESS OTHERWISE SHOWN ON CONTRACT PLANS).
4. USE GRANITE CURB RETURNS WHERE EXISTING. SEE GRANITE CURB DETAILS WHEN USED.
5. TO INSURE CONFORMANCE WITH ADA GUIDELINES WHERE ALLEY AND DRIVEWAY ENTRANCES ABUT SIDEWALK, THE ENTRANCES, INCLUDING ANY INTERVENING CURB RETURN, SHALL BE FLUSH WITH THE ADJACENT SIDEWALK A MINIMUM OF 4 FT. FORWARD FROM THE BACK OF SIDEWALK.
6. ELIMINATE LIP ON ALLEY ENTRANCE.

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RECOMMENDED: DEPUTY CHIEF ENGINEER

APPROVED: CHIEF TRANSPORTATION ENGINEER

ALLEY-DRIVEWAY ENTRANCE WITH CURB RETURNS TYPE "A"

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

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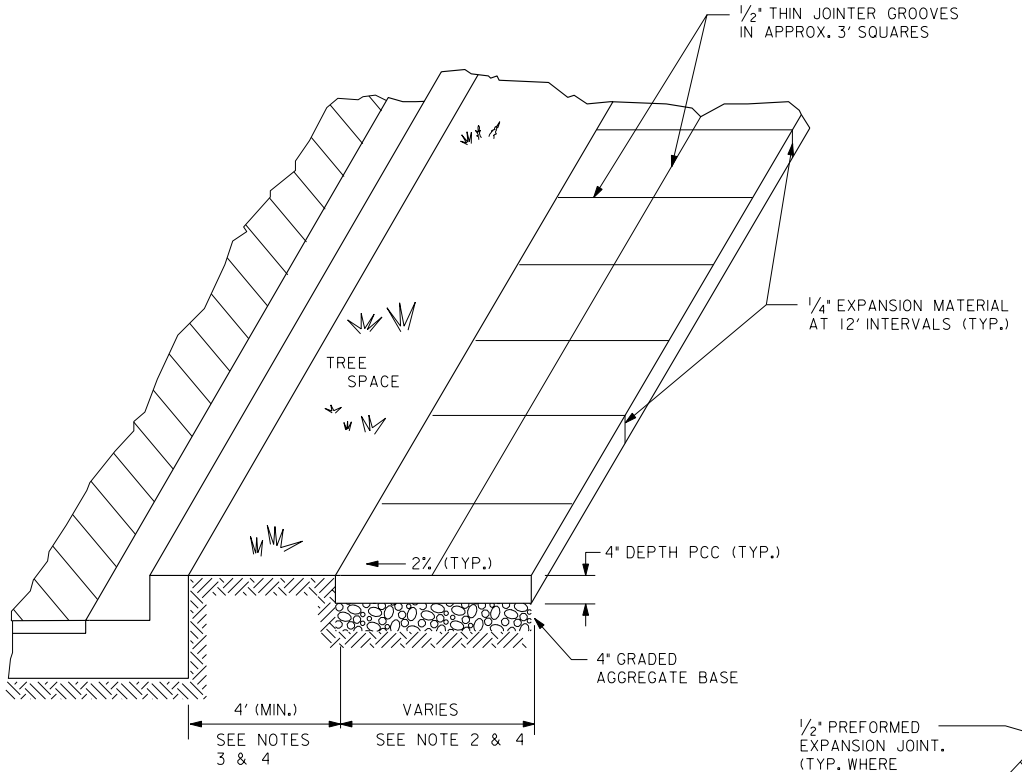
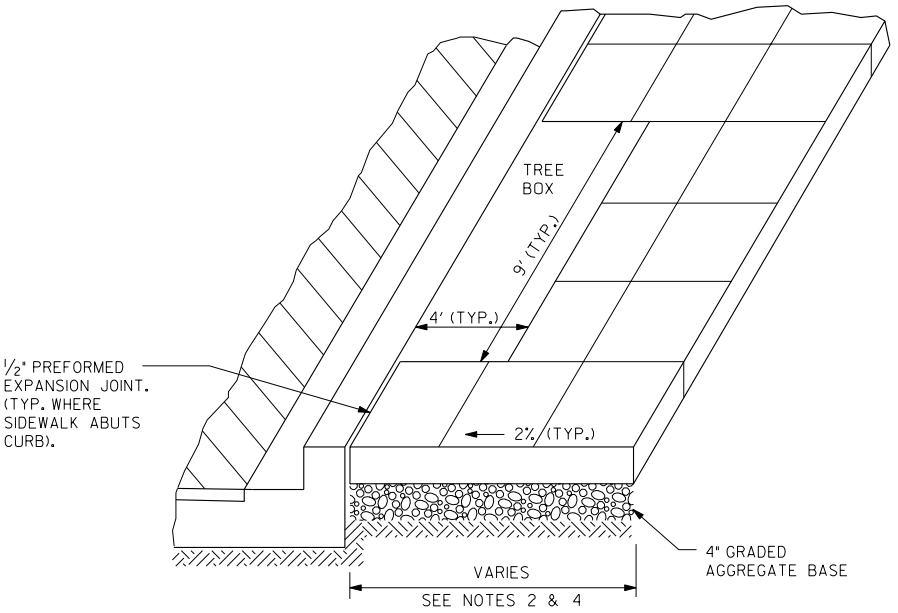


SIDEWALK WITH TREESPACE SECTION



SIDEWALK WITH TREE BOX SECTION

NOTES:

1. STANDARD TRANSVERSE SLOPE OF SIDEWALK IS 2% TOWARDS CURB.
2. PREFERRED SIDEWALK WIDTH = 6 FT. MINIMUM SIDEWALK WIDTH = 5 FT. IN VERY CONSTRAINED AREAS, SUCH AS AROUND OBSTACLES THAT CANNOT BE MOVED, I.E. TREES, WALLS ETC., A MINIMUM SIDEWALK WIDTH = 3 FT. MUST BE MAINTAINED FOR PASSAGE.
3. WHEN MINIMUM SIDEWALK WIDTH REQUIREMENTS ARE MET, A WIDER TREESPACE SHALL BE PROVIDED IF THE RIGHT-OF-WAY ALLOWS.
4. ANY EXCEPTIONS TO MINIMUM SIDEWALK OR TREESPACE REQUIREMENTS REQUIRE THE ENGINEER'S APPROVAL.

			RECOMMENDED: DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: CHIEF TRANSPORTATION ENGINEER
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ISSUED:			
		REFERENCE	

TYPICAL SIDEWALK SECTIONS

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 608.01

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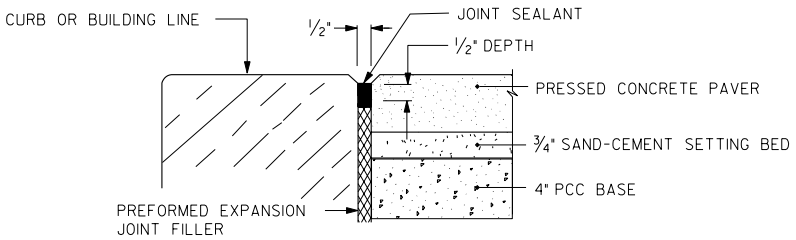
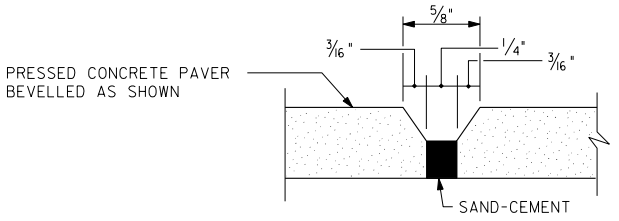
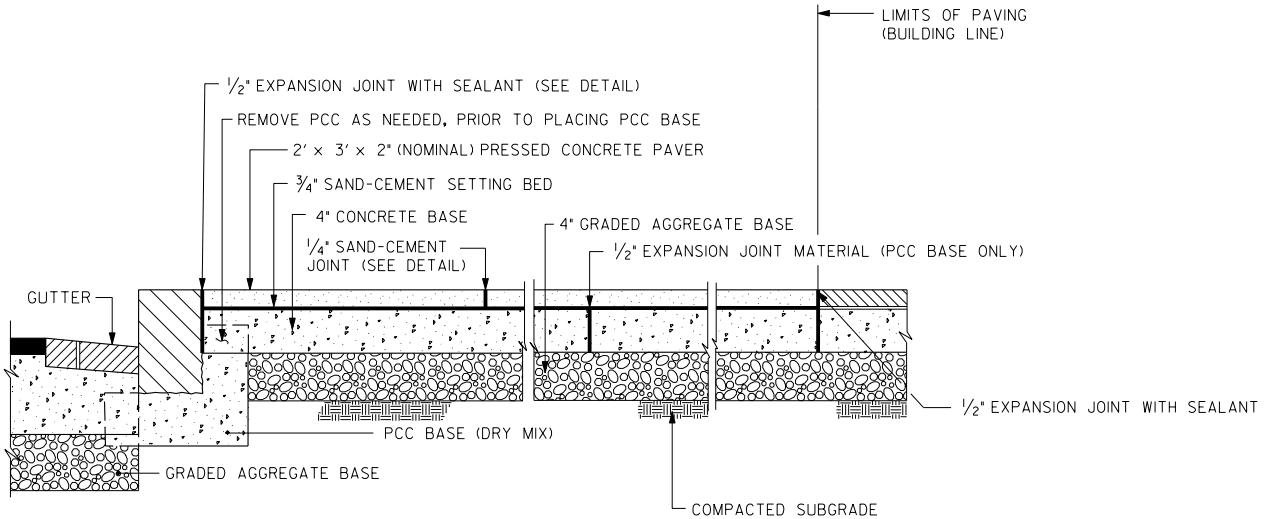


EXPANSION JOINT



PAVER-JOINT



TYPICAL CROSS-SECTION

PRESSED CONCRETE BLOCK PAVER SIDEWALK

NOTES:

1. ALL PRESSED CONCRETE PAVING BLOCKS SHALL HAVE A NON-SLIP SURFACE.
2. USE TRI-SECTED PATTERN, STARTING PERPENDICULAR AT CURB AND WORKING TOWARD BUILDING LINE.
3. SETTING BED SHALL BE SAND-CEMENT MIX, 2:1 BY VOLUME.
4. JOINTS SHALL BE SWEPT WITH DRY SAND-CEMENT MIX, 2:1 BY VOLUME.
5. PAVING BLOCKS SHALL BE CUT TO FIT AROUND MANHOLES, VAULTS CATCH BASINS, CURBS, RAMPS, LIGHT POLES, KIOSKS AND FLAG POLES.
6. POURED CONCRETE SQUARE OR RECTANGULAR COLLARS AROUND SIDEWALK INTERRUPTIONS, USING AGGREGATE SIZE AND COLOR PER THE MANUFACTURER OF THE PRESSED CONCRETE PAVING BLOCKS, MAY BE USED SUBJECT TO APPROVAL BY THE ENGINEER.
7. USE PERPENDICULAR INTERSECTING PAVING PATTERN AT CORNERS.
8. PEPCO WILL FURNISH NEW STEEL VAULT COVERS IN LIEU OF THE EXISTING COVERS FILLED WITH CONCRETE. ONLY REMOVABLE TYPE VAULT COVERS WILL BE REPLACED. CONTRACTOR WILL INLAY PRESSED CONCRETE BLOCK PAVERS ON EPOXY MORTAR BED. JOINTS SHALL BE CONTINUOUS WITH SURROUNDING SIDEWALK PAVERS AS MUCH AS PRACTICABLE. LEVEL OF PAVERS SHALL BE FLUSH WITH ADJACENT GRADE.
9. CONTRACTOR SHALL NOTIFY PEPCO 3 WEEKS IN ADVANCE BEFORE PEPCO VAULT COVERS ARE READY TO BE REPLACED AND PAVED. ONLY PEPCO WILL REMOVE AND INSTALL THE STEEL VAULT COVERS.

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APPROVED: CHIEF TRANSPORTATION ENGINEER

PRESSED CONCRETE BLOCK PAVER SIDEWALK

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 608.02

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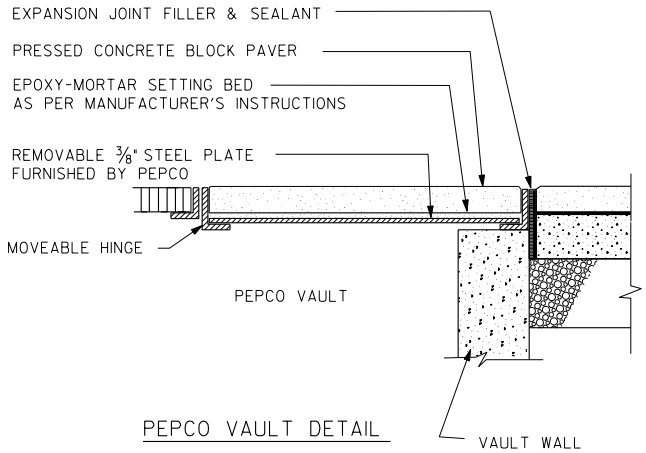
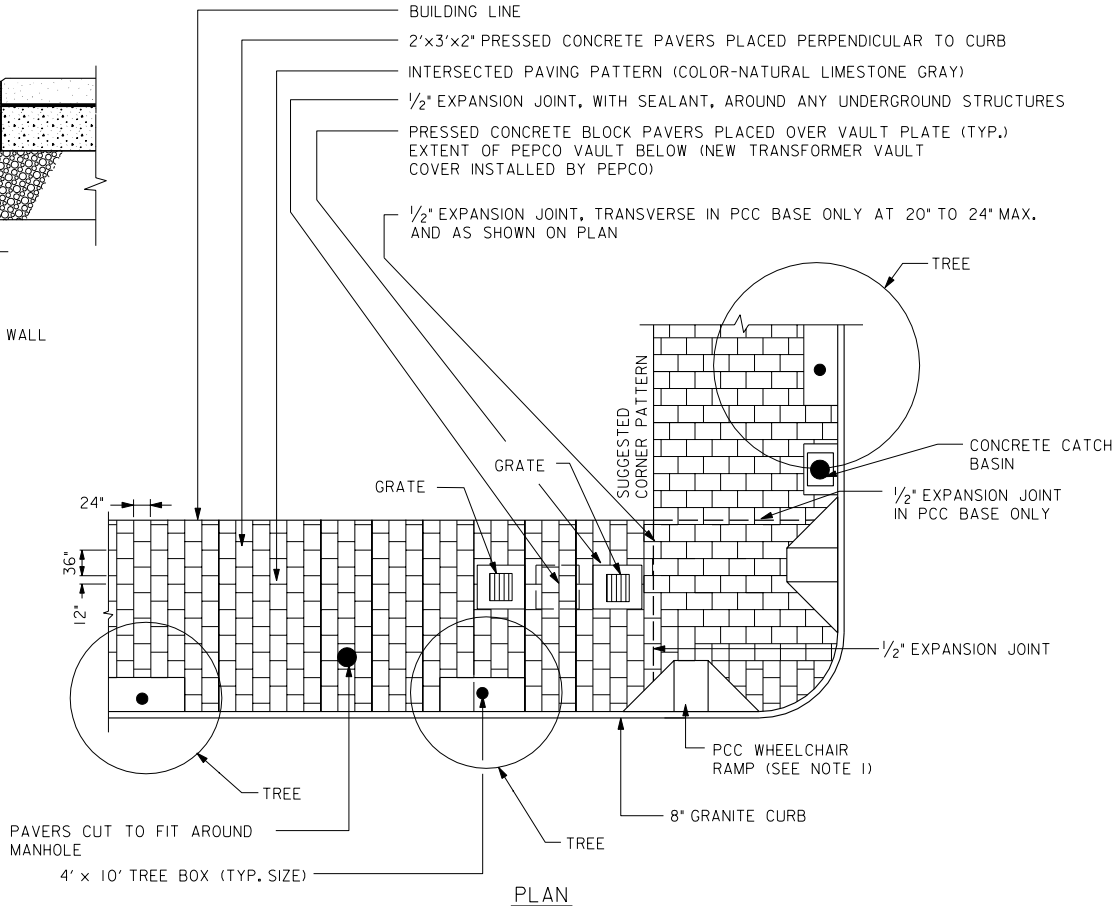


PEPCO VAULT DETAIL



PLAN

TYPICAL PAVING PATTERN

NOTE:

1. SEE CONTRACT PLANS FOR EXACT LOCATION OF WHEELCHAIR RAMPS.

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PRESSED CONCRETE BLOCK PAVER PATTERN

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

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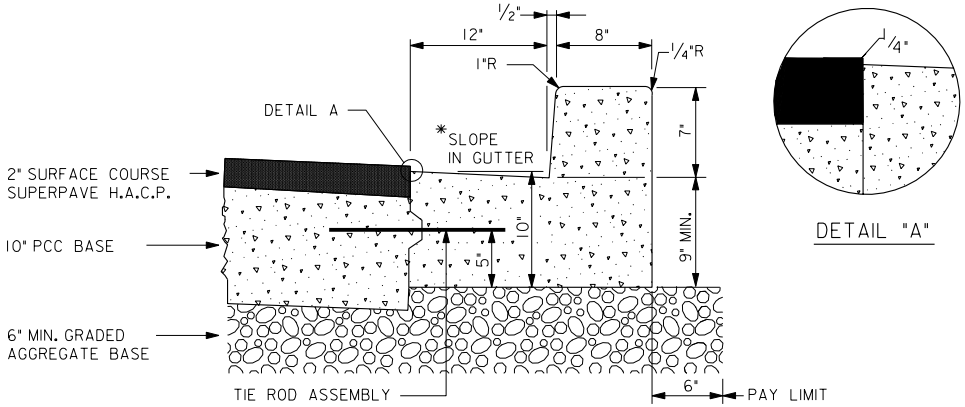
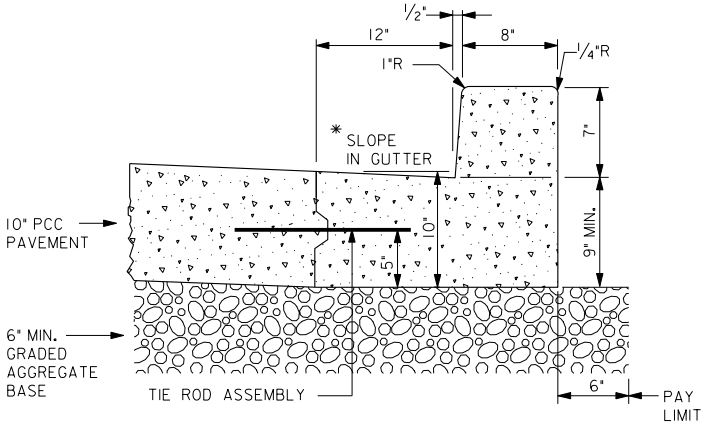
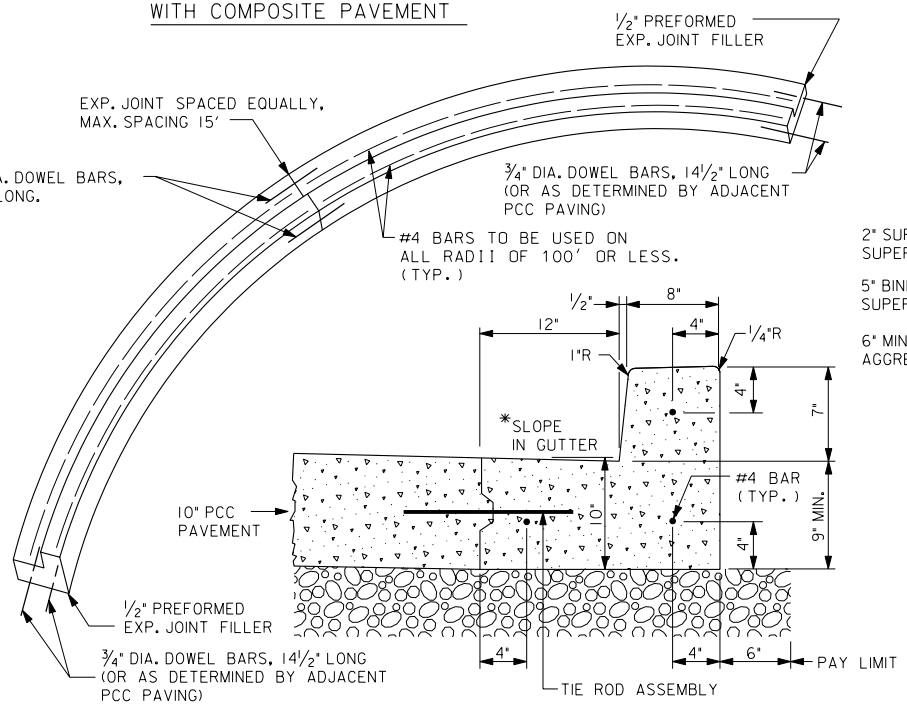


DETAIL "A"

PCC CURB AND GUTTER
WITH COMPOSITE PAVEMENT

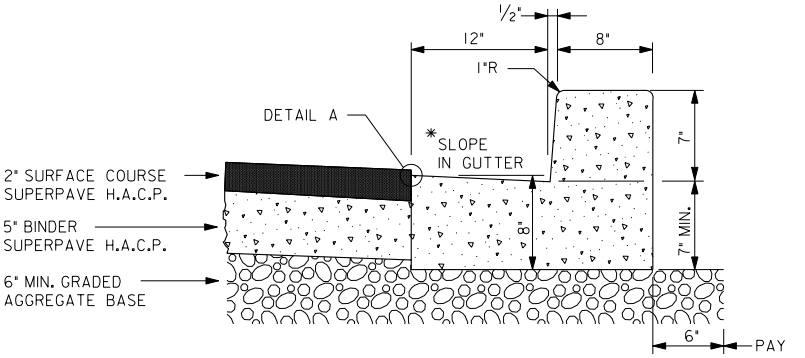


PCC CURB AND GUTTER
WITH CONCRETE PAVEMENT



CIRCULAR REINFORCED PCC CURB AND GUTTER, RADII = 100' OR LESS

(SHOWN WITH CONCRETE PAVEMENT SECTION)



PCC CURB AND GUTTER
WITH FLEXIBLE PAVEMENT

NOTES:

1. TIE ROD ASSEMBLY TO BE INSTALLED AT 5 IN. OF THE INITIAL POUR.
2. #4 BARS SHALL NOT EXTEND THROUGH THE EXPANSION JOINT.
3. * LOW SIDE - 1 IN. PER FT. TOWARD CURB.
   * HIGH SIDE - $\frac{5}{8}$ IN. PER FT. AWAY FROM CURB.
4. 6 IN. MIN. DEPTH GRADED AGGREGATE BASE APPLIES TO AREA BENEATH ROADWAY AND CURB AND GUTTER.

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TYPES OF PCC CURB & GUTTER

d. DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

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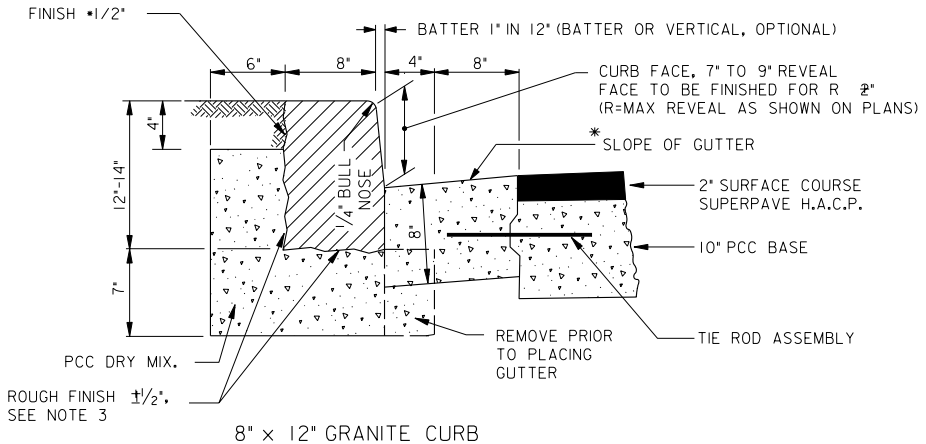
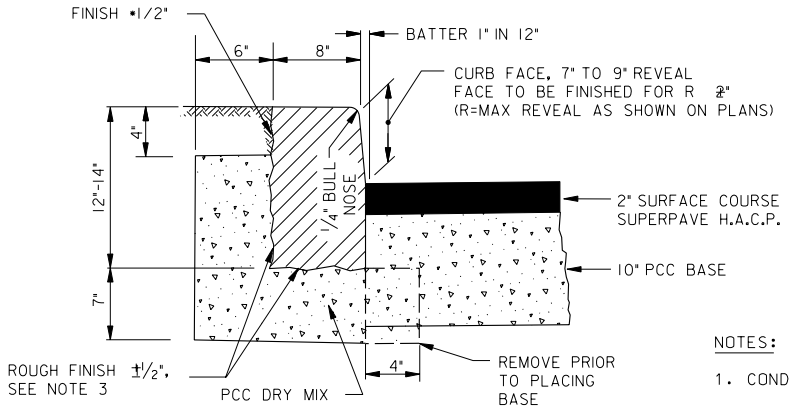


8" x 12" GRANITE CURB
(WITH PCC GUTTER)



8" x 12" GRANITE CURB
(WITHOUT PCC GUTTER)

NOTES:

1. CONDITIONS AT BACK OF CURB VARY AND ARE AS SHOWN ON THE CONTRACT PLANS.
2. PCC DRY MIX SHALL BE PER DDOT STANDARD SPECIFICATIONS, SECTION 801. IT SHALL MAINTAIN THE SAME TIME LIMITS AS PCC AND SHALL BE WATERED DOWN AFTER SETTING OF GRANITE CURB.
3. THE MINIMUM DEPTH TO CONCAVE SURFACE ON ROUGH FINISH SHALL BE 10 IN.
4. GRANITE CURBS ARE SHOWN WITH A COMPOSITE PAVEMENT SECTION.
5. * LOW SIDE - 1 IN. PER FT. TOWARD CURB
   * HIGH SIDE - 5/8 IN. PER FT. AWAY FROM CURB
6. A 6 IN. MIN. LAYER OF GRADED AGGREGATE BASE SHALL BE PLACED BENEATH THE ROADWAY AND CURB AND GUTTER AND IS NOT SHOWN FOR CLARITY.

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TYPES OF GRANITE CURBS

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 609.02

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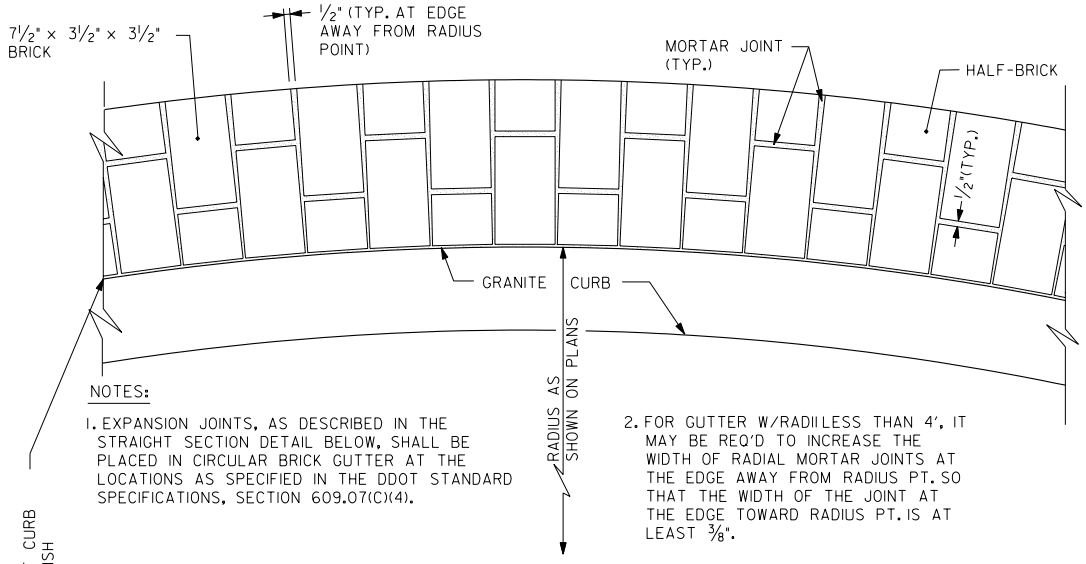
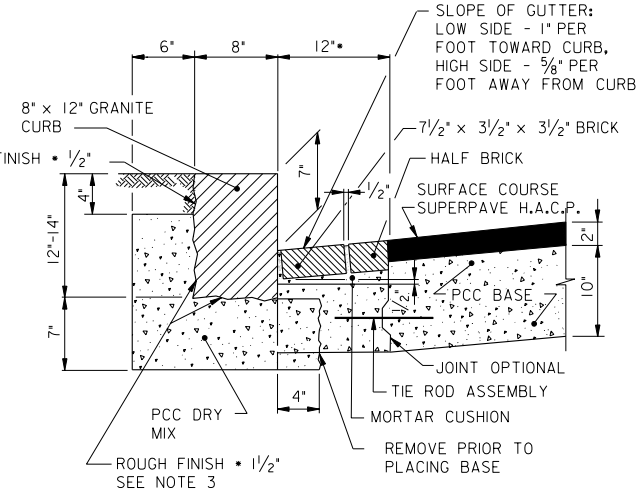


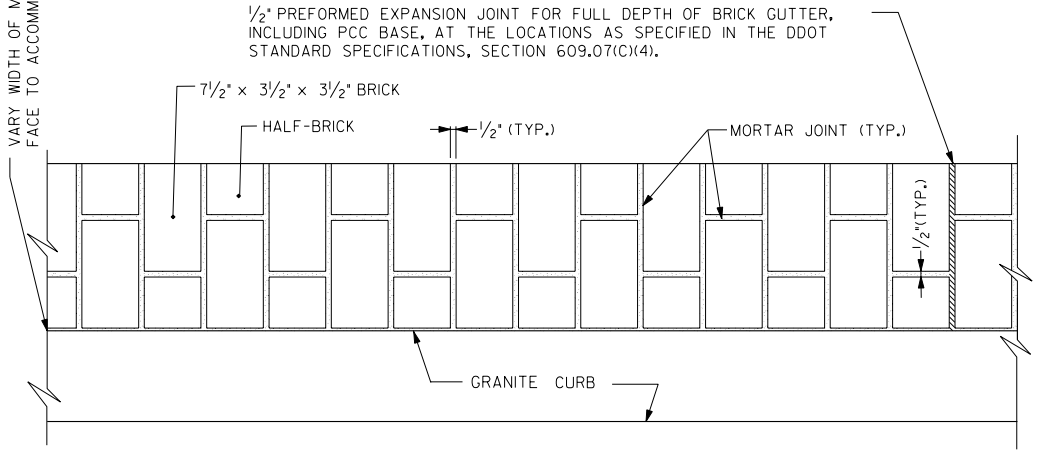
NOTES:

1. EXPANSION JOINTS, AS DESCRIBED IN THE STRAIGHT SECTION DETAIL BELOW, SHALL BE PLACED IN CIRCULAR BRICK GUTTER AT THE LOCATIONS AS SPECIFIED IN THE DDOT STANDARD SPECIFICATIONS, SECTION 609.07(C)(4).
2. FOR GUTTER W/RADII LESS THAN 4', IT MAY BE REQ'D TO INCREASE THE WIDTH OF RADIAL MORTAR JOINTS AT THE EDGE AWAY FROM RADIUS PT. SO THAT THE WIDTH OF THE JOINT AT THE EDGE TOWARD RADIUS PT. IS AT LEAST ⅜".

CIRCULAR SECTION



8" x 12" GRANITE CURB WITH BRICK GUTTER



STRAIGHT SECTION

NOTES:

1. CONDITIONS AT BACK OF CURB VARY AND ARE AS SHOWN ON THE CONTRACT PLANS.
2. PCC DRY MIX SHALL BE PER DDOT STANDARD SPECIFICATIONS, SECTION 801. IT SHALL MAINTAIN THE SAME TIME LIMITS AS PCC AND SHALL BE WATERED DOWN AFTER SETTING OF GRANITE CURB.
3. THE MINIMUM DEPTH TO CONCAVE SURFACE ON ROUGH FINISH SHALL BE 10 IN.
4. GRANITE CURB IS SHOWN WITH A COMPOSITE PAVEMENT SECTION.
5. A 6 IN. MIN. LAYER OF GRADED AGGREGATE BASE SHALL BE PLACED BENEATH THE ROADWAY AND CURB AND GUTTER AND IS NOT SHOWN FOR CLARITY.

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PATTERNS FOR BRICK GUTTER

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 609.04

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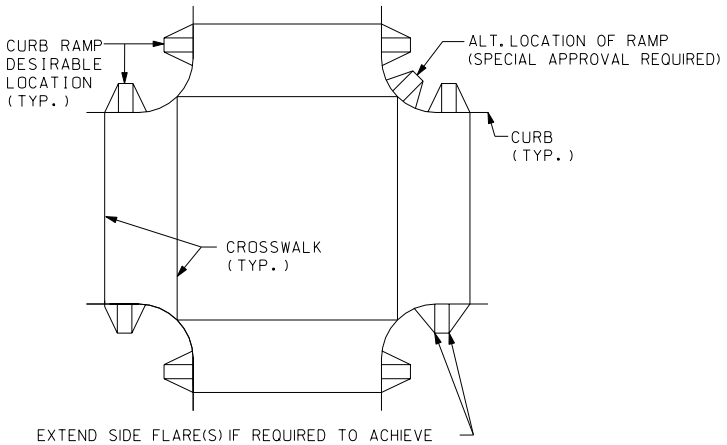
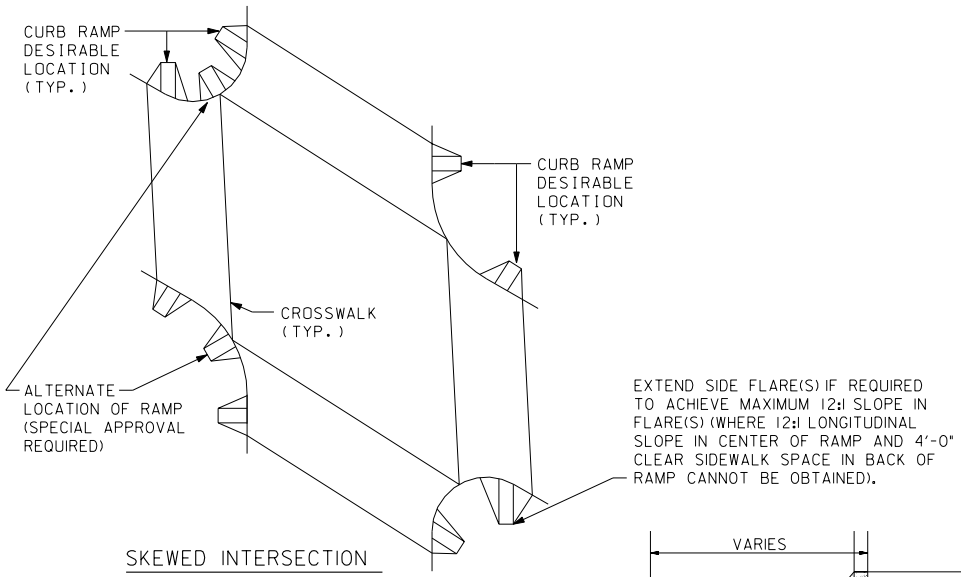


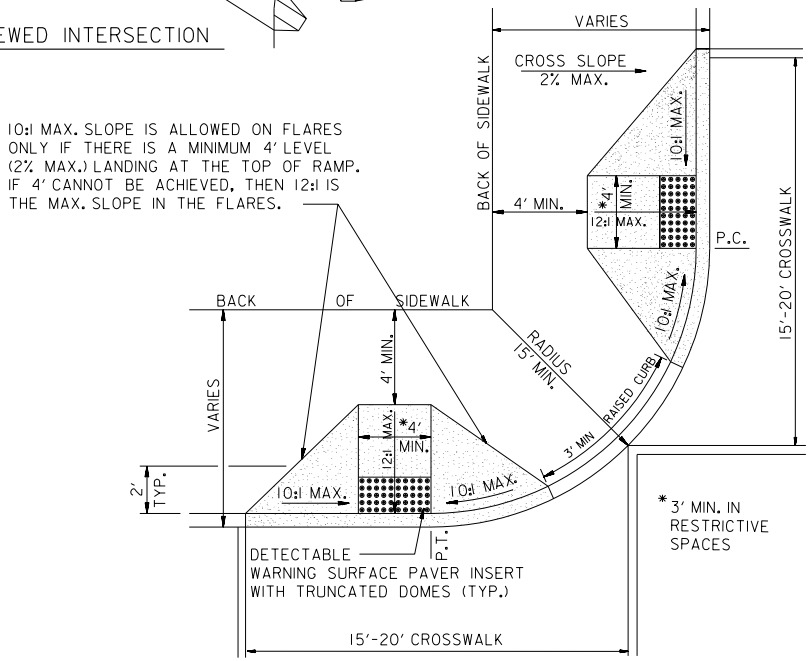
RIGHT-ANGLE INTERSECTION



SKEWED INTERSECTION

NOTES:

1. AT FOUR LEGGED INTERSECTIONS, IT IS REQUIRED TO CONSTRUCT TWO RAMPS, ONE FOR EACH DIRECTION OF CROSSING. IF THERE ARE SPACE LIMITATIONS THAT DO NOT PERMIT THE CONSTRUCTION OF TWO INDEPENDENT RAMPS, SUCH AS TELEPHONE POLES, FIRE HYDRANTS, STORM DRAIN INLETS, ETC., PROVISIONS SHOULD BE MADE TO RELOCATE THE OBSTRUCTION. IF THE 12:1 LONGITUDINAL SLOPE CANNOT BE ACHIEVED WHERE RAMPS ARE SHOWN, SPECIAL APPROVAL SHALL BE OBTAINED TO CONSTRUCT ONE RAMP AT THE CORNER AND MODIFY THE CROSSWALKS. SEE DRAWINGS 609.06 AND 609.07 FOR DETAILS.
2. RAMP LOCATION SHALL BE GOVERNED BY CROSSWALK WIDTH, 15'-20' AS DIRECTED. ALL RAMPS, INCLUDING SIDE FLARES, SHALL BE LOCATED WITHIN A CROSSWALK. ONE SIDE FLARE SHALL ALIGN WITH THE BACK EDGE LINE OF THE CROSSWALK.
3. FOR SKEWED INTERSECTION, ACUTE CORNER SHALL DETERMINE THE LOCATION OF LIGHT POLES, RAMPS AND CROSSWALKS.
4. ALL RAMPS SHALL CONFORM TO THE LATEST AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) CRITERIA.
5. DIMENSIONS SHOWN ARE FOR NEW CONSTRUCTION. FOR ALTERATIONS WHEN THESE DIMENSIONS ARE IMPRACTICAL, REVIEW ADAAG FOR LESS STRICT DIMENSIONS.
6. INSTALL DETECTABLE WARNING SURFACE PAVERS WITH TRUNCATED DOMES FOR A DISTANCE OF 24" FROM THE BACK OF THE CURB AS SHOWN.
7. THE SURFACE OF THE RAMP SHALL BE BROOM FINISHED (STEEL BRISTLE).
8. RAMP SHALL BE CONSTRUCTED WITH PCC SIDEWALK CONCRETE (NO DARKENING AGENTS).
9. ANY LIGHT POLE FOUNDATION SHALL BE CONSTRUCTED INDEPENDENTLY OF RAMP.
10. DESIGN STORM DRAIN SYSTEMS TO SHED WATER AWAY FROM RAMPS.
11. FINAL LOCATION OF RAMP WILL BE DECIDED BY THE ENGINEER ON SITE.



DETAIL: WHEELCHAIR - BICYCLE RAMP(S) DESIRABLE LOCATION (TYP.)

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WHEELCHAIR - BICYCLE RAMPS LOCATIONS

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 609.05

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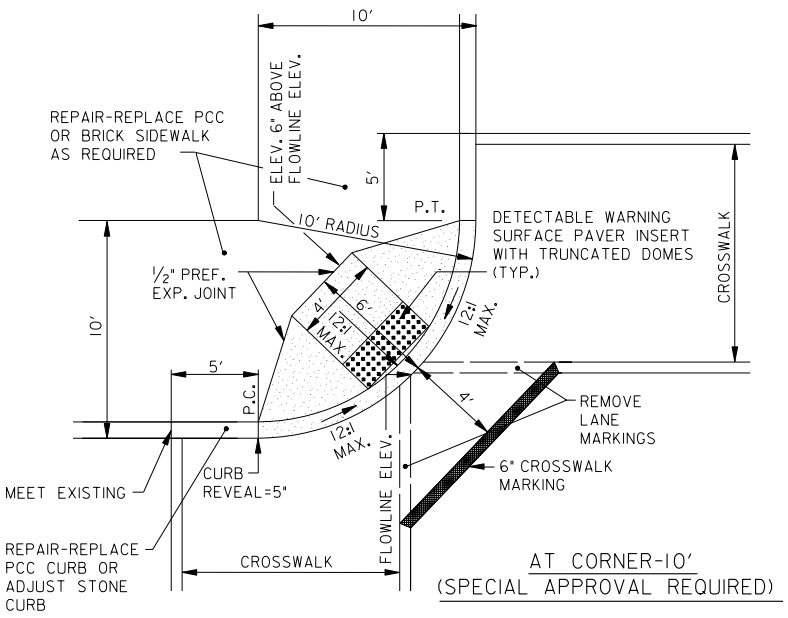

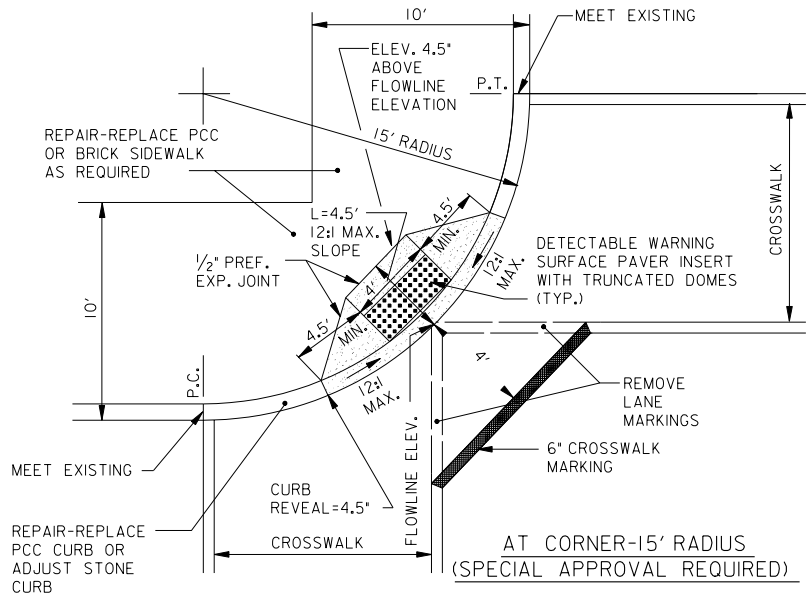

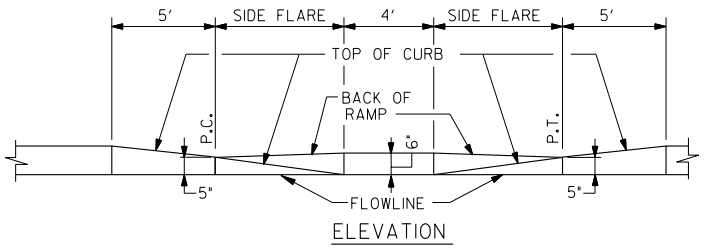

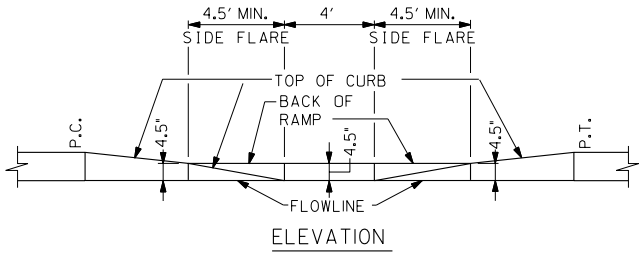

NOTES:

1. FOR SKEWED INTERSECTION, ACUTE CORNER SHALL DETERMINE THE LOCATION OF LIGHT POLES, RAMPS AND CROSSWALKS.
2. ALL RAMPS SHALL CONFORM TO THE LATEST AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) CRITERIA.
3. INSTALL DETECTABLE WARNING SURFACE PAVERS WITH TRUNCATED DOMES FOR A DISTANCE OF 24" FROM THE BACK OF THE CURB AS SHOWN.
4. THE SURFACE OF THE RAMP SHALL BE BROOM FINISHED (STEEL BRISTLE).
5. RAMP SHALL BE CONSTRUCTED WITH PCC SIDEWALK CONCRETE (NO DARKENING AGENTS).
6. ANY LIGHT POLE FOUNDATION SHALL BE CONSTRUCTED INDEPENDENTLY OF RAMP.
7. DESIGN STORM DRAIN SYSTEMS TO SHED WATER AWAY FROM RAMPS.
8. FOR WIDTHS OF SIDEWALK & ANGLES OF INTERSECTION DIF. FROM THAT SHOWN, THE ENGINEER WILL MODIFY RAMP DESIGN ACCORDINGLY SO THAT SLOPE REQUIREMENTS ARE MET.
9. DETAILS SHOWN FOR INSTALLATION OF RAMPS IN EXIST. CONSTRUCTION TO BE USED ONLY WHEN 2 RAMPS AT CORNER CANNOT BE CONSTRUCTED IN ACCORDANCE W/ ADAAG CRITERIA.
10. GUTTER, IF ANY, NOT SHOWN. REPAIR OF GUTTER, IF REQUIRED, SHALL BE DONE UNDER THE APPROPRIATE PAY ITEM.
11. THE FINAL LOCATION OF RAMP WILL BE DECIDED BY THE ENGINEER ON SITE.

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RECOMMENDED: DEPUTY CHIEF ENGINEER

APPROVED: CHIEF TRANSPORTATION ENGINEER

WHEELCHAIR- BICYCLE RAMPS WITHIN CORNER RADIUS

d. DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

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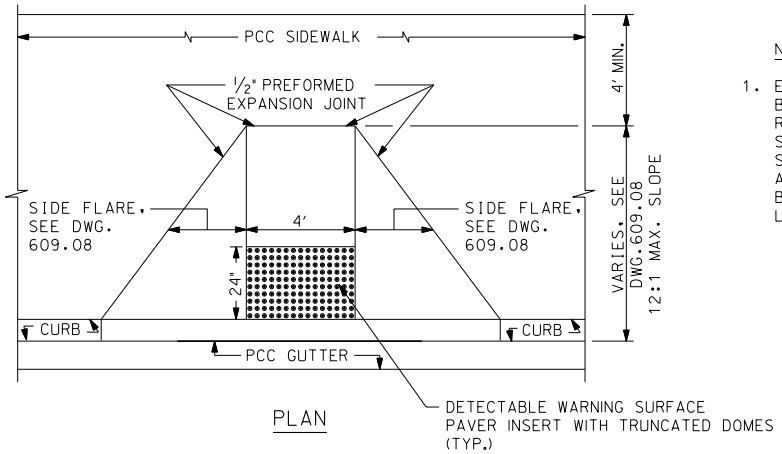
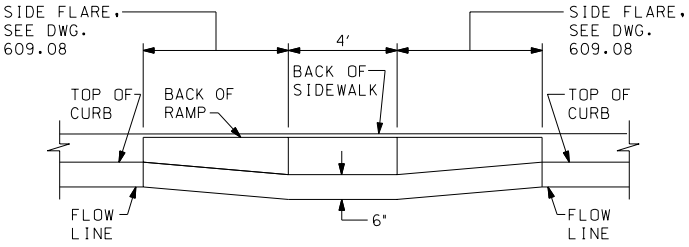


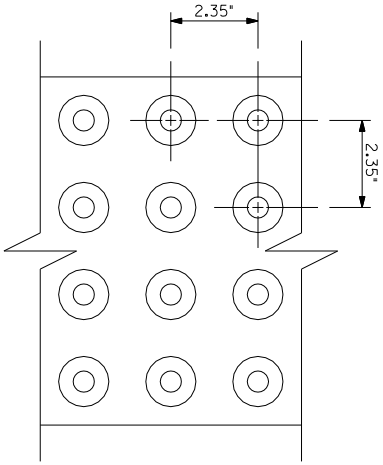
PLAN

NOTES:

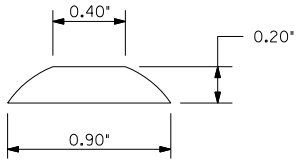
1. EITHER (1) SIDEWALK SLOPE BEHIND RAMP SHALL BE REDUCED, BUT NOT LESS THAN 0.5%, OR (2) IF RIGHT-OF-WAY AND PHYSICAL CONDITIONS PERMIT, SIDEWALK SHALL BE EXTENDED, SO THAT MAXIMUM SLOPE OF 12:1 ALONG CENTERLINE OF RAMP IS ACHIEVED. IF 12:1 SLOPE CANNOT BE ACHIEVED BY (1) OR (2) ABOVE, THEN MAXIMUM SLOPE IN AT LEAST ONE SIDE FLARE SHALL BE 12:1.



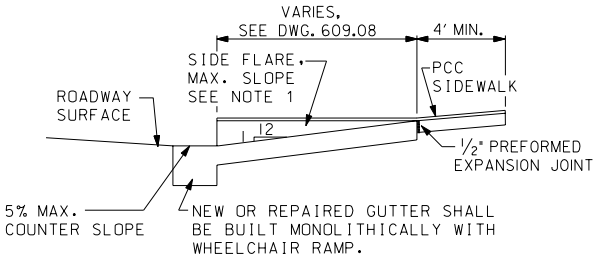
ELEVATION OF RAMP AT FLOWLINE



DOME SPACING



DOME SECTION



SECTION AT CENTERLINE OF RAMP

DETECTABLE WARNING SURFACE PAVER/TRUNCATED DOME NOTES:

1. DETECTABLE WARNING SURFACE PAVER/TRUNCATED DOME INSERT SHALL BE INSTALLED 24" FROM THE BACK OF THE CURB AS SHOWN.
2. DETECTABLE WARNING SURFACE PAVER SHALL CONSIST OF A SURFACE OF TRUNCATED DOMES ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
3. DETECTABLE WARNING SURFACE PAVER/TRUNCATED DOME INSERT SHALL CONTRAST VISUALLY WITH ADJACENT WALKING SURFACES.

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WHEELCHAIR-BICYCLE RAMPS DETAILS

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

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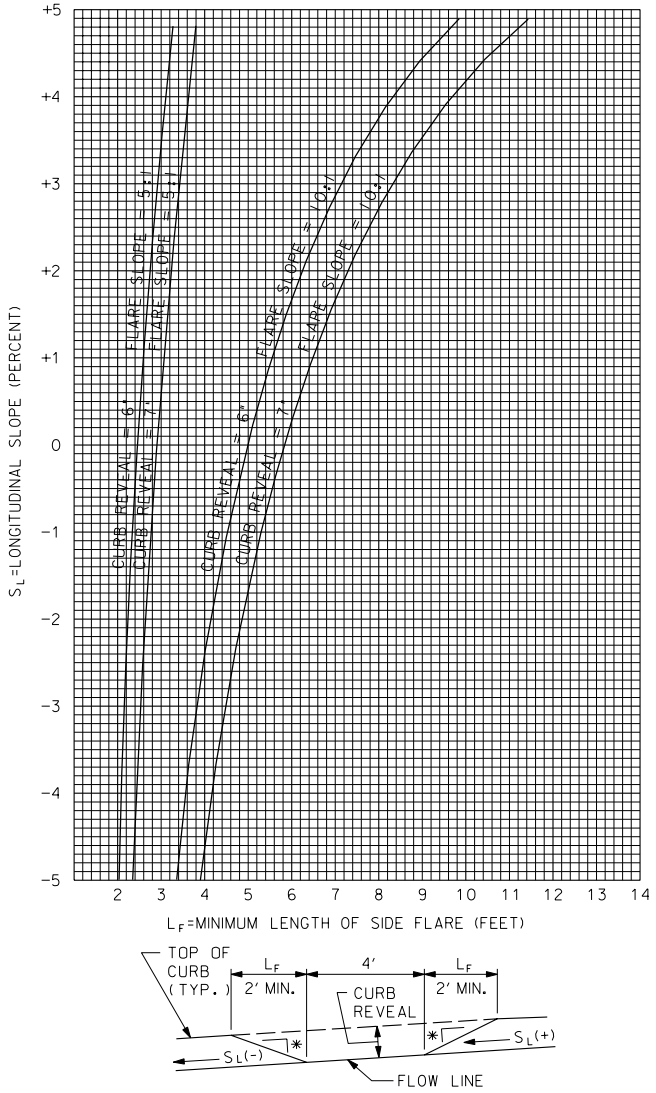
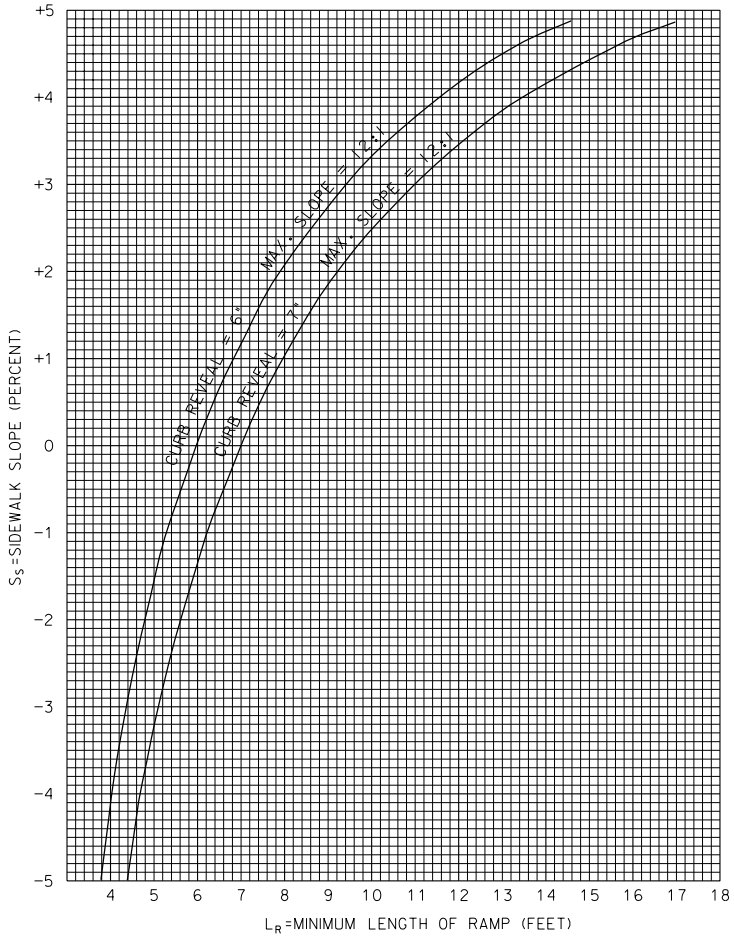
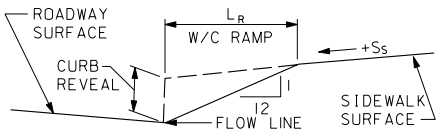


* DESIRABLE SLOPE OF SIDE FLARE AT FLOW LINE SHALL BE 10:1. WHERE RESTRAINTS ARE PRESENT, SLOPE OF SIDE FLARE MAY BE INCREASED TO 5:1 BUT IN NO CASE SHALL LENGTH OF SIDE FLARE BE LESS THAN 2'-0".

ELEVATION OF RAMP AT FLOW LINE





SECTION AT CENTERLINE OF RAMP

			RECOMMENDED: DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: CHIEF TRANSPORTATION ENGINEER
REVISED			
ISSUED:			
		REFERENCE	

WHEELCHAIR-BICYCLE RAMPS SLOPE NOMOGRAPHS

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 609.08

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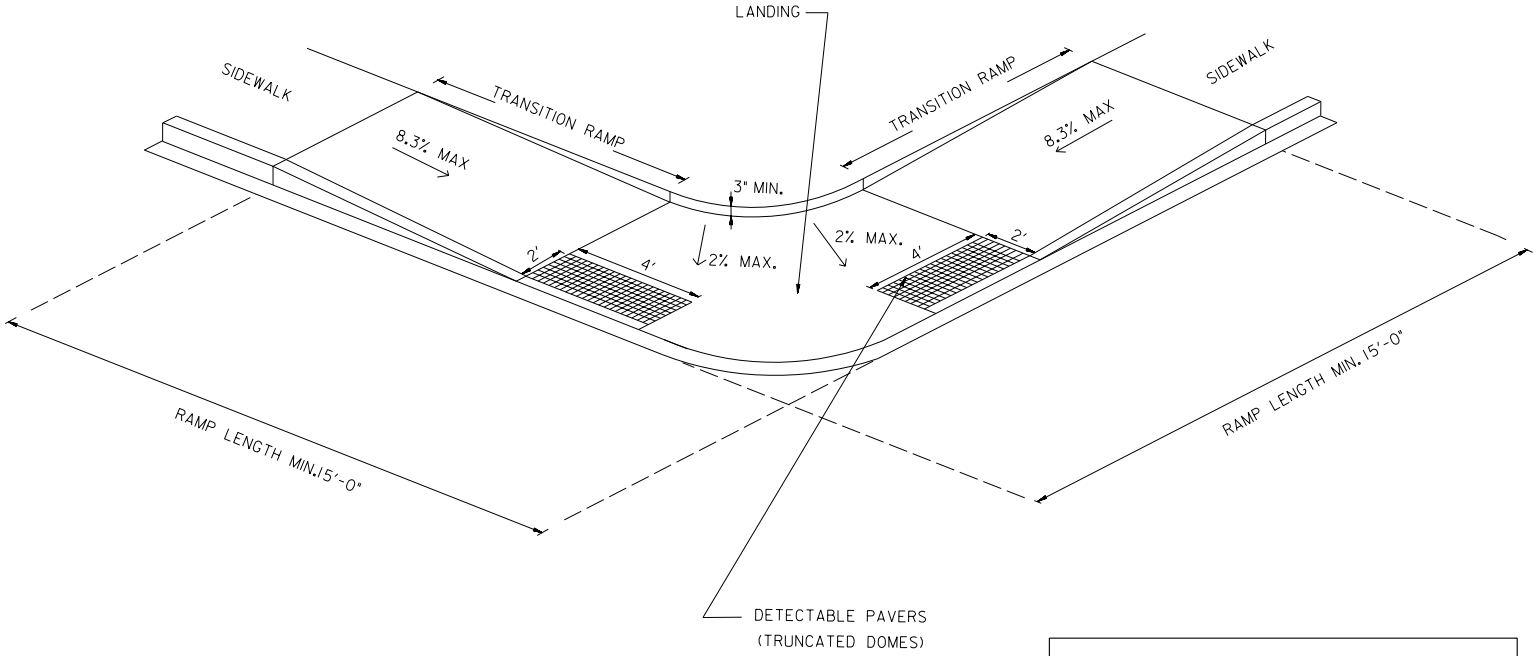
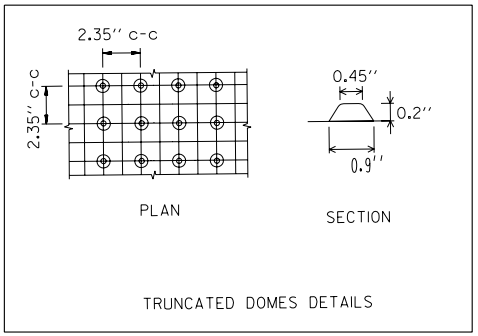
Friday, April 03, 2009 AT 12:18 PM





NOTE:

1. TO BE USED ONLY AT LOCATIONS WHERE THERE IS NOT ENOUGH SIDEWALK WIDTH AND WITH THE APPROVAL OF THE PROJECT ENGINEER.
2. RAMP LENGTH MIN DISTANCE = 15'-0" FROM PI TO START OF TRANSITION RAMP.

DATE	APPR.	
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		REFERENCE

RECOMMENDED: DEPUTY CHIEF ENGINEER

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PARALLEL WHEELCHAIR RAMPS

d. DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 609.09

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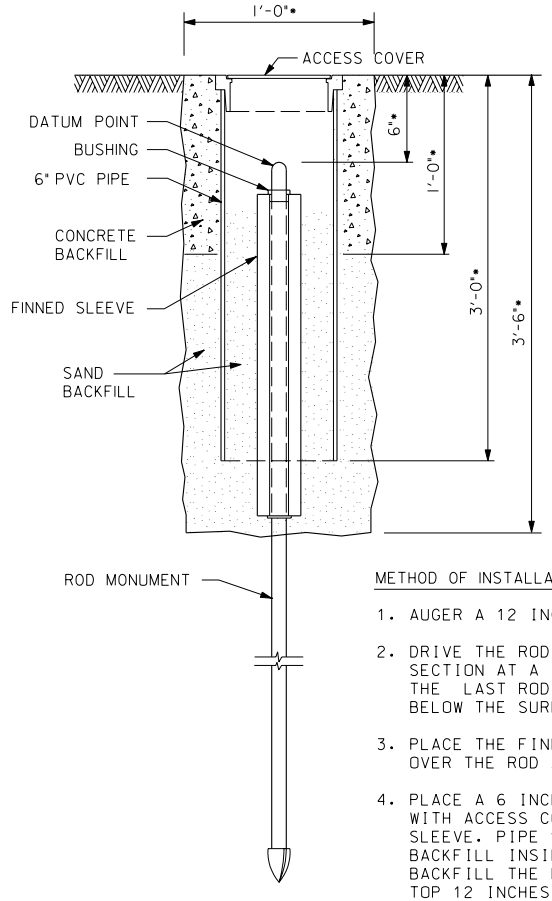
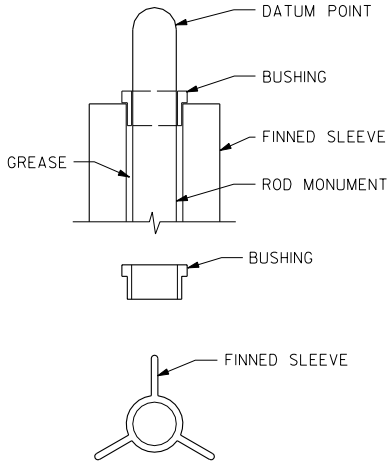




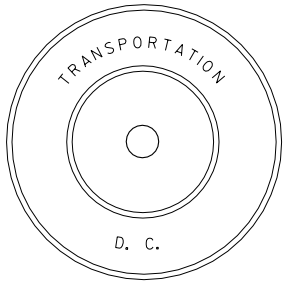
METHOD OF INSTALLATION:

1. AUGER A 12 INCH HOLE TO A DEPTH ABOUT 3½ FEET.
2. DRIVE THE ROD MONUMENT INTO THE GROUND, A SECTION AT A TIME, TO REFUSAL. THE TOP OF THE LAST ROD SHOULD BE ABOUT 6 INCHES BELOW THE SURFACE.
3. PLACE THE FINNED SLEEVE (FILLED WITH GREASE) OVER THE ROD AND ADD A DATUM POINT.
4. PLACE A 6 INCH DIAMETER PVC PIPE 3 FEET LONG, WITH ACCESS COVER GLUED ON, OVER THE FINNED SLEEVE. PIPE SHOULD NOT TOUCH THE FINS. BACKFILL INSIDE THE PVC PIPE WITH SAND. BACKFILL THE HOLE WITH SAND. BACKFILL THE TOP 12 INCHES OF THE HOLE WITH CONCRETE.

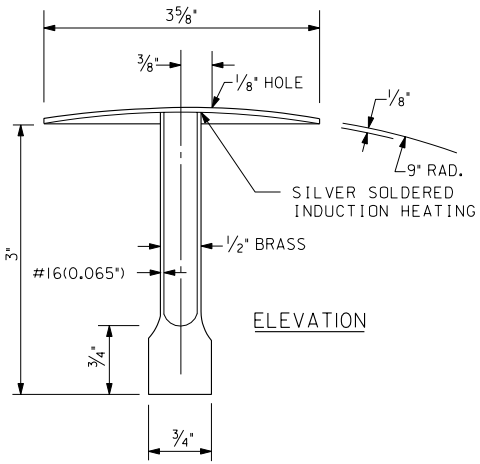
MATERIALS:

MATERIALS SHALL BE BERNTSEN SURVEY MONUMENTS OR APPROVED EQUAL.

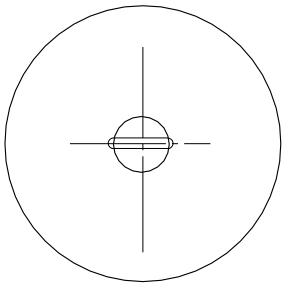
FIRST ORDER BENCHMARK



TOP VIEW



ELEVATION



BOTTOM VIEW

REFERENCE MARK

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ISSUED:			
		REFERENCE	

PERMANENT BENCHMARK AND REFERENCE MARK

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 613.01

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Friday, April 03, 2009 AT 2:19 PM

GENERAL NOTES:

1. ALL TRAFFIC CONTROL SHALL CONFORM TO THE MOST STRINGENT STANDARDS SET FORTH IN THE LATEST EDITIONS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE DDOT WORK AREA TRAFFIC CONTROL MANUAL AND DDOT STANDARDS SPECIFICATIONS FOR HIGHWAYS AND STRUCTURES.
2. TYPICAL CAN BE USED ONLY IF IT REFLECTS ACTUAL ROADWAY CONFIGURATION.
3. PARKING SHALL BE RESTRICTED 72 HOURS IN ADVANCE UNLESS THERE IS AN EMERGENCY.
4. SIGNS SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF WORK AND REMOVED IMMEDIATELY AFTER COMPLETION OF ACTIVITIES.
5. SIGNS SHALL BE MOUNTED ON SPRING LOADED STANDS.
6. THE GUIDELINES FOR SIGN AND CONE SPACING ARE LISTED IN THE MUTCD.
7. ON ONE-WAY STREETS SIGNS SHALL BE INSTALLED ON BOTH SIDES OF ROADWAY APPROACHING WORK ZONE.
8. FULL VIEW OF ADVANCE WARNING SIGNS SHALL BE CLEAR OF OBSTRUCTION ON APPROACH TO WORK ZONE.
9. ADJACENT WORK ZONES SHALL COORDINATE SIGNAGE TO AVOID CONFUSING MESSAGES.
10. SIGN SPACING SHALL BE ADJUSTED TO AVOID CONFLICT WITH EXISTING PERMANENT SIGNAGE.
11. BUS ROUTE TRAVEL LANES SHALL BE A MINIMUM OF 11 FEET IN WIDTH.
12. WMATA SHALL BE CONTACTED AT (202) 962 - 1811 PRIOR TO ANY WORK ALONG A BUS ROUTE. WMATA MUST APPROVE ALL CLOSURES/MOVING OF BUS STOPS IN ADVANCE. FOR LONGER TERM BUS STOP RELOCATION, CALL WMATA AT (202) 962-5678.
13. MUST OBTAIN A DCRA NOISE PERMIT FOR RESIDENTIAL WEEKEND AND NIGHT-TIME WORK.
14. UNLESS A SIDEWALK IS FULLY OR PARTIALLY CLOSED, A MINIMUM OF 6 FEET WIDTH WITH NO RESTRICTION (FREE OF FIXTURE) SHALL BE MAINTAINED
15. ALL AFFECTED TRAVEL LANES MUST MAINTAIN A 10 FOOT MINIMUM WIDTH UNLESS OTHERWISE APPROVED BY THE CHIEF ENGINEER.
16. A TEMPORARY PEDESTRIAN ACCESS MUST BE PROVIDED FOR A SIDEWALK CONSTRUCTION OVER 2 WEEKS DURATION.
17. EXCAVATION IN THE SIDEWALK SHALL BE PLATED OR TEMPORARILY BACKFILLED AT THE END OF EACH WORK DAY.

SPEED (MPH)	MINIMUM SIGN SPACING (FT)
15	100
20	100
25	150
30	200
35	250
40	350
45	550
50	600
55	700

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TCP GENERAL NOTES

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

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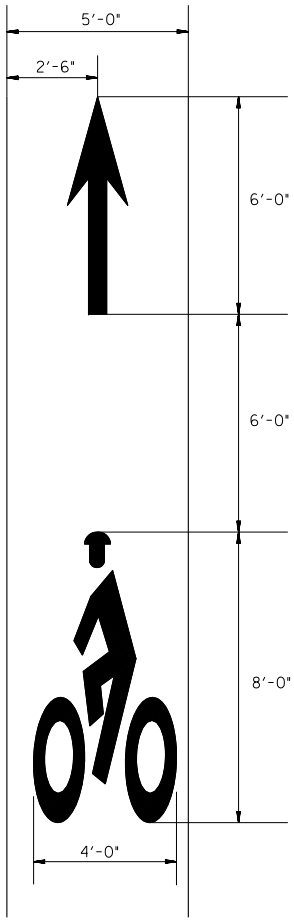
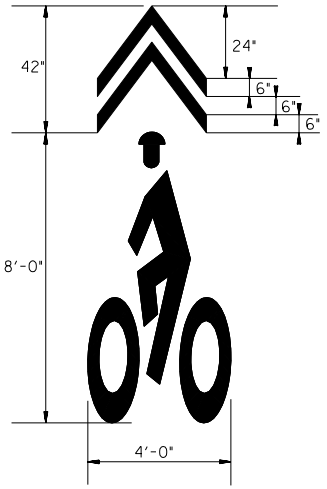


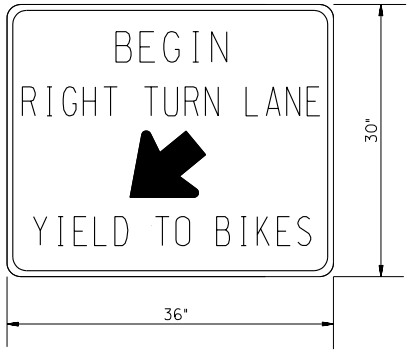
BIKE LANE SYMBOL

BIKE LANE SYMBOL SHALL HAVE A
BIKER FACING LEFT OR CENTER OF ROAD

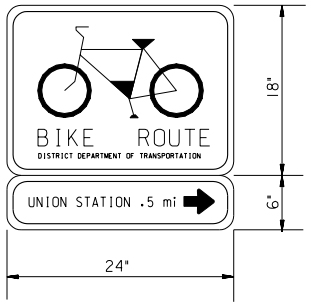


SHARED LANE SYMBOL

R4-4



D11-1 & D1-1A



R4-4 GUIDANCE:
IF USED, BEGIN RIGHT TURN LANE - YIELD TO BIKES (R4-4) SIGNS SHOULD BE PROVIDED AT THE BEGINNING OF A RIGHT TURN LANE TO INFORM BICYCLISTS AND MOTORISTS OF THE MERGING AREA. THESE SIGNS SHOULD ONLY BE INSTALLED AT LOCATIONS WHERE THERE IS A DEDICATED RIGHT TURN AREA (BUSES MAY BE EXCEPTED). THEY SHOULD ALWAYS BE INSTALLED WHERE THERE IS A DEDICATED BICYCLE FACILITY MARKED AS A BICYCLE LANE OR SHARED ROADWAY.

R4-4 SIGN DESIGN:
SOURCE: STANDARD MUTCD
SIZE: 36"x30"
COLOR: BLACK LETTERS ON WHITE REFLECTIVE BACKGROUND

D11-1 GUIDANCE:
BICYCLE ROUTE GUIDE (D11-1) SIGNS SHOULD BE PROVIDED AT DECISION POINTS ALONG DESIGNATED BICYCLE ROUTES, INCLUDING SIGNS TO INFORM BICYCLISTS OF BICYCLE ROUTE DIRECTION CHANGES AND CONFIRMATION SIGNS FOR ROUTE DIRECTION, DISTANCE, AND DESTINATION.

D11-1 SIGN DESIGN:
SOURCE: MODIFIED MUTCD
SIZE: 18"x24"
COLOR: WHITE LETTERS ON GREEN REFLECTIVE BACKGROUND

D1-1A GUIDANCE:
DESTINATION (D1-1 AND D1-1A) SIGNS SHALL BE MOUNTED BELOW BICYCLE ROUTE GUIDE SIGNS TO FURNISH ADDITIONAL INFORMATION SUCH AS DIRECTIONAL CHANGES IN ROUTE, OR INTERMITTENT DISTANCE AND DESTINATION INFORMATION.

D1-1A SIGN DESIGN:
SOURCE: STANDARD MUTCD
SIZE: 6"x24"
COLOR: WHITE LETTERS ON GREEN REFLECTIVE BACKGROUND

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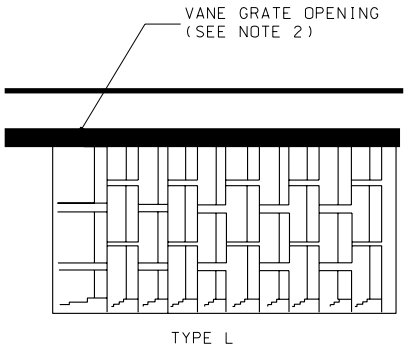
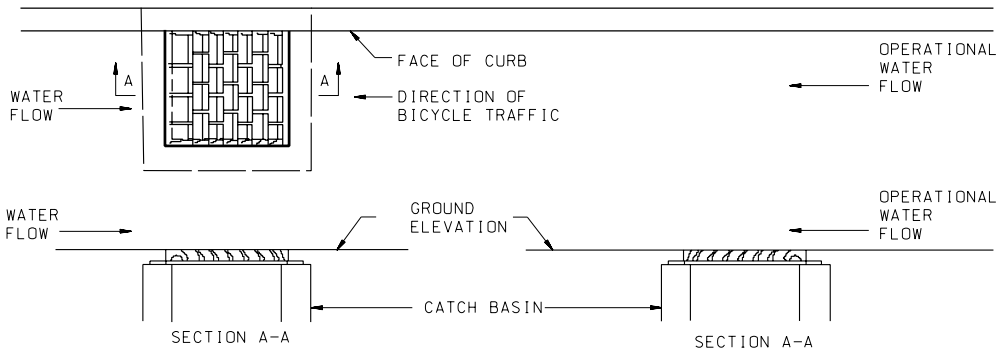
DETAILS OF BICYCLE SYMBOLS AND SIGNS

d. DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 616.25





NOTES:
1. GRATE TYPES ARE ONLY CONSIDERED BICYCLE SAFE WITH THE CURB ORIENTATION AS SHOWN.

2. VANE GRATE OPENINGS ARE DESIRABLE IN LOCATIONS WHERE HIGHER HYDRAULIC CAPACITY IS NEEDED. THE GATE MUST BE ORIENTED WITH THE DIRECTION OF FLOW AS SHOWN IN THE DETAIL.

3. GRATE TYPES SHOWN ARE BASED UPON NEENAH FOUNDRY MODEL NUMBERS. OTHER MANUFACTURER GRATES MAY BE INSTALLED IF THEY MEET THE GRATE DESIGN SPECIFICATIONS SHOWN HERE.

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BICYCLE SAFE STORMWATER GRATES

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 616.26

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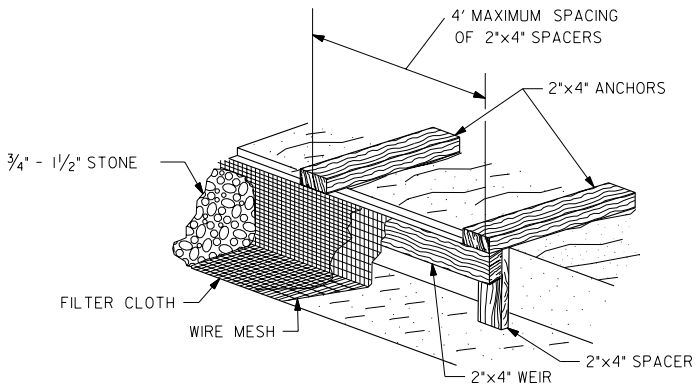
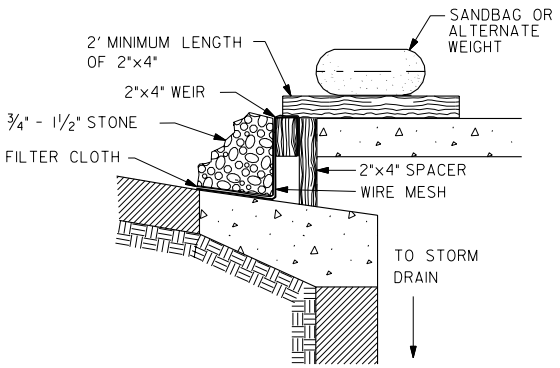
STANDARD SYMBOL

CIP



MAX. DRAINAGE AREA = ¼ ACRE

PERSPECTIVE VIEW



CROSS SECTION

CONSTRUCTION SPECIFICATIONS:

1. ATTACH A CONTINUOUS PIECE OF WIRE MESH (30" MINIMUM WIDTH BY THROAT LENGTH PLUS 4') TO THE 2"x4" WEIR (MEASURING THROAT LENGTH PLUS 2') AS SHOWN.

2. PLACE A CONTINUOUS PIECE OF GEOTEXTILE CLASS E, THE SAME DIMENSIONS AS THE WIRE MESH, OVER THE WIRE MESH AND SECURELY ATTACH IT TO THE 2"x4" WEIR.

3. SECURELY NAIL THE 2"x4" WEIR TO A 9" LONG VERTICAL SPACER TO BE LOCATED BETWEEN THE WEIR AND THE INLET FACE (MAX. 4' APART).

4. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL (MINIMUM 2' LENGTHS OF 2"x4" TO THE TOP OF THE WEIR AT SPACER LOCATIONS). THESE 2"x4" ANCHORS SHALL EXTEND ACROSS THE INLET TOP AND BE HELD IN PLACE BY SANDBAGS OR ALTERNATE WEIGHT.

5. THE ASSEMBLY SHALL BE PLACED SO THAT THE END SPACERS ARE A MINIMUM 1' BEYOND BOTH ENDS OF THE THROAT OPENING.

6. FORM THE ½"x½" WIRE MESH AND THE GEOTEXTILE FABRIC TO THE CONCRETE GUTTER AND AGAINST THE FACE OF THE CURB ON BOTH SIDES OF THE INLET. PLACE CLEAN ¾" TO 1½" STONE OVER THE WIRE MESH AND GEOTEXTILE IN SUCH A MANNER TO PREVENT WATER FROM ENTERING THE INLET UNDER OR AROUND THE GEOTEXTILE.

7. THIS TYPE OF PROTECTION MUST BE INSPECTED FREQUENTLY AND THE FILTER CLOTH AND STONE REPLACED WHEN CLOGGED WITH SEDIMENT.

8. ASSURE THAT STORM FLOW DOES NOT BYPASS THE INLET BY INSTALLING A TEMPORARY EARTH OR ASPHALT DIKE TO DIRECT THE FLOW TO THE INLET.

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CURB INLET PROTECTION

d. DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 628.08

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APPENDIX N
DC WATER
SPECIFICATIONS
& DETAILS

SECTION 01 78 42

AS-BUILT DRAWINGS

PART 1 – GENERAL

1.1 SUMMARY

A. This Section covers the requirements for drawings containing information on infrastructure in the constructed or “as-built” state.

B. As-built Drawings are an official record of the project at the time of construction completion. The original “as-designed” contract drawings are modified to show all additions, deletions and substantial deviations made during construction.

C. Location and elevation information is field verified and drawings are corrected to match as-built conditions to the accuracy identified in item C. 31 below.

D. As-built Drawings shall be prepared and certified by an authorized officer of the construction firm.

1.2 RELATED DOCUMENTS

A. Drawings and Special Provisions and General Requirements of the Contract and other Division 1 Specifications Sections, apply to this section.

B. DC Water CADD Manual.

1.3 RELATED SECTIONS: Specified elsewhere but not limited to:

1. Submittals: Section 01 33 00.
2. Project Close Out: Section 01 77 00.

1.4 MAINTENANCE OF DOCUMENTS AND SAMPLES

A. Contractor shall maintain at the site, for t DC Water, one (1) record copy of prints of drawings including delineated "As-built" modifications

B. Store Contract Documents and samples in Contractor's field office apart from documents used for construction.

1. Provide files and racks for storage of documents.
2. Provide secure storage space for storage of samples.

C. Maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.

D. Within 1 day's notice, during the course of the work, current as-builts shall be made available for inspection by DC Water.

1.5 RECORDING "AS-BUILT" MODIFICATIONS

A. Label each document "AS-BUILT" in neat, large printed letters.

B. Record information concurrently with construction progress.

1. Do not conceal any work until required information is recorded.
2. Accurately record information in an understandable drawing technique.
3. Mark Record Prints to show the actual installation where installation varies from that shown originally.

C. Drawings shall be: .

1. Legibly marked to record all deviations to current Contract Documents showing actual construction.
2. Accurately record information in an acceptable drawing technique as stated in DC Water CADD Manual.
3. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
4. Depths of various elements of foundation in relation to finish first floor datum.
5. Dimensional changes to Drawings.
6. The location and dimensions of any major changes within a building structure.
7. Correct grade, elevations, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from contract plans.
8. The topography, invert elevations and grades of drainage installed or affected by the project.
9. Actual location of anchors, construction and control joints, etc. in concrete.
10. Unusual or uncharted obstructions that are encountered in the contract work area during construction.
11. Horizontal and vertical location, kinds and sizes of all existing and new underground utilities and appurtenances, referenced to permanent surface improvements.
12. Measurements shall be shown for all underground utilities change of direction points and all surface or underground components such as valves, bends, manholes, drop inlets, clean outs, wyes, corporation stops, curb stops, inlets, thrust blocks, hydrants, PRV, pipe slope and distances, pressure relief valves, air release valves, fittings, etc.
13. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
14. Data required for casing pipes: Location, type, material and size
15. Data station on each water tap and sewer tap: : Location, type (Corp. stop if water wye branch, thimble, z-strap insertion, etc. if sewer) material, diameter, installation

date, DC Water standard tap cards should be used to report this data where applicable.

16. Data required for valves: date set, valve type, size, material, position (open-closed) depth to top of operating nut, manufacturer, number of turns to open, direction of opening, main stem position (horizontal-vertical), operator type if offset or gear reducer, purpose/function (side stop, isolation, blow off, etc) and joint types.

17. Data required for hydrants: date set, manufacturer, depth of bury, distances between main and valve, distance between valve and hydrant and face of curb.

18. Data on manholes, inlets, etc.: rim and invert in and out elevations, diameter of manhole and inlet dimensions, materials of construction (poured in place conc. pre-cast conc., brick, other).

19. Data on gravity pipeline: date installed, slope (determined from end of pipe to end of pipe), size of pipe, pipe material, nominal diameter, pipe class, type of joints, manufacturer. The manhole at the lowest elevation will be station 0+00.

20. Location of underground utilities and appurtenances shall be shown by dimensioning along the utility run from a reference point and by offset dimensions to two permanently fixed surface features, the end of each run including each change in direction.

21. Mark important additional information that was either shown schematically or omitted from original Drawings.

22. Show the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.

23. Changes made by addenda. Addenda number shall be noted.

24. Field changes of dimension and detail. Field Order Number shall be noted.

25. Changes made by field order or by change order. Change Order Number shall be noted.

26. Correct dimensions and details transferred from shop drawings.

27. Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor; including but not limited to fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.

28. Record information on the Work that is shown only schematically.

29. Datum: All plans shall be accurately located in Maryland state plane coordinates. And with datum reference:

    a. NAD 83 Horizontal

    b. NAVD 88 Vertical corrected to District Datum or show local conversion to District Datum.

30. Details not on original Contract Drawings.

    a. Record the name of manufacturer, supplier, installer, and other information necessary to provide a record of selections made.

    b. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.

    c. Layout and schematic drawings of electrical circuits and piping.

31. As-Built Survey Construction Tolerances:

    a. Contractor shall provide measurements and elevations of the following construction elements to within the stated tolerance. Note: All tolerance are plus or minus.

(1)	Manhole Rim	0.10	ft
(2)	Manhole Inverts	0.05	ft
(3)	Inlet-catch basin Rim	0.10	ft
(4)	Inlet-catch basin Invert	0.05	ft
(5)	Gravity Sewer Slope	0.02	%
(6)	Gravity Pipe Location	1.00	ft
(7)	Manhole Location	0.50	ft
(8)	Inlet Location	1.00	ft
(9)	Fire Hydrant Location	1.00	ft
(10)	Valve Location	1.00	ft
(11)	Valve Depth	0.10	ft
(12)	Fitting Locations	0.50	ft
(13)	Fitting Depths	0.10	ft
(14)	Offsets	0.50	ft
(15)	Wye Location	1.00	ft
(16)	Wye Depth	0.50	ft
(17)	Corporation Stop Location	1.00	ft
(18)	Corporation Stop Depth	0.50	ft
(19)	Meter location	1.00	ft
(20)	Blow Off Assembly location	1.00	ft
(21)	PRV location	1.00	ft

(22)	Air Release Pit location	1.00	ft
(23)	Pressure Pipe Location	1.00	ft
(24)	Pressure Pipe Depth	0.50	ft
(25)	Structure – Elevations	0.10	ft
(26)	Structure – Dimensions	0.10	ft

1.6 ELECTRICAL AS BUILT DRAWINGS

A. "As Built" wiring and interconnection drawings shall be provided for all field installed and applied wiring as part of the Contract for all electrically powered devices.

B. These drawings shall be supplied in addition to the wiring and interconnection diagrams specified and required in the individual sections of the technical sections.

C. The drawings shall illustrate electrical control devices, instruments and systems, and all instrumentation and/or control system.

D. Information on the drawings shall contain sufficient data and be presented in a format, which permits tracing of wires and trouble shooting on all electrically powered and controlled equipment, independent o any other document or drawing.

E. Information shall be provided for any pneumatically or hydraulically controlled systems, and shall include interconnection drawings serving functions similar to that of electrical equipment and devices.

F. Information presented, such as connections, terminations, conduit or wire-way members, junction box numbers, terminal block identification, terminal numbers, wire numbers, reference to manuals, etc. shall be verified in the field prior to submission of the drawings.

G. In addition, references shall be made to the internal wiring of on-field wired devices such as the termination at prefabricated panels, control devices, control stations for electrical and electronic equipment.

H. These references shall include the terminal block number and/or the device identification, the drawing number of the referenced item and the service or Operation & Maintenance Manual identification in which the drawing is contained. If the connection of a conductor is shown on more than one drawing, the reference shall include all drawing numbers.

1.7 RECORD PRODUCT DATA

A. Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

B. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

C. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.

1.8 CERTIFICATION

A. Certify as a part of each application for payment that project as-built are current at time application is submitted.

B. Certification Statement: The following certification shall be placed on the cover sheet of the project drawing set and signed by a District of Columbia registered Professional Civil Engineer or Professional Land Surveyor:

"I certify that these as-builts are accurate and that all information provided is field-verified as-built information and are correct to with the tolerances specified and substantial conformity with the Project Manual.

Date: _____ Name: _____

(Seal) Signed: _____"

PART 2 – PRODUCTS

(Not Applicable)

PART 3 – EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording:

1. Maintain one (1) copy of each submittal during the construction period for Project As-built (Redlined) purposes.
2. Post changes and modifications to Project As-built (Redlined Drawings) as they occur; do not wait until the end of the Project.

B. Maintenance:

1. Store As-built apart from the Contract Documents used for construction.
2. Do not use As-built for construction purposes.
3. Maintain As-built in good order and in a clean, dry, legible condition, protected from deterioration and loss.
4. Provide access to Project As-built for DC Water's reference during normal working hours.

3.2 FINAL "AS-BUILTS"

A. Contractor will transfer the changes on the redlined drawings to the original electronic CADD files.

B. DC Water shall provide a CD in AutoCAD DWG format for the Contractor's use for DC Water construction projects. However, if as-built drawings are being prepared for non-DC Water funded work (i.e. developer projects, DDOT projects, etc.) DC Water will not be able to provide the base information.

C. Contractor shall use standard professional engineering drafting practices in correcting the original electronic CADD drawings to show the as-built information.

D. All changes shall be made in model space at 1:1 scale.

E. In general, the letter styles, line thickness, and scale will be the same as the original drawings unless stated otherwise.

F. When changes are required on small-scale drawings and in restricted areas; large-scale inserts to be drawn with leaders to the location where applicable.

G. Add and denote in legend, any additional equipment or material facilities, service lines, utilities lines, etc. incorporated under As-built if not already shown in legend.

H. Use written explanations on As-built to describe changes. Do not rely totally on graphic means to convey the revision.

I. Whenever a revision is made, make changes to affect related section views, details, legends, profiles, plans and elevation views, schedules, notes and call-out designations to avoid conflicting data on all other sheets.

J. Legibility of lettering and digit values shall be precise and clear when making changes and clarify ambiguities concerning the nature and application of change involved.

K. CADD Standards: File Naming Convention, layer, etc. shall be to DC Water CADD Manual Standards unless otherwise noted.

L. All As-built "Triangle" changes shall be on a separate single layer as stated in DC Water CADD Manual.

M. Revision Block:

1. Those sheets, which have no changes, will only be labeled “AS-BUILTS” as described above.

2. Those sheets which have changes shown on them will have the label “AS-BUILTS” as described above and will have “REVISED AS-BUILTS” entered in the first available space in the Revision Block. This will be revision one and a number 1 will be entered in the triangle as described. In the event the sheet has already been revised and a number and revision appear in the revision line; the next sequential number will be used.

N. Place an equilateral triangle (3/8” per side) near the area revised for all changes with the revision number inserted in the center of the triangle. One triangle may be placed near the table or detail title where several items in a table or detail are changed or completely redrawn.

3.3 SUBMITTAL: "AS-BUILTS" DOCUMENTS

A. At “Beneficial Occupancy” or with the Substantial Completion Inspection request, the Contractor shall submit marked-up Record Prints to the DC Water. Certify to their accuracy and completion. All modifications clearly marked for identification

B. Within ten (10) days of the Substantial Completion Inspection; Contract shall submit the electronic As-built CDs to DC Water.

C. Contractor to provide two (2) sets of security protected format digital media (CD or DVD disk); one full set in .pdf format and one full set in .dwg CAD format.

D. As-built must be submitted and approved by DC Water prior to acceptance of the improvement and prior to final payment to the Contractor,

PART 4 – MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

A. Work will not be measured separately for payment.

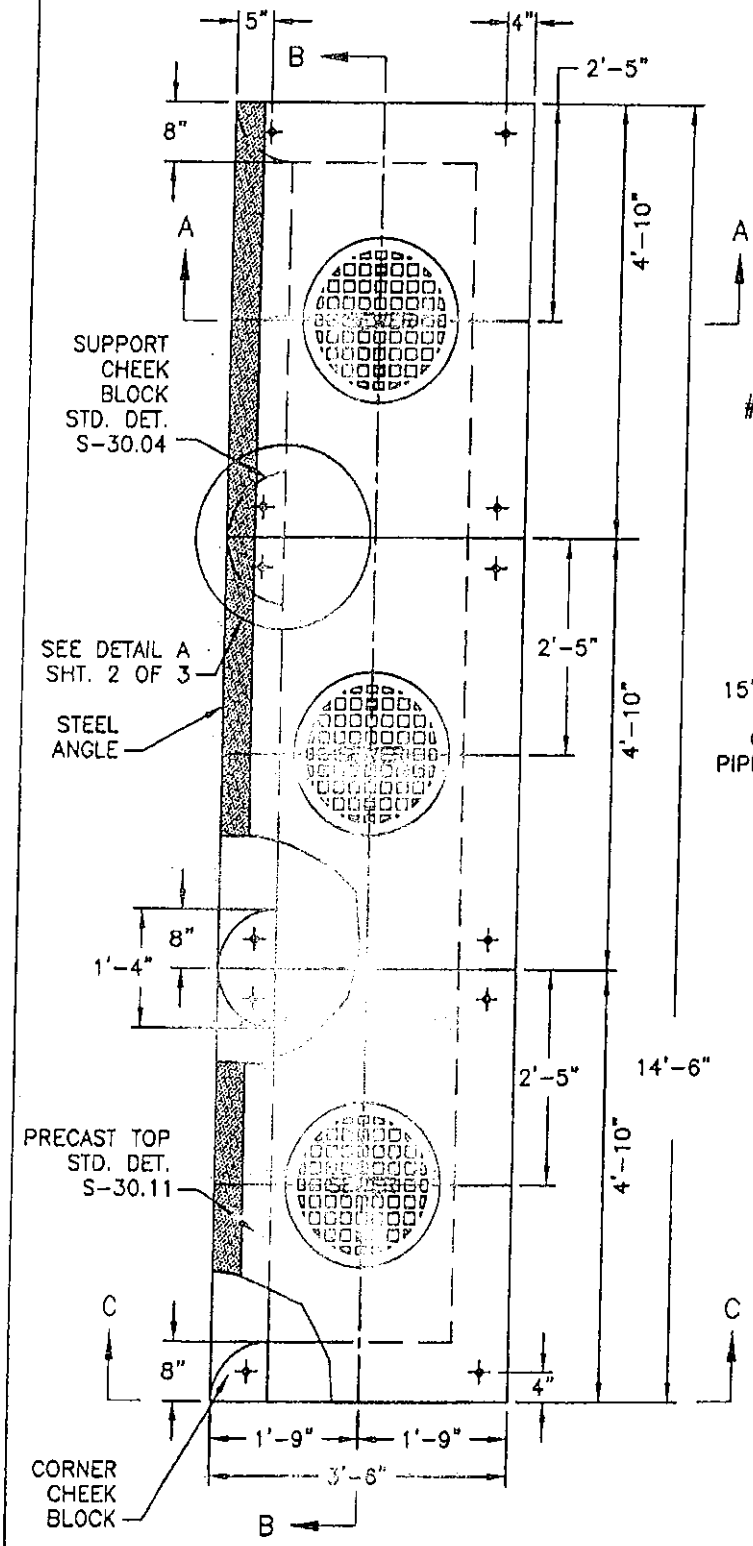
4.02 PAYMENT

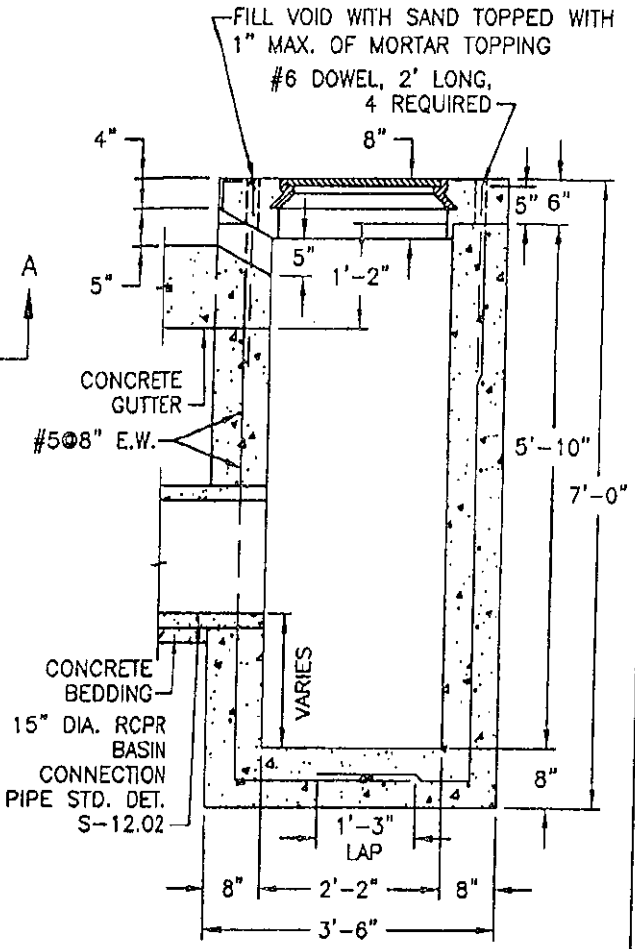
A. The cost thereof, including incidental work and materials, will be included as part of the lump sum of the project.

~ END OF SECTION 01 78 42 ~

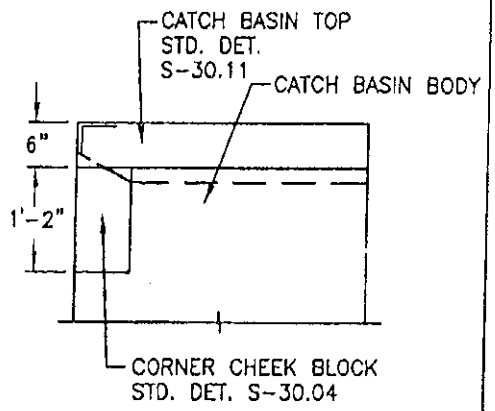
DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

S-31.01
1 OF 3





SECTION A-A

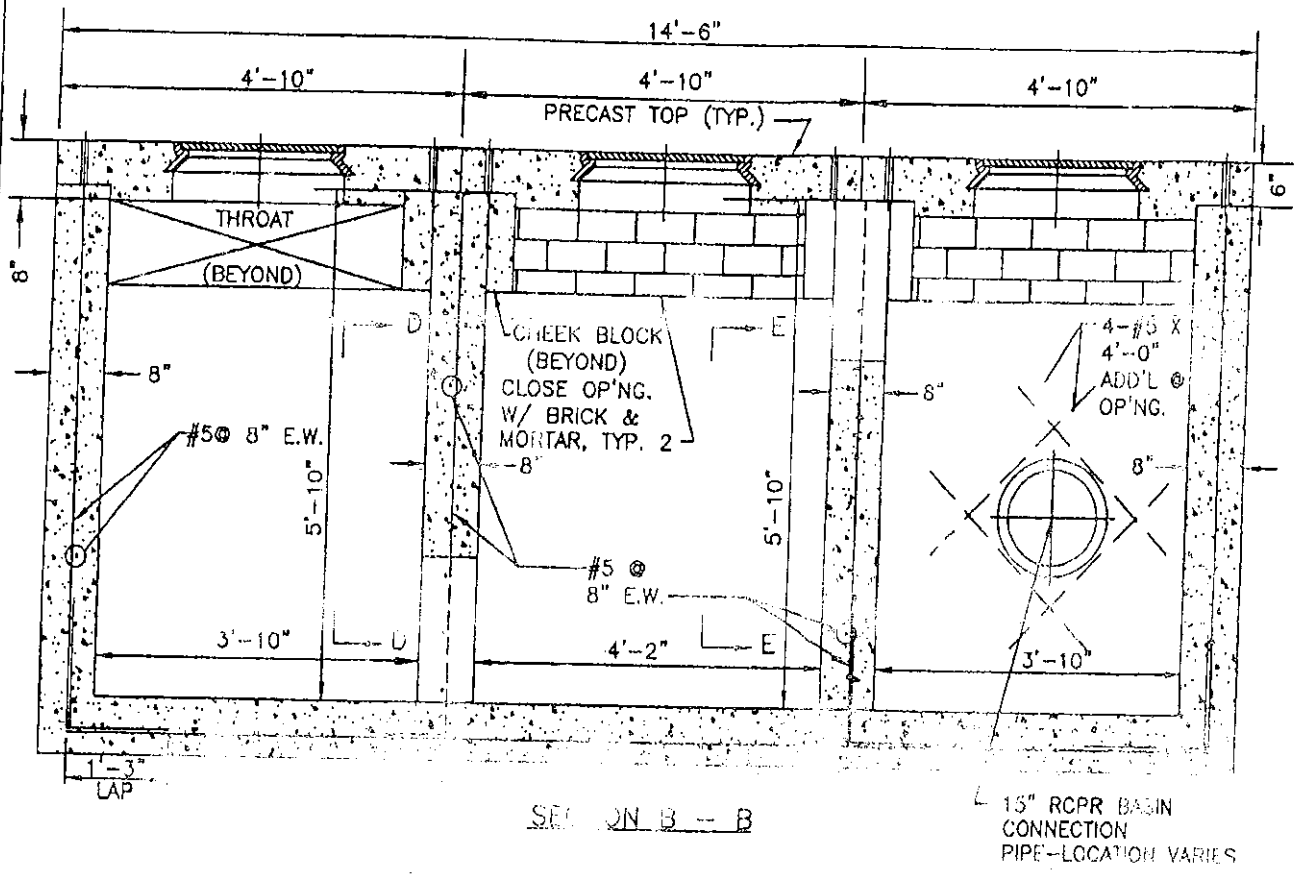


VIEW C-C

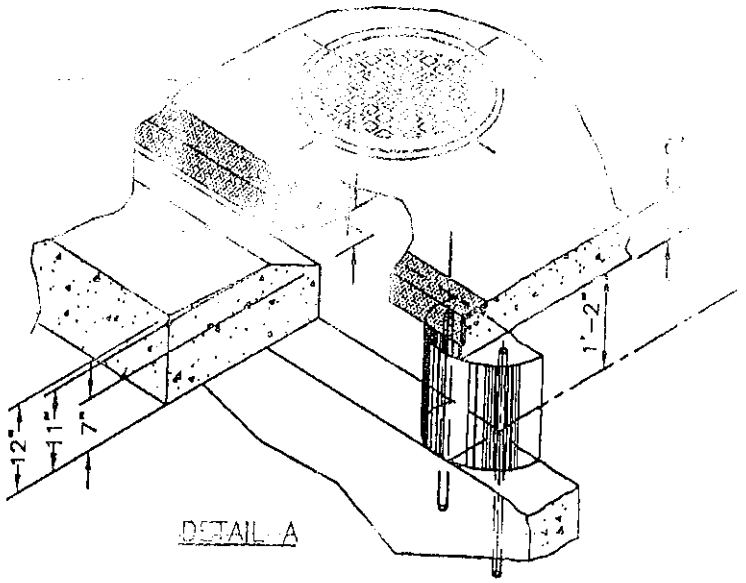
NOTES:

1. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED, TYPE II CEMENT.
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.

APPROVED DATE: MAY 00, 200X	REVISION NO.: 0	STANDARD DETAIL
DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES	DATE: 5/00/0X PREPARED BY: I. SMITH CHECKED BY: W.DARROW	SINGLE THROAT WATER QUALITY BASIN

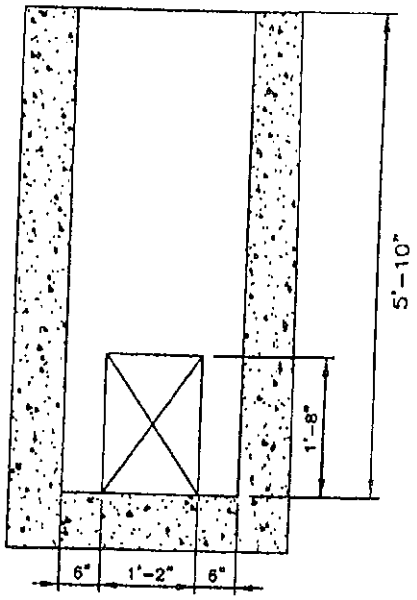


SECTION B -- B

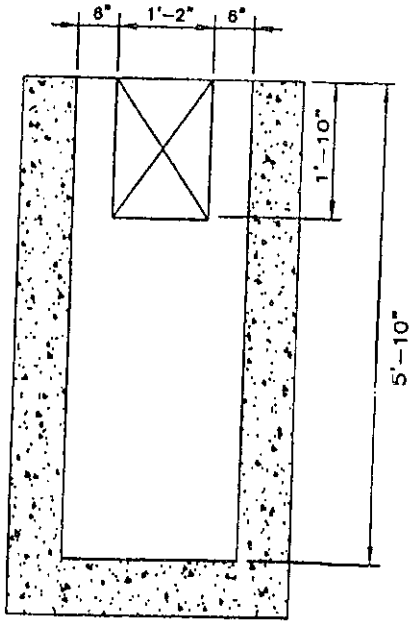


DETAIL A

APPROVED DATE: MAY 00, 200X DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES	REVISION NO.: 0 DATE: 5/00/200X PREPARED BY: I. SMITH CHECKED BY: W. DARROW	STANDARD DETAIL SINGLE THROAT WATER QUALITY BASIN



VIEW D-D

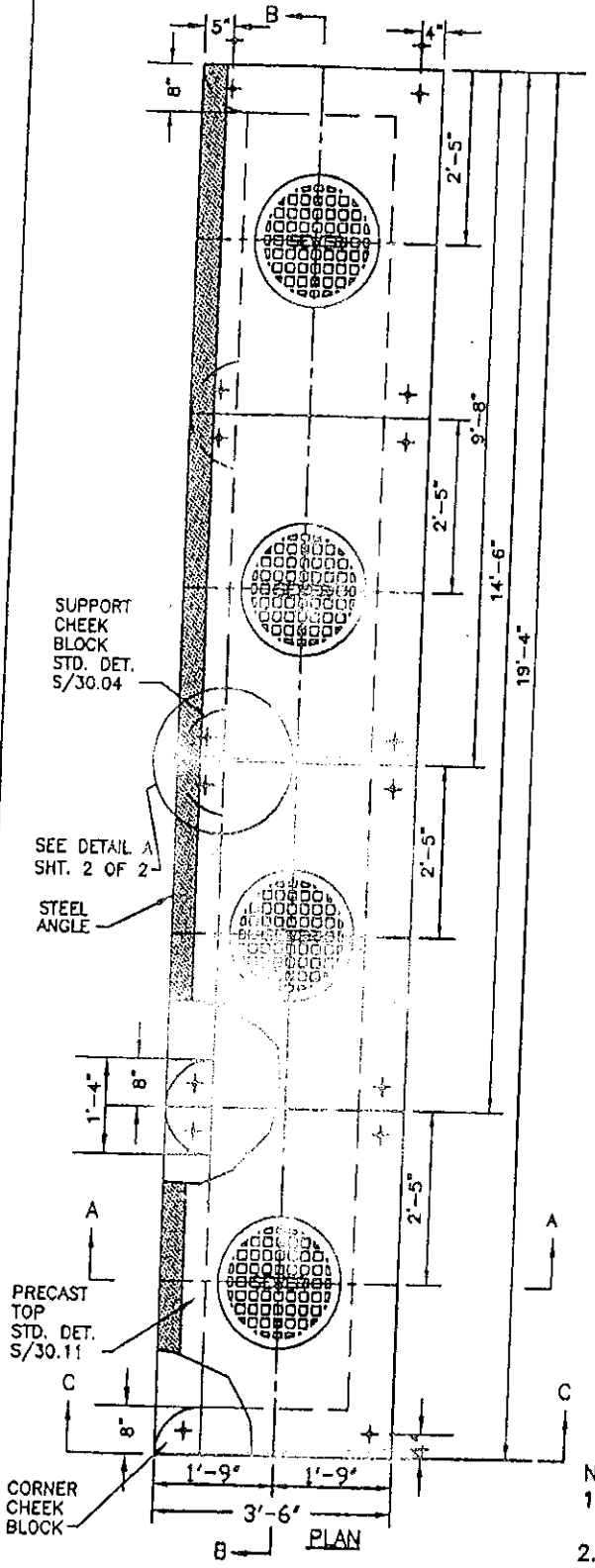


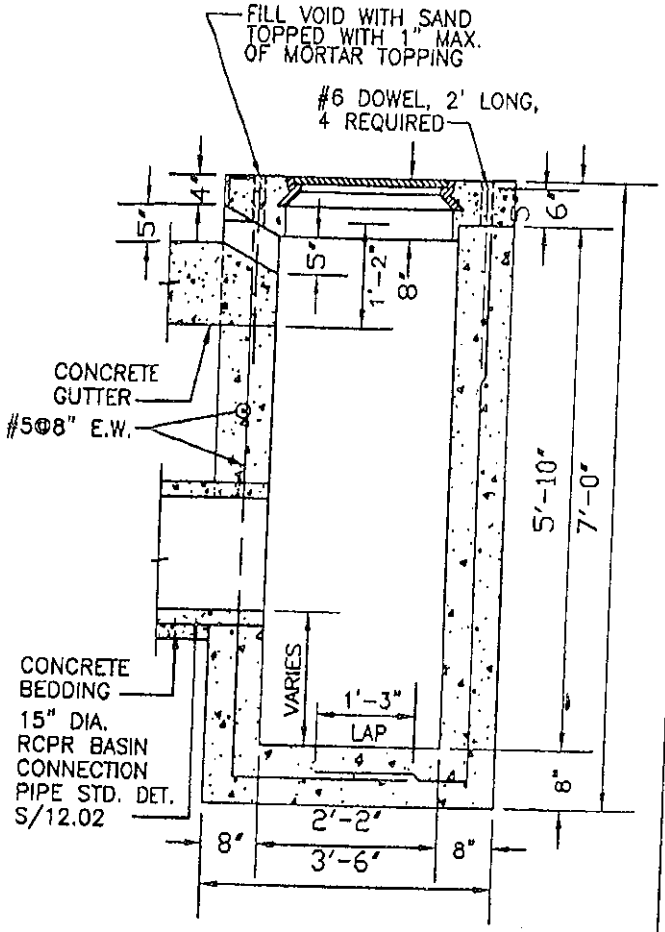
VIEW E-E

APPROVED DATE: MAY 00, 200X DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES	REVISION NO.: 0 DATE: 5/00/200X PREPARED BY: I. SMITH CHECKED BY: W. DARROW	STANDARD DETAIL SINGLE THROAT WATER QUALITY BASIN

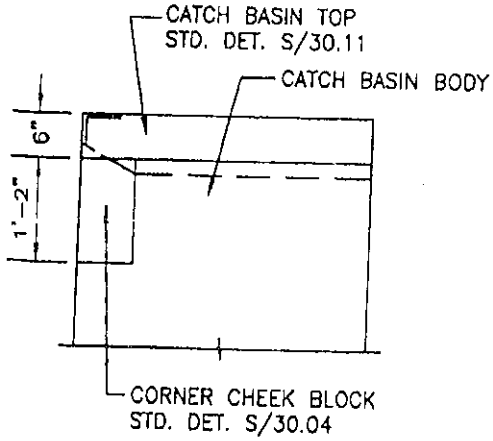
DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

S-31.02
1 OF 3





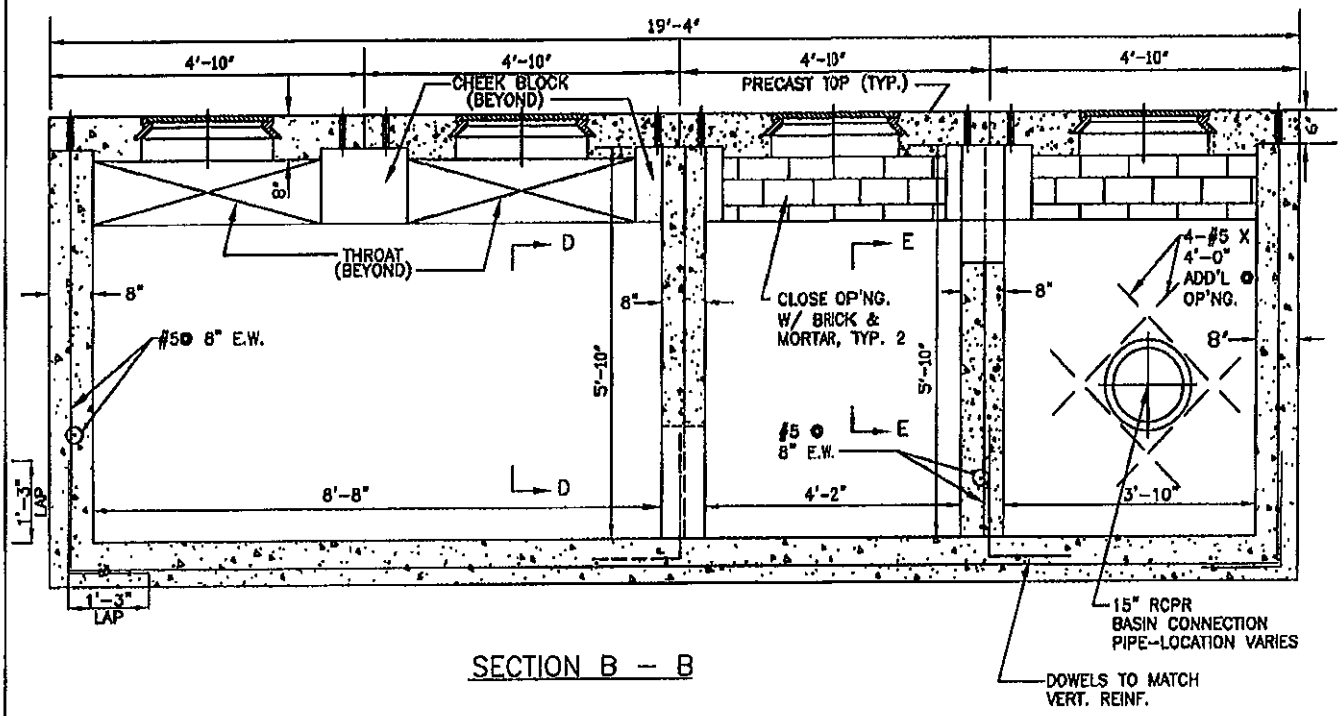
SECTION A – A



VIEW C–C

NOTES:
1. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED, TYPE II CEMENT.
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.

APPROVED DATE: _____	REVISION NO.: _____	STANDARD DETAIL
DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES	DATE: 8-16-07	DUAL THROAT
	PREPARED BY: W. DEVAUGHN	WATER QUALITY BASIN
	CHECKED BY: _____	



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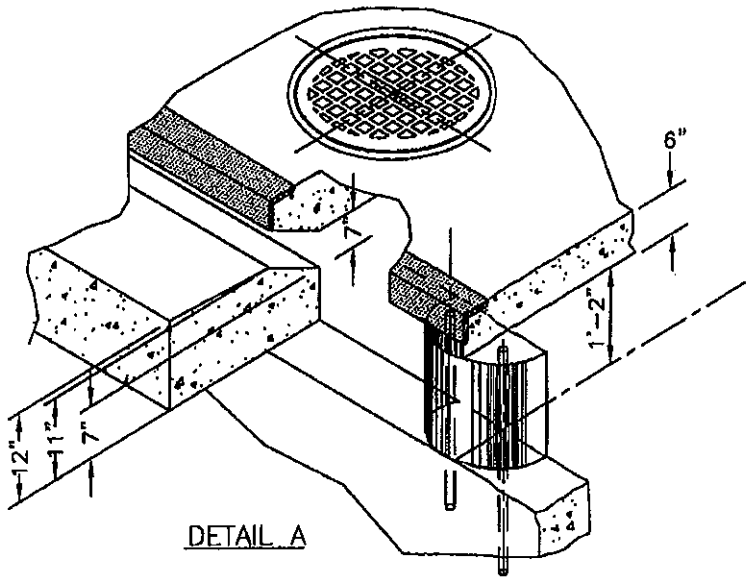
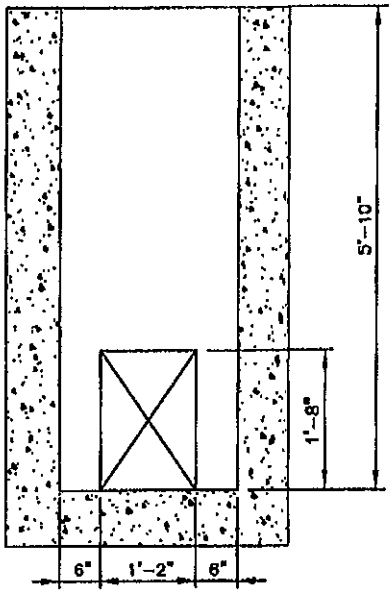


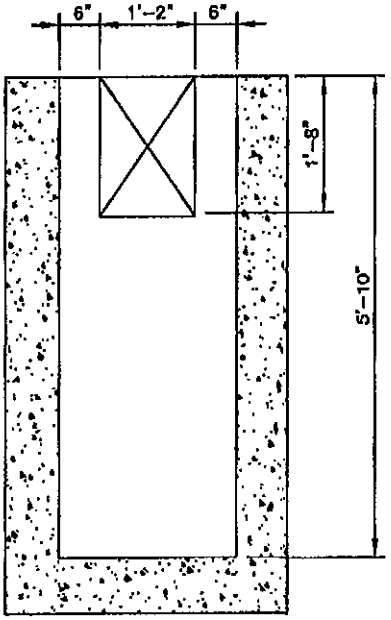
DETAIL A

APPROVED DATE: _____ DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES	REVISION NO.: _____ DATE: 8-16-07 PREPARED BY: W. DEVAUGHN CHECKED BY: _____	STANDARD DETAIL DUAL THROAT WATER QUALITY BASIN

DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY	S-31.02 3 OF 3



VIEW D-D

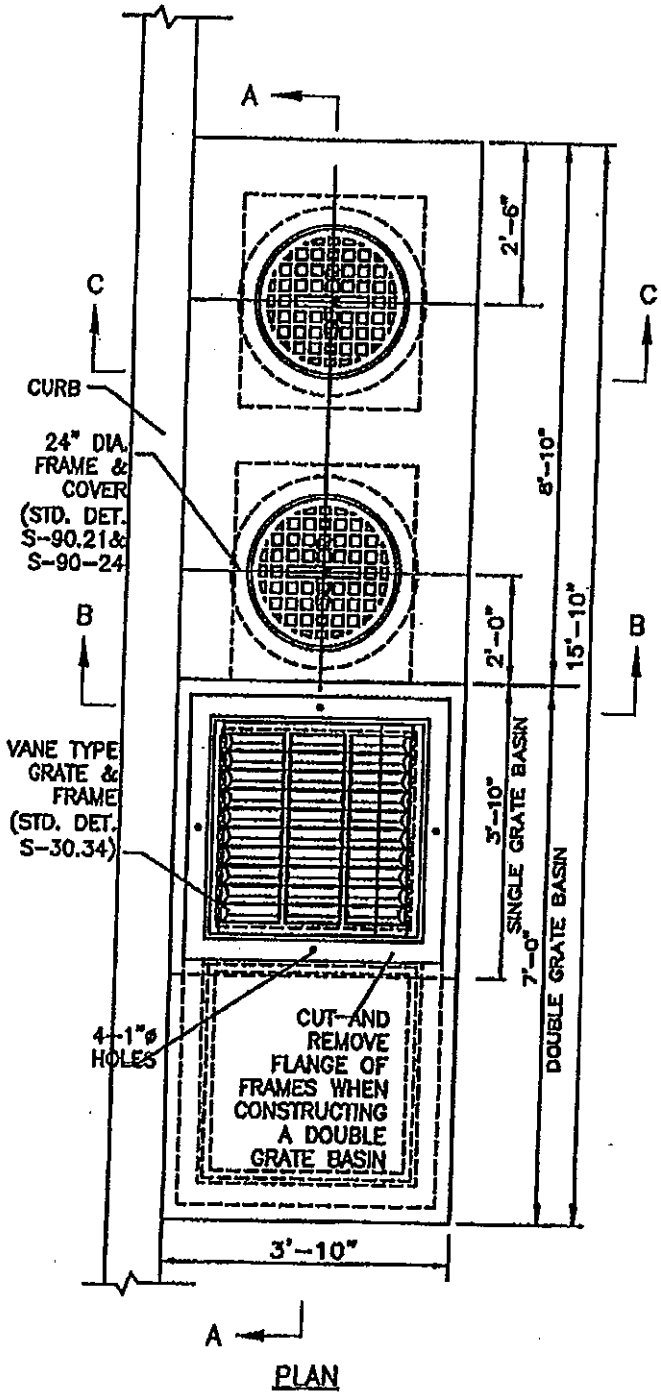


VIEW E-E

APPROVED DATE: _____ DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES	REVISION NO.: _____ DATE: 8-16-07 PREPARED BY: W. DEVAUGHN CHECKED BY: _____	STANDARD DETAIL DUAL THROAT WATER QUALITY BASIN

DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

S-31.03
1 OF 2



PLAN

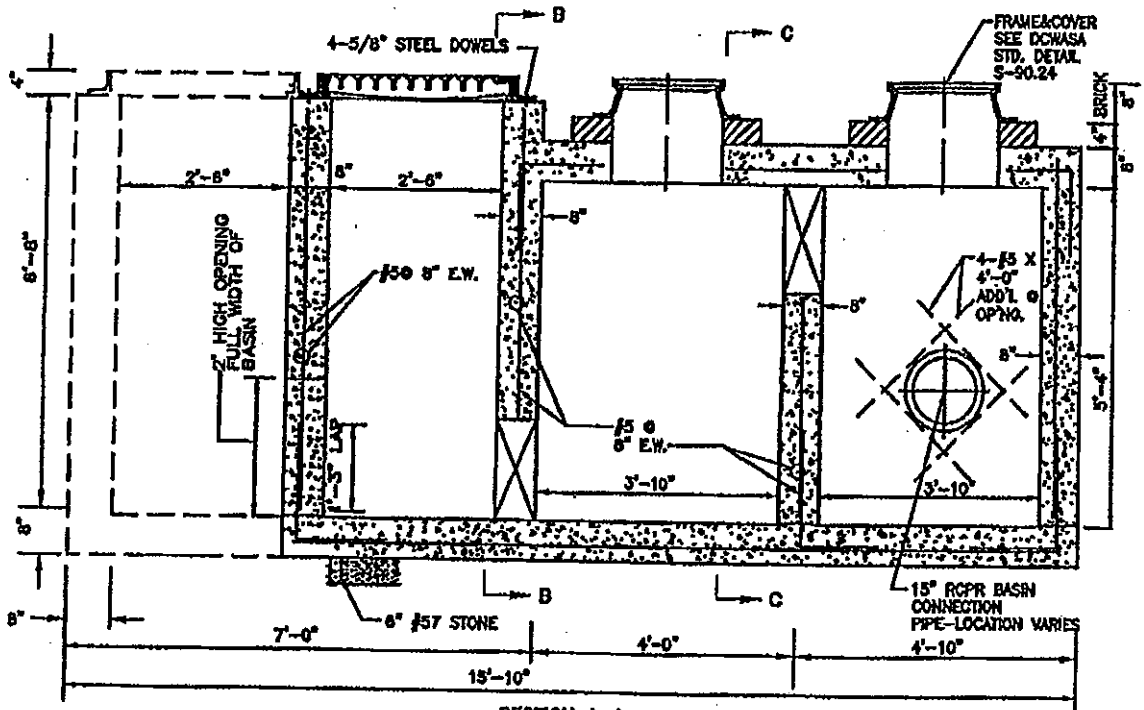
NOTES:

1. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED, TYPE II CEMENT.
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60., CENTERED IN WALL.
3. GRAY IRON CASTINGS PER ASTM A-48, CALSS 30A OR 35.
4. ALL MACHINE FINISH TO BE A.S.A SPECIFICATION, ROUGHNESS SYMBOL 250, TOLERANCE -0", +1/16".

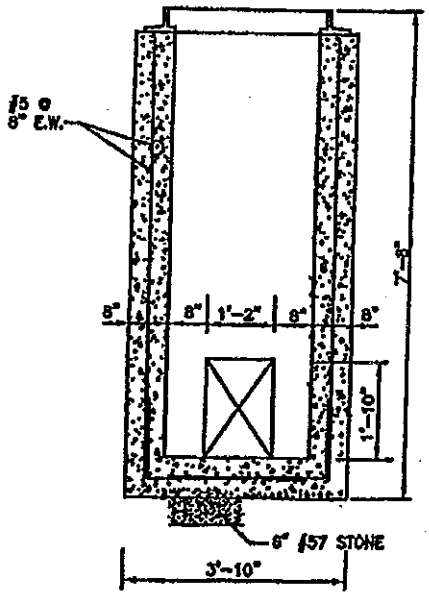
APPROVED DATE: _____ DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES	REVISION NO.: 0 DATE: 09/29/2007 PREPARED BY: S. BIAN CHECKED BY: W.DARROW	STANDARD DETAIL GRATE TYPE WATER QUALITY BASIN

DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

S-31.03
2 OF 2



SECTION A-A



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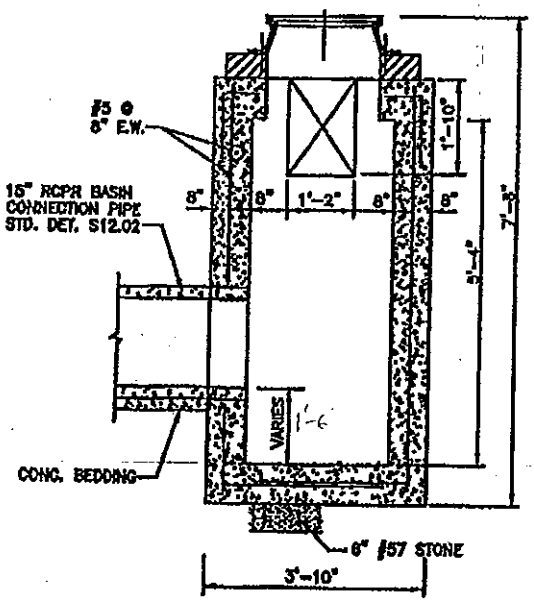

SECTION C-C

APPROVED DATE: _____ DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES	REVISION NO.: 0 DATE: 6/29/2007 PREPARED BY: S. BIAN CHECKED BY: W. DARROW	STANDARD DETAIL GRATE TYPE WATER QUALITY BASIN