

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. Contract Number	Page of Pages 1 154	
2. Amendment/Modification Number No. 10		3. Effective Date See Block 16C	4. Requisition/Purchase Request No.	5. Solicitation Caption: Reconstruction of Benning Rd from 14th Street	
6. Issued By: District Department of Transportation Office of Contracting and Procurement 2000 14th Street, NW, 6th Floor Washington, DC 20009			7. Administered By (If other than line 6) Office of Contracting and Procurement Bid Room Frank D. Reeves Municipal Center 2000 14th Street, NW, 3rd Floor Washington, DC 20009		
8. Name and Address of Contractor (No. Street, city, country, state and ZIP Code)			(X)	9A. Amendment of Solicitation No. POKA-2005-B-0031-CB	
				9B. Dated (See Item 11) 2/14/2007	
				10A. Modification of Contract/Order No.	
				10B. Dated (See Item 13)	
Code	Facility				
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS					
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended. <input checked="" type="checkbox"/> is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning <u>2</u> copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or fax which includes a reference to the solicitation and amendment number. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by letter or fax, provided each letter or telegram makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.					
12. Accounting and Appropriation Data (If Required)					
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14					
A. This change order is issued pursuant to: (Specify Authority)					
The changes set forth in Item 14 are made in the contract/order no. in item 10A.					
B. The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation date, etc.) set forth in item 14, pursuant to the authority of 27 DCMR, Chapter 36, Section 3601.2.					
C. This supplemental agreement is entered into pursuant to authority of:					
D. Other (Specify type of modification and authority)					
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input checked="" type="checkbox"/> is required to sign this document and return <u>2</u> copies to the issuing office.					
14. Description of amendment/modification (Organized by UCF Section headings, including solicitation/contract subject matter where feasible.)					
The bid opening date of August 20, 2007 is not extended					
The purpose of this amendment No. 10 is to address the following: 1. Respond to questions from prospective bidders 2. Revise the Pay Item Schedule 3. Revise the Tax Affidavit Certification 4. Update the Specifications 5. Revise Appendix D 6. Revise the General Wage Decision 7. Revise the Drawings					
Please note that the changes to the Drawings are available only from the Office of Contracting and Procurement Bid Room located at the Reeves Center, 2000 14th Street N.W., 3rd Floor, Washington, DC 20009					
Except as provided herein, all terms and conditions of the document referenced in Item (9A or 10A) remain unchanged and in full force and effect					
15A. Name and Title of Signer (Type or print)			16A. Name of Contracting Officer Jerry M. Carter		
15B. Name of Contractor (Signature of person authorized to sign)		15C. Date Signed	16B. District of Columbia		16C. Date Signed 7/27/2007

Government of the District of Columbia
Department of Transportation
Office of Contracting and Procurement
2000-14th Street, N.W. 6th Floor
Washington, D.C. 20009

AMENDMENT NUMBER 10 **ISSUED July 27, 2007 153 pages**
(exclusive of drawings)

Invitation No. POKA-2005-B-0031-CB
Federal Aid Project No.: STP-1116 (26)
Title: Reconstruction of Benning Road NE From
14th and H Street to Oklahoma Avenue

BIDDERS shall acknowledge receipt of this addendum on official Bid Form.
Failure to do so may result in rejection of your bid.

CURRENT BID OPENING DATE: **August 20, 2007**

BIDDERS are informed that the above named project is modified as follows:

QUESTIONS AND RESPONSES

Attached are responses to questions raised by prospective bidders. **(27 pages attached as part of this amendment)**

BID FORMS AND PROPOSAL

DELETE Pay Item pages 1 THRU 32 in their entirety and **REPLACE** with Pay Item pages 1R THRU 32R and Insert new page 33. **(33 pages attached as part of this amendment)**

DELETE Tax Affidavit Certification and **REPLACE** with revised Tax Certification Affidavit **(1 page attached as part of this amendment)**

SPECIFICATIONS CHANGES (23 pages attached)

REVISE Special Provision No. 2 entitled “Coordination with Others” (see page 1 of Specification Changes attached as part of this amendment)

REVISE Special Provision No. 19 entitled “Progress Photographs” (see page 1 of Specification Changes attached as part of this amendment)

REVISE Special Provision No. 32 entitled “Hot Bituminous Pavement” (see page 1 of Specification Changes attached as part of this amendment)

REVISE Special Provision No. 39 entitled “Concrete Pavement Exposed Aggregate Finish” (see page 1 of Specification Changes attached as part of this amendment)

REVISE Special Provision No. 46 entitled “Trees, Shrubs, Vines and Cover Ground” (see page 2 of Specification Changes attached as part of this amendment)

REVISE Special Provision No. 48 entitled “Maintenance of Highway Traffic” (see page 2 of Specification Changes attached as part of this amendment)

REVISE Special Provision No. 50 entitled “Traffic Signal Work” (see page 2 of Specification Changes attached as part of this amendment)

REVISE Special Provision No. 51 entitled “Furnish and Install CCTV Camera Installation” (see page 2 of Specification Changes attached as part of this amendment)

REVISE Special Provision No. 61 entitled “Furnish and Install Fountain Electrical System” (see page 3 of Specification Changes attached as part of this amendment)

DELETE Special Provision No. 20 entitled Pre Award Approval in its entirety.

DELETE Special Provision No. 38 entitled Replace PCC Sidewalk, 4 Inch in its entirety.

INSERT NEW Special Provision entitled “Geotextile Fabric” (see page 3 of Specification Changes attached as part of this amendment)

INSERT NEW Special Provision entitled “Partnering” (see page 3 of Specification Changes attached as part of this amendment)

DELETE the Special Provision entitled “Furnish and Set Block Paver on Concrete Base” and **REPLACE** with the new Special Provision entitled “Furnish and Set Block Paver on Concrete Base” (see page 4 of Specification Changes attached as part of this amendment)

DELETE the Special Provision entitled “Furnish and Set Block Paver on Granular Base” and **REPLACE** with the new Special Provision entitled “Furnish and Set Block Paver on Granular Base” (see page 7 of Specification Changes attached as part of this amendment)

DELETE the Special Provision entitled “Granite Paving” and **REPLACE** with the new Special Provision entitled “Granite Stone Pavers on Concrete Base” (see page 9 of Specification Changes attached as part of this amendment)

DELETE the Special Provision entitled “Tree Protection” and **REPLACE** with the new Special Provision entitled “Tree Protection” (see page 12 of Specification Changes attached as part of this amendment)

DELETE the Special Provision entitled “Site Furnishing” and **REPLACE** with the new Special Provision entitled “Site Furnishing” (see page 13 of Specification Changes attached as part of this amendment)

DELETE the Special Provision entitled “Prestressed Concrete Units” and **REPLACE** with the new Special Provision entitled “Precast Concrete Panels” (see page 16 of Specification Changes attached as part of this amendment)

DELETE the Special Provision entitled “Stone Masonry” and **REPLACE** with the new Special Provision entitled “Stone Masonry” (see page 23 of Specification Changes attached as part of this amendment)

APPENDICES

DELETE Appendix D entitled Streetcar Special Provisions in its entirety and **REPLACE** with Appendix D Revised (**49 pages attached as part of this amendment**).

DELETE General Wage Decision DC030001 Modification Number 48 dated 1/5/2007 and **REPLACE** with General Wage Decision DC070001 Modification Number 8 dated 7/06/2007 (**12 pages attached as part of this amendment**)

DRAWINGS

Various changes, revisions and replacements to the drawings have been made as indicated below. These changes are included as a separate attachment to this amendment.

The following drawings are revised:

<u>SHEET No.</u>	<u>DESCRIPTION</u>
2	INDEX OF SHEETS-1
3	INDEX OF SHEETS-2
26	PROPOSED TYPICAL SECTIONS-1
27	PROPOSED TYPICAL SECTIONS-2
29	PROPOSED TYPICAL SECTIONS-4
30	PROPOSED TYPICAL SECTIONS-5
31.	PROPOSED TYPICAL SECTIONS-6
32.	PROPOSED TYPICAL SECTIONS-7
34	PAVING & GRADING PLAN STA 89+50 TO STA 93+00
36	PAVING & GRADING PLAN STA 93+00 TO STA 98+00
38	PAVING & GRADING PLAN STA. 98+00 TO STA. 104+25
39	PAVING & GRADING PLAN STA. 104+25 TO STA. 110+00
40	PAVING & GRADING PLAN STA. 110+00 TO STA. 116+00
41	PAVING & GRADING PLAN STA. 116+00 TO STA. 122+25
42	PAVING & GRADING PLAN STA. 122+25 TO STA. 128+00
43	PAVING & GRADING PLAN STA. 128+00 TO STA. 133+50
44	PAVING & GRADING PLAN STA. 133+50 TO STA. 139+00
45	PAVING & GRADING PLAN STA. 139+00 TO STA. 142+95.09
46	INTERSECTION DETAILS-1
47	INTERSECTION DETAILS-2
53	PROFILE GRADE LINE STA. 89+50 TO STA. 98+00

- 66 CURB PROFILE LEFT STA 89+88.83 TO STA 98+00
- 67 CURB PROFILE RIGHT STA 89+88.88 TO STA 98+00
- 94 SERVICE CONNECTIONS
- 95 WATERMAIN PLAN-1
- 96 WATERMAIN PLAN-2
- 98 WATERMAIN PLAN-4
- 99 WATERMAIN PROFILES-1
- 100 WATERMAIN PROFILES-2
- 101 WATERMAIN PROFILES-3
- 102 WATERMAIN PROFILES-4
- 103 WATERMAIN PLAN AND PROFILE-1
- 104 WATERMAIN PLAN AND PROFILE-2
- 105 WATERMAIN PLAN AND PROFILE-3
- 106 WATERMAIN PLAN AND PROFILE-4
- 108 STORM DRAINAGE PROFILE-1 STARBURST INTERSECTION
- 109 STORM DRAINAGE PROFILE-2 STRARBURST INTERSECTION
- 110 STORM DRAINAGE PROFILE-3 BENNING ROAD
- 112 STORM DRAINAGE PROFILE-5 BENNING ROAD
- 113 SIGNING & PAVEMENT MARKING PLAN STA 89+50 TO 93+00
- 115 SIGNING & PAVEMENT MARKING PLAN STA 90+00 TO STA 98+00
- 117 SIGNING & PAVEMENT MARKING PLAN STA. 98+00 TO STA. 104+25
- 292 STARBURST PLAZA INTERSECTION LAYOUT AND MATERIAL PLAN
- 293 STARBURST PLAZA INTERSECTION LANDSCAPE PLAN
- 294 STARBURST PLAZA MATERIAL PLAN
- 295 STARBURST PLAZA LAYOUT PLAN
- 297 STARBURST PLAZA LAYOUT ENLARGEMENT PLAN
- 298 STARBURST PLAZA LANDSCAPE PLAN
- 299 STARBURST PLAZA FOUNTAIN SECTION
- 300 STARBURST PLAZA SITE SECTIONS
- 301 STARBURST PLAZA SITE SECTIONS
- 302 STARBURST PLAZA SITE DETAILS
- 303 STARBURST PLAZA SITE DETAILS
- 304 STARBURST PLAZA SITE DETAILS
- 305 STARBURST PLAZA SITE DETAILS
- 306 STARBURST PLAZA SITE DETAILS
- 330 LANDSCAPE NOTES
- 331 TREE PRESERVATION STA. 98+00 TO STA. 104+25
- 332 TREE PRESERVATION STA. 104+25 TO STA. 110+00
- 333 TREE PRESERVATION STA. 110+00 TO STA. 118+00
- 334 TREE PRESERVATION STA. 118+00 TO STA. 122+25
- 335 TREE PRESERVATION STA. 122.25 TO STA. 128+00
- 336 TREE PRESERVATION STA. 128+00 TO STA. 133+50
- 337 TREE PRESERVATION STA. 133+50 TO STA. 139+00
- 338 TREE PRESERVATION STA. 139+00 TO STA. 142+95.09
- 339 PLANTING & MATERIAL LAYOUT STA. 98+00 TO STA. 104+25
- 340 PLANTING & MATERIAL LAYOUT STA. 104+25 TO STA. 110+00

341 PLANTING & MATERIAL LAYOUT STA. 110+00 TO STA. 116+00
 342 PLANTING & MATERIAL LAYOUT STA. 116+00 TO STA. 122+25
 343 PLANTING & MATERIAL LAYOUT STA. 122+25 TO STA. 128+00
 344 PLANTING & MATERIAL LAYOUT STA. 128+00 TO STA. 133+50
 345 PLANTING & MATERIAL LAYOUT STA. 133+50 TO STA. 139+00
 346 PLANTING & MATERIAL LAYOUT STA. 139+00 TO STA. 142+95.09
 348 SITE DETAILS
 349 SITE DETAILS
 350 SITE DETAILS
 351 SITE DETAILS
 352 SITE DETAILS
 354 SPECIAL MANHOLE DETAILS
 356 STANDARD PAVING DETAILS
 358 CROSS SECTIONS STA. 89+88.58 TO STA. 95+00 H STREET & BENNING ROAD
 359 CROSS SECTIONS STA. 95+50.00 TO STA 98+00 H STREET & BENNING ROAD
 423 STREET LIGHTING LEGEND AND GENERAL NOTES
 428 STREET LIGHTING ELECTRICAL DETAILS V
 436 STREET LIGHTING DEMOLITION PLAN VII
 497 17TH STREET AND BENNING ROAD, N.E. TRAFFIC SIGNAL MODIFICATION –
 FINAL CCTV
 531 FROM 16TH STREET TO OKLAHOMA AVENUE EXISTING COMMUNICATION PLAN
 532 FROM 16TH STREET TO OKLAHOMA AVENUE EXISTING COMMUNICATION PLAN
 533 FROM 16TH STREET TO OKLAHOMA AVENUE EXISTING COMMUNICATION PLAN
 534 FROM 16TH STREET TO OKLAHOMA AVENUE EXISTING COMMUNICATION PLAN
 535 FROM 16TH STREET TO OKLAHOMA AVENUE EXISTING COMMUNICATION PLAN
 536 FROM 16TH STREET TO OKLAHOMA AVENUE EXISTING COMMUNICATION PLAN

The following sheets are replaced:

5 SUMMARY OF QUANTITIES-1
 6 SUMMARY OF QUANTITIES-2
 33 STREETCAR PLATFORM DETAILS
 82 UTILITY & DRAINAGE PLAN STA 89+50 TO STA 93+00
 83 UTILITY & DRAINAGE PLAN MARYLAND AVE. (SOUTH) & 15TH ST.
 84 UTILITY & DRAINAGE PLAN STA 93+00 TO STA 98+00
 85 UTILITY & DRAINAGE PLAN BLADENSBURG RD, MORSE STREET &
 MARYLAND AVE (NORTH)
 86 UTILITY & DRAINAGE PLAN STA. 98+00 TO STA. 104+25
 87 UTILITY & DRAINAGE PLAN STA. 104+25 TO STA. 110+00
 88 UTILITY & DRAINAGE PLAN STA. 110+00 TO STA. 116+00
 89 UTILITY & DRAINAGE PLAN STA. 116+00 TO STA. 122+25
 90 UTILITY & DRAINAGE PLAN STA. 122+25 TO STA. 128+00
 91 UTILITY & DRAINAGE PLAN STA. 128+00 TO STA. 133+50
 92 UTILITY & DRAINAGE PLAN STA. 133+50 TO STA. 139+00
 93 UTILITY & DRAINAGE PLAN STA. 139+00 TO STA. 142+95.09
 97 WATERMAIN PLAN-3

107 THRUST BLOCK DETAILS AND SCHEDULE
 405 LIGHTING QUANTITY, NOTES AND STANDARD SYMBOLS
 406 LIGHTING PLAN
 407 LIGHTING PLAN
 408 LIGHTING PLAN
 409 LIGHTING PLAN
 410 LIGHTING PLAN
 413 LIGHTING DETAILS - 3
 437 STREET LIGHTING NEW WORK PLAN I
 438 STREET LIGHTING NEW WORK PLAN II
 439 STREET LIGHTING NEW WORK PLAN III
 440 STREET LIGHTING NEW WORK PLAN IV
 441 STREET LIGHTING NEW WORK PLAN V
 442 STREET LIGHTING NEW WORK PLAN VI
 443 STREET LIGHTING NEW WORK PLAN VII
 444 STREET LIGHTING NEW WORK PLAN VIII
 459 STARBURST SEQUENCE OF OPERATION DWG. NO. TS-11-M
 460 STARBURST SEQUENCE OF OPERATION DWG. NO. TS-11-N
 461 STARBURST SEQUENCE OF OPERATION DWG. NO. TS-11-N
 462 STARBURST SEQUENCE OF OPERATION DWG. NO. TS-11-P
 463 STARBURST SEQUENCE OF OPERATION DWG. NO. TS-11-Q
 464 STARBURST SEQUENCE OF OPERATION DWG. NO. TS-11-R
 465 STARBURST SEQUENCE OF OPERATION DWG.NO.TS-11-S
 467 STARBURST UTILITY PLAN
 469 MORSE ST. –SEQUENCE OF OPERATION DWG.NO. TS-1414-A
 470 MORSE ST. –SEQUENCE OF OPERATION DWG.NO. TS-1414-B
 471 MORSE ST. –SEQUENCE OF OPERATION DWG.NO. TS-1414-C
 472 MORSE ST. –SEQUENCE OF OPERATION DWG.NO. TS-1414-C
 473 MORSE ST. –SEQUENCE OF OPERATION DWG.NO. TS-1414-D
 474 MORSE ST. –SEQUENCE OF OPERATION DWG.NO. TS-1414-E
 475 MORSE ST. –SEQUENCE OF OPERATION DWG.NO. TS-1414-F
 476 MORSE ST. –SEQUENCE OF OPERATION DWG.NO. TS-1414-G
 477 MORSE ST. –SEQUENCE OF OPERATION DWG.NO. TS-1414-H
 478 MORSE ST. -UTILITY PLAN
 479 H STREET & FLORIDA AVE., N.E., TRAFFIC SIGNAL INSTALLATION
 480 H STREET & FLORIDA AVE. N.E., UTILITY PLAN
 482 PROPOSED COMMUNICATION CABLE AND CONDUIT DETAILS

The following new sheets are added:

537 TRACK DRAINAGE AND TRACK ALIGNMENT PLAN, STA. 89+50 TO STA. 93+00
 538 TRACK DRAINAGE AND TRACK ALIGNMENT PLAN, STA. 93+00 TO STA. 98+00
 539 TRACK DRAINAGE AND TRACK ALIGNMENT PLAN, STA. 98+00 TO STA. 104+25
 540 TRACK DRAINAGE AND TRACK ALIGNMENT PLAN, STA. 104+25 TO STA. 110+00
 541 TRACK DRAINAGE AND TRACK ALIGNMENT PLAN, STA. 110+00 TO STA. 116+00
 542 TRACK DRAINAGE AND TRACK ALIGNMENT PLAN, STA. 116+00 TO STA. 122+25

- 543 TRACK DRAINAGE AND TRACK ALIGNMENT PLAN, STA. 122+25 TO STA. 128+00
- 544 TRACK DRAINAGE AND TRACK ALIGNMENT PLAN, STA. 128+00 TO STA. 133+50
- 545 TRACK DRAINAGE AND TRACK ALIGNMENT PLAN, STA. 133+50 TO STA. 139+00
- 546 TRACK DRAINAGE AND TRACK ALIGNMENT PLAN, STA. 139+00 TO STA. 142+95.09
- 547 TRACK DRAIN CONNECTIONS STORM DRAINAGE PROFILE -1-STARBURST INT.
- 548 TRACK DRAIN CONNECTIONS STORM DRAINAGE PROFILE -2-STARBURST INT.
- 549 TRACK DRAIN CONNECTIONS STORM DRAINAGE PROFILE -3-BENNING ROAD
- 550 TRACK DRAIN CONNECTIONS STORM DRAINAGE PROFILE -4-BENNING ROAD
- 551 TRACK DRAIN CONNECTIONS STORM DRAINAGE PROFILE -5-BENNING ROAD
- 552 TRACK DRAIN WORK SCHEDULE
- 553 TRACK SLAB & TRACK DRAIN DETAILS
- 554 OCS POLE FOUNDATION DETAILS
- 555 TRACTION ELECTRICAL BENNING ROAD STA. 104+25 TO STA. 110+00
- 556 TRACTION ELECTRICAL BENNING ROAD STA. 127+75 TO STA 133+50
- 557 TRACTION ELECTRICAL CONDUIT INSTALLATION DETAILS
- 558 TRACTION ELECTRICAL TE MANHOLE CONSTRUCTION DETAILS
- 559 TRACTION ELECTRICAL TE MANHOLE INSTALLATION DETAILS
- 560 TRACTION ELECTRICAL NEGATIVE CONNECTION TO RAIL
- 561 FOUNDATION CAP DETAILS
- 562 OVERHEAD CONTACT SYSTEM POLE FOUNDATION SCHEDULE, SHEET 1 OF 3
- 563 OVERHEAD CONTACT SYSTEM POLE FOUNDATION SCHEDULE, SHEET 2 OF 3
- 564 OVERHEAD CONTACT SYSTEM POLE FOUNDATION SCHEDULE, SHEET 3 OF 3

POKA-2005-B-0031-CB
Reconstruction of Benning Road, NE
From 14th & H Street to Oklahoma Avenue

QUESTIONS & RESPONSES

Question # 1

Sheet 6 has 67 galv steel t-bases (item #618421). Sheet 405 has 15 galv steel t-bases (item #618420). Sheet 423 says aluminum t-bases in the pole schedule. Sheet 428 shows a galv steel t-base. What is the correct quantity? Are the bases galv. Steel or aluminum?

Response # 1

The correct quantity is 84. The item No. is 618 436. Transformer base shall be galvanized steel. See revised sheet 6.

Question # 2

Sheet 6 has 5, #12 Cast iron poles (item #618485). What is this pole?

Response # 2

12 cast iron pole is an error. It should be #16 cast iron pole and the item No. is 618 486 as given in the Schedule of Items (Bid Forms and Proposal)

Question # 3

Sheet 6 has 115, #16 cast iron poles. Sheet 405 has 104 #16 cast iron poles. What is the correct quantity?

Response # 3

The correct quantity is 115 and Item No. is 618 486 as given in the Schedule of Items (Bid Forms and Proposal. Sheet 6 is replaced.

Question # 4

Sheet 6 has 19, #18 cast iron poles. Sheet 405 has 9 #18 cast iron poles. What is the correct quantity?

Response # 4

The correct quantity is 19. See Schedule of Items (Bid Forms and Proposal). Sheet 6 is revised.

Question # 5

Sheet 6 has 85, 28'-6" aluminum pendant pole with base (item #618543). Does this pole not have an arm? Please provide detail.

Response # 5

The correct quantity is 84. See Schedule of Items (Bid Forms and Proposal). Sheet 6 is replaced. See Amendment # 6. All poles have to be provided with arms. Detail is provided in Sheet No. 428.

Question # 6

Sheet 6 has 15, 28'-6" aluminum pendant pole with up to 8' arm (item #6186554). Is the arm a standard DDOT lighting arm, or the decorative lighting arm?

Response # 6

For the item number and quantity of 28'-6" pendant pole with up to 8' arm, see Schedule of Items (Bid Forms and Proposal). Streetlighting bracket arms are decorative (curved). Mast arms for traffic signals are straight.

Question # 7

Sheets 6, 405, 423, and 428 all mention aluminum octaflute poles. However, the specification on page 77 says steel. Which is it, aluminum or steel?

Response # 7

All octaflute poles should be steel.

Question # 8

Sheet 428 shows a decorative wrap on the 30' aluminum octaflute pole. Is that wrap to be included with the pole?

Response # 8

Shall be as per Manufacturer's specifications.

Question # 9

Do you want internal vibration dampers included on all octaflute lighting poles?

Response # 9

According to 2005 Standard specifications, dampers are required for poles on bridge structures only.

Question # 10

Sheet 6 has 123 conversion kits, but only 16 #118 plastic globes. Why the discrepancy?

Response # 10

Sheet 6 is replaced. See item 618 802 and 618 860 in Schedule of Items (Bid Forms and Proposal)

Question # 11

Sheet 6 has LED signal modules listed separately. Then it has conventional traffic signal heads on another item. Do the conventional signal heads have traditional glass lenses, or are they empty for the LED modules to fit in?

Response # 11

The specifications do not exclude the lenses or reflectors.

Question # 12

Page 79 of the specifications talks about a 45' camera pole. Are there any details or specs on the type of pole?

Response # 12

References to 45 ft. pole is an error. See revision to SP.

Question # 13

Our company is preparing a bid for Item 0460 as outlined in WASA Section 2800 - Sewer Lining. Part 1. 1.1 B lists Section 02734 as related work, we could not find that section listed, can you advise us where we can find it?

Response # 13

Section 02734 is Cleaning and TV Inspection of Building Sewers.

Question # 14

Line 1360 on the Schedule of Pay Items calls for 116 LF of Steel Edging however none is found on plans. Please clarify where steel edging is to be installed.

Response # 14

Steel edging is not used in project. Steel edging is removed form the Pay Item Schedule. See revised Pay Items.

Question # 15

Sheet 325 and 326 call for irrigation of landscaped areas in the "Starburst Plaza" however no other landscaped area is shown to have irrigation. Please clarify if the intent is to irrigate **only** the planting areas in the Starburst Plaza.

Response #15

Yes the intent is to only irrigate the planting in Starburst Plaza.

Question # 16

Page 5 – item 0330 Public Relations, can DDOT provided specs and dollar amount for this item?

Response # 16

This item is deleted. See revised Pay Items.

Question # 17

Page 12 – item 1020 & 1030, I think we need only one of these items.

Response # 17

Yes. See revised Pay Items.

Question # 18

Page 14 – item 1200 Planter Wall, can the unit of measurement change to SF?

Response # 18

No

Question # 19

Page 14 – item 1240 Granite Paving, can the unit of measurement change to SF?

Response # 19

No

Question # 20

Page 15-item 1360 Please provide specs for Steel Edging?

Response # 20

Item deleted. See revised Pay Items.

Question # 21

Page 21-item 1800 the word Daily Rate should be removed?

Response #21

Item deleted. See revised Pay Items.

Question # 22

Page 32 – item 2810 Retaining Wall, Can the unit of measurement change to SF?

Response # 22

No

Question # 23

Section 51 (Spec. Book, Page 79) F&I CCTV Camera Installation Section A states the new assembly shall be connected to a traffic controller located at 22nd St. and East Capitol St. This location is no where near Benning Road. Is this an error? The same section indicates mounting this unit on a 45' pole while Drawing S-965-G (sheet 465 of 536) shows the unit mounted to 28'6" light pole. Which is correct? Same concern on Sheet 497.

Response # 23

Reference to 22nd and East Capitol Street is an error. The reference should be to H Street/Benning Road at Bladensburg Road, NE. Reference to 45' pole is an error. It should be 28'-6" pole. See revised SP.

Question # 24

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Questions and Responses

Reconstruction of Benning Road, N.E.

From 14th & H Street to Oklahoma Avenue

There does not appear to be any specs for the proposed Video Detectors.

Response # 24

Video Detectors are not required. See revised SP.

Question # 25

There don't appear to be any Specs for the proposed Video Detectors.

Response # 25

See response to Question # 24.

Question # 26

Sheet 497 indicates the use of #22AWG twisted pair for the CCTV while sheet 465 indicates #19AWG twisted pair. Is this correct? Which should be used?

Response # 26

22 AWG is the right size to be used.

Question # 27

There are no specs for the aluminum poles or "break-away" pole bases.

Response # 27

Poles and transformer bases are to be of steel.

Question # 28

Line 2000 (Bid Items) - 617-028 "F&I Handbox" - There are no specs or drawing details for this item. Please provide details and locations for their intended use.

Response # 28

DDOT Standard Drawing 617.21 shall be followed. Locations are shown in the plans

Question # 29

Details on Sheets E02 and E03 conflict as to the placement requirements of the service entrance equipment feeding the fountain. Please address this conflict.

Response # 29

We have reviewed the plans and cannot see the conflict you are referring to.

Question # 30

Sheet E-02 - The 200 Amp Disconnect for the service entrance equipment is noted as "fused". What type of fuses and what size are requested?

Response # 30

The recommended fuse is a 600 volts, class RK5.

Question # 31

Drawing E-01- Legend indicates a heavy-duty cover on the Quazite boxes. Does the cover need to have a gasket? If not, does the owner want a two bolt cover or a four bolt cover? (Gasketed covers are four bolt only.) What color does the owner require?

Response # 31

Use the 4-bolt boxes. Color will be approved from samples.

Question # 32

Page 109 of the spec book Heading B, Section 7 indicates a "Junction Box Schedule". Is there such a schedule and, if so, where is it to be found?

Response # 32

Page 109 of the Special Provisions is the boiler plate for the F&I Fountain Electrical System. The reference to "Junction Box Schedule" is deleted.

Question # 33

There are no specs in regard to the 12' poles to be installed at Starburst Plaza. Should these items be a separate bid item or should they be included in the fountain lighting bid item?

Response # 33

These poles are #14 Poles and are included in item 618 470.

Question # 34

Drawing E-02, Note #4 indicates inside disconnect to be NEMA 1. Everything else in the vault appears to be 3R at least. Is this an oversight?

Response # 34

All disconnects shall be 3R minimum.

Question # 35

Line 2670- "F&I Ground Rod"- 75 each- What size and where are they installed?

Response # 35

Standard size (3/4 inch by 10 LF) copper clad and they are to be used at handboxes, and two at the service entrance to the electrical vault at the plaza.

Question # 36

Observations

The Duct bank details #5 and #7 on Page SL-7 are not a feasible installation configuration. The conduits need to be kept in a level attitude.

Response # 36

No. The conduits need not be kept in a level attitude. Transition from a vertical orientation to a horizontal orientation should not be a problem.

Question # 37

A more thorough delineation of the components of Bid Items on lines 1050 and 1070 would be very helpful, since as written there are "gray" areas concerning what should go where.

Response # 37

The items on line 1050 and 1070 are described in detail at S.P. No. 60 (Furnish and Install Plumbing System) and S.P. No. 61 (Furnish and Install Fountain Electrical System)

Question # 38

SP- 41 Pay Item 609 993 – Granite paving, pay item 609 993. but item 609 993 SP does not define work. Could DDOT please define this work to be done under this pay item?

Response # 38

This item is revised to 600 013 Stone Paving on Concrete Base. See details on Sheet No. 297.

Question # 39

SP -41 SP requires shop drawings for pavers which will make this item costly. Could shop drawings be excluded from the paver requirements? Shouldn't the paving pay item be paid as an area (SF or SY) rather than LF?

Response # 39

Shop Drawings are required. The item is changed to be measured in SF. See revised Pay Items.

Question # 40

PLAN – Sheet 352 – Bike Rack shown on plan sheet is not the one specified in the SP's. Could DDOT specify which is correct and provide specs if plans govern?

Response # 40

See revised pay items and specifications.

Question # 41

PLANS Sheets 349-350 - Site drawings show 4" x 4" x 4" cobblestones set "on end". This provides loose stones and should not be done without causing other problems. Will DDOT reconsider their design on this feature?

Response # 41

Details in the plan and specifications shall be followed.

Question # 42

Sheets 349-350 - Site drawings show "curb" around planters being jumbo pavers set on end. (see problems raised by question # 60). Could DDOT provide a payitem for this work?

Response # 42

Pay Item 60014 covers this work.

Question # 43

PLANS Sheet 306 –“Precast Concrete Furnishing”. Does this refer to concrete furniture?

Response # 43

See Special Provisions 45 D(2)d Pedestal Game Tables. Pay Item 600 006.

Question # 44

PLANS -Sheet 305 - "Special Basin Top" requires further thought. Patterns are not available. Can these tops be specified simply as "simulated granite" which is a standard product?

Response # 44

No. Top of basin requires custom stamping.

Question # 45

PLANS - Sheet 305 – “Fountain piers require more detail. Are these piers concrete filled?

Response # 45

See details on sheet 300 for additional information.

Question # 46

ITEM 600 013 - Granite cladding. On which features will this cladding be placed?

Response # 46

See Sheet No. 299 for location of granite cladding. See revised items and drawings.

Question # 47

PLAN - Sheet 304-4 - See section called "Existing Planter Wall".

- a) Is this some of the "cladding" from question # 64?
- b) Is this wall existing or must it be constructed?

Response # 47

a) No. b) The tree is existing and the wall must be constructed.

Question # 48

PLAN Sheet 304 - Section entitled "Planter Curb" - method of curb installation is incorrect and cannot be constructed in this manner. Curb section is incorrectly drawn.

- a) Can this section be revised and a pay item created for this work?
- b) What type of granite is specified for this work?

Response # 48

- a) *Use Pay Item 609 068. See revised drawing.*
- b) *Reclaimed granite or to match roadway granite curb.*

Question # 49

PLAN -Sheet 304 - "Granite Banding" (Section 8) is 12" x 8" curb.

- a) Can a pay item created for this work?
- b) What type of granite is specified for this work?

Response # 49

- a) *This should be treated part of Pay Item 609 090.*
- b) *Reclaimed granite or to match roadway granite curb.*

Question # 50

PLAN Sheet 304 - "Granite Step" (Section 9).

- a) Can a pay item created for this work?
- b) What type of granite is specified for this work?

Response # 50

- a) *This should be treated part of Pay Item 609 090.*
- b) *Reclaimed granite or to match roadway granite curb.*

Question # 51

PLAN Sheet 304 - "Mountable Curb" (Section 10) has no pay item.

- a) Can a pay item created for this work?
- b) What type of granite is specified for this work?

Response # 51

- a) *Use Pay Item 609 068.*
- b) *Reclaimed granite or to match roadway granite curb.*

Question # 52

PLAN Sheet 304 – “Existing tree planter” (Section 4) has no pay item.

- a) Can a pay item created for this work?
- b) Shouldn't there be an expansion joint between pavers and vertical planter face?

Response # 52

- a) *Two Pay Items exist for this detail. Pay Item 600 013 for precast concrete and Pay Item 700 005 for concrete.*
- b) *See Revised details.*

Question # 53

PLAN Sheet 303 - Expansion Joint (Section 6) contains "galvanized" dowels. Shouldn't standard joint assemblies be used?

Response # 53

Dowels do not need to be galvanized. See Revised Detail.

Question # 54

PLAN Pay Item 700 006 - Steel Plate for Mural.

- a) Are these the imbedded plates with lugs which must be cast into the concrete wall stem to weld mural angle flanges to? B)
- b) Are angles included in this item or with artist panels(by others)?

Response # 54

- a) *Yes*
- b) *Item covers all angle brackets. See detail 8 on Page 300.*

Question # 55

PLAN Sheet 423 - Note on Pole designated as "PP" states a "Cast Aluminum Transformer Base". Can DDOT furnish specifications and details for this product?

Response # 55

Transformer Base shall be galvanized steel.

Question # 56

PLAN Sheet 628 - Detail is shown for a 30' aluminum pole while specs on page 77 state the pole will be "steel". Could DDOT please clarify which is correct, steel or aluminum?

Response # 56

All poles are of steel.

Question # 57

Pay Item Schedule - 616-082 - Pay item is construction zone TMA (daily rate) while bid item is by hour. Can this be clarified?

Response # 57

Item 616-082 is deleted.

Question # 58

Pay Items 1020-1030 - Temporary Tree Protection, 111 each. Are these two items identical or is one permanent?

Response # 58

One of the items is deleted.

Question # 59

Pay Item 700 005 - Seatwalls - Retaining Walls.

- a) Could these items be made into lump sum items for clarity? B)
- b) Is granite work part of "cladding" item or part of the wall items?

Response # 59

- a) *No*
- b) *Granite is covered in 600 013.*

Question # 60

Pay Item 700 004 - Staircase, each

- a) Does this item include the precast concrete cladding?
- b) Are the railings for the stairs part of 709 006 or part of the stair item?

Response # 60

- a) *No, precast concrete cladding is covered in 600 013.*
- b) *Railings for staircase are covered in 709 006.*

Question # 61

Pay Item 616 115 - Portable Variable Message Sign, 1600 hours. Can SP be created to explain when this item would be used?

Response # 61

This item covers temporary requirement of the Portable Variable Message Sign at different periods, as ordered by the Chief Engineer.

Question # 62

Pat Item 600 006 - Plaza Boulders - Plan calls for granite boulders - granite is a quarried material and therefore a round boulder would have to be "sculpted". Could DDOT provide a clear specification with type of material, size, shape, etc.?

Response # 62

See Revised SP.

Question # 63

Landscaping - Starburst Plaza drawings show 85% compacted planting soil under pavements. Can this be correct?

Response # 63

See Details on Sheet 303 for locations of compacted planting soil.

Question # 64

T-Bases, Sheet 423 of the pole component schedule calls for cast aluminum T-Bases. Sheet 6, 'Summary of Quantities' items 617-024 & 618-421 requests galvanized steel hinged T-Base. Which style is to be used for this project, Steel or Aluminum?

Response # 64

Galvanized Steel Transformer Bases are required. Sheet 6 is replaced.

Question # 65

Pendant Poles, Page 77 of the specification book calls for steel pendant pole. Drawings numbers 428 & 423 call for aluminum pendant pole. What material do you want used in the production of these poles, steel or aluminum?

Response # 65

Poles shall be of Steel.

Question # 66

Anchor Bolts – The anchor bolt detail for the #16 poles on sheet 428 calls for 1.25” x 36” x 4”. Typically these anchor bolts are supplied and installed in the District as 1” x 36” x 4”, as per manufacturers recommendations. Is the drawing correct showing 1/25” inch diameter bolts? Or does the District want 1” diameter bolts?

Response # 66

1.25” dia. bolts are required to be used.

Question # 67

Fixtures – On sheet 6 ‘ Summary of Quantities’, for items 618-761 & 618-779, what style fixtures are being specified? Roadway (Cut off Cobra Head) or Teardrop style?

Response # 67

Tear drop style fixtures are specified.

Question # 68

Most of the Match Line notes on the Communication Cable Drawings make no sense. Several of the notes refer to Sheets that have nothing to do with the Communication Cable.

Response # 68

See Revised sheets.

Question # 69

There is no Bid Item for relocating existing traffic poles to temporary bases.

Response # 69

The traffic signal operation at every intersection must be continuous throughout. Relocating existing traffic signal poles to temporary bases should not occur. The temporary bases the contractor uses should already have poles, heads and cables attached.

Question # 70

There is no Bid Item for furnishing and installing the 12' light poles on Starburst Plaza.

Response # 70

12' poles are 14 poles. Bid Item is 618 470.

Question # 71

There is no Bid Item or specifications for furnishing and installing the Video Detectors. There is one for the CCTV but that is a separate application.

Response # 71

There are no Video Detectors. See Revised Plans.

Question # 72

Line 2050 cites relocation of the temporary PCC bases. It should read "base and 20' pole" which is a much harder task.

Response # 72

The relocation of the pole, signal heads and cables are included, see revised SP.

Question # 73

Lines 2170 and 2180 each indicate a quantity of 86 devices to be installed in pedestrian signal heads but Line 2250 calls for only 18 signal heads.

Response # 73

The number of signal heads required is 86. See revised Pay Items.

Question # 74

Can you please clarify what PG Binder is required for the 2 asphalt items (402002 Superpave Base Course, 19mm) and 402012 Superpave Surface Course, 12.5mm)?

Response # 74

Use PG 76-22 for all asphalt items. See revised SP.

Question # 75

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Questions and Responses
Reconstruction of Benning Road, N.E.
From 14th & H Street to Oklahoma Avenue

Sheet 465 (of 536) shows an 18' cast pole with luminaire on the Northeast corner of Bladensburg Road and Benning Road, adjacent to Starburst Plaza. This traffic plan indicates this pole having an 8' mast arm mounted on it. To the best of our knowledge this application is not allowed in the District. The same situation exists on the North side of Florida Avenue, Sheet 479.

Response # 75

These poles are combination poles and 8' mast arm arms are for signal heads.

Question # 76

Is it the Districts intent to have new poles and devices installed on temporary bases during the construction phases of this project or do you want the existing poles and hardware moved to the bases?

The drawings use the term "proposed" which means new. this would significantly impact the quantities needed for the job.

Response # 76

The temporary traffic signal pole does not require new hardware, i.e., poles, and heads, but require in cabling (7C #14 AWG) for the vehicle and pedestrian heads. The signalized locations are to remain operational at all times. The contractor has the option of using old equipment, but it has to be approved by DDOT-TSA through visual inspection prior to placement on the project. The contractor is to contact DDOT - TSA a minimum of 7 days prior to placement of the temporary poles or as directed by the Chief Engineer.

Question # 77

Storm Drain System: Please provide Top and Invert Elevations for the following structures:

- MH-12A @ Station 98+08, 57' Lt. Benning Rd.
- MH-20A @ Station 99+20, 57' Lt. Benning Rd.
- MH-25A @ Station 134+64, 29.4' Rt. Benning Rd.
- MH-25 @ Station 135+97, 40' Lt. Benning Rd.
- MH-26A @ Station 137+92, 4.6' Rt. Benning Rd.
- MH-29 @ Station 142+28, 5.3' Rt. Benning Rd.
- MH-19 @ Station 34+32, 8.5' Lt. Benning Rd.
- MH-3 @ Station 7+90, 25' Lt. Florida Ave.
- MH-7 @ Station 8+82, 26' Lt. 15th St.

Response # 77

See Revised plans.

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Questions and Responses

Reconstruction of Benning Road, N.E.

From 14th & H Street to Oklahoma Avenue

Question # 78

Please provide information for Panel A, and information for 3' 6"ht. fence Panel A with granite base?

Response # 78

Fence Panel A is covered under Fence Panel A & B with granite base (item 709 008) and drawings L-10 & L-15.

Question # 79

Please clarify type, color and sizes for Boulders at the plaza. I could not find in the specification or from Detail 7/L-07-L16.

Response # 79

See Revised SP SITE FURNISHING D.2.e.

Question # 80

It is not clear if the base of wall on Details 2,3,4/ L-09-L10 is granite precast or concrete pavers, please clarify/

Response # 80

See Revised Sheet L-10, No. 4.

Question # 81

It seems that they have put the granite cladding w/ the granite support block on 3/L-10 legend # 36. These two need to be separated as the cladding and the block will fall under two different pricing LF vs CuF as the block is dimensional.

Response # 81

See Revised Sheet L-10 and Revised Pay Items.

Question # 82

It is not clear if the base of wall on 2,3 &4/L-10 is granite precast or concrete paver. Please clarify what his band around the base of the wall is.

Response # 82

See revised sheet L-10, No. 4..

Question # 83

Boulders at the plaza 7/L-04-L-16 please also clarify what type of granit is this, is this to match granit curb or to match granite on wall.

Response # 83

See revised SP SITE FURNISHING D.2.e.

QUESTIONS RELATED TO STREETCAR WORK

Question # 84

Page 1 - item 0010 please provide specs for Patch and Fill?

Response # 84

This item was deleted from the Amended Pay Item Schedule. See the revised Schedule.

Question # 85

Page 2 – item 0100 Equipment Allowance, can DDOT provided the dollar amount for this item?

Response # 85

This item is deleted from the Amended Pay Item Schedule. See the revised Schedule.

Question # 86

Page 2 – item 0150 Equipment Allowance, can DDOT provided the dollar amount for this item?

Response # 86

This item is deleted from the Amended Pay Item Schedule. See the revised Schedule.

Question # 87

Appendix D - Pages 2 & 3 – Payment was shown in Metric unit

Response # 87

Payments changed to English Units. See the revised Schedule.

Question # 88

Appendix D - Page 16 – Pay Item specified as 1.52 mm PVC Geomembrane, can you provide the manufacture name and phone number for this item?

Response # 88

This is an item readily available from more than one vendor. The specification has been provided and therefore the contractor shall solicit his own bid from various suppliers.

Question # 89

Appendix D - Page 21 Material specification was specified in Metric unit

Response # 89

Materials were changed to English Units, see the revised Specifications.

Question # 90

Appendix D – In general, most SP was specified in Metric unit

Response # 90

SP revised to specify English units.

Question # 91

Appendix D - Pages 29, 30, 40 Payment; no pay item specified in these pages were found on the bid schedule of items.

Response # 91

These items are revised in the Amended Pay Item Schedule. See the revised Pay Items Schedule.

Question # 92

SP Pay Item: Trackwork – SP’s “Amend or Add” to another specification which is missing. Should there be a more concise general specification for light rail trackage/

Response # 92

See the revised SP specifications in the Amended contract documents.

Question # 93

SP Trackwork Section 01210.47 – “Slab Penetrations, etc, will be shown on the contract drawings”. Not shown. Car track drawings are incomplete. Can DDOT provide details for drainage and electrical needs in track areas?

Response # 93

See the added drawings and details.

Question # 94

SP Trackwork, Section 00209.04 – Haul, Mix and Place Aggregate. Is this not a GAB requirement?

Response # 94

This section was deleted; see the revised SP in the Amended contract documents.

Question # 95

SP Trackwork, Section 01210.47 – Slab Finish – “Transverse Heavy Broom on tine. Shouldn’ t this be “Heavy Broom or tine”?

Response # 95

The correct answer is “Heavy Broom and tine.”

Question # 96

SP Trackwork, Section 00209.00 All track references are expressed in metric values while bid is SAE. Shouldn’ t specifications and pay items match regarding measure & payment?

Response # 96

This section was deleted, see the revised SP in the Amended contract documents.

Question # 97

SP Trackwork General. - Pole Foundations require 400 PSI concrete – paving slabs require 5000 PSI. Shouldn't both be 4500 PSI concrete – bases (Structural class B) track paving (Paving class E (Trap Rock))?

Response # 97

Pole foundation concrete was revised to be 4500 PSI or Class B.

Question # 98

SP Trackwork General – Drainage plans for streetcar tracks are not shown on plans. Can DDOT provide drain locations, pipe sizes, sewer connections etc?

Response # 98

Track Drainage drawings and detail were added in the Amended contract documents

Question # 99

SP Trackwork – Please define the limits of sewer lining required by note on sheet 82. Information is in bidding documents – question withdrawn.

Response # 99

Question withdrawn

Question # 100

SP Trackwork – Catenary Poles are not part of this contract. Can DDOT provide details for temporary treatment of pole foundations?

Response # 100

Catenary pole installation is not part of this contract. Install steel plate to identify the center of each pole location per drawings included in this amendment.

Question # 101

PLAN – Sheet 33 – Concrete (See note 5 on Plan sheet 33). See Question # 99.

Response # 101

Track Drains plans and details are added to the Amended contract documents

Question # 102

Pay Item 0010 Trackwork – “Patch & Fill” plans and/or specs are not evident. Could specifications be developed to define this work

Response # 102

This Pay Item was deleted from the Pay Item Schedule. See the revised Schedule.

Question # 103

Pay Item 0140 Trackwork - "Conduits" there are no conduits shown on the plans. Could conduits be shown on the plans

Response # 103

Electrical plans for details were added in the Amended contract documents.

Question # 104

Pay Item 0150 Trackwork – “Equipment Allowance” has no specification. Could this requirement be further defined by SP?

Response # 104

This Equipment allowance was deleted from the Pay Item Schedule. See the revised Schedule in the Amended contract documents.

Question # 105

General Trackwork - Could this item be made lf of installed track with statements describing all materials to be furnished by DDOT?

Response # 105

Yes. See revised SP in the Amended contract document.

Question # 106

What is the starting schedule for the work of the alternate bid items?

Response # 106

The schedule for the add alternate items is as per the overall schedule of the total contract.

Question # 107

When will the alternate bid items be awarded?

Response # 107

The add alternate items will be awarded along with the main contract award, if DDOT chooses to do so.

Question # 108

If there are no funding monies for the alternate bid items, then should those work items be treated as a separate contract/schedule not knowing if it will be awarded?

Response # 108

See answer to the Question No.108.

Question # 109

Per section Sp paragraph 2.1c it states “streetcar work consisting of, rail tracks and associated items, pole foundations, cables etc. The work consists of the additive items given in Section 0001 of the bid proposal See S.P. No. 5. Please clarify “cable etc” since S.P. No. 5 does not describe what is required.

Response # 109

See revised Pay Items Section 0001. Etc. implies all items in Section 0001.

Question # 110

Per review of the contract drawings, we have not found/seen any work related to the alternate items on the contract drawings. Please clarify/provide drawings for these pay items.

Response # 110

See added plans

Question # 111

Can the PEPCO Indemnity Agreement clause be removed or reworded to also hold them accountable for their actions.

Response # 111

No.

Question # 112

Per bid line item # 0100 equipment allowance, please clarify what equipment is required?

Response # 112

The item for Equipment Allowance is deleted

Question # 113

Per bid line item #0150 equipment allowance, please clarify what equipment is required?

Response # 113

The item for Equipment Allowance is deleted

Question # 114

Per specification section S.P.01300.00 (b) “temporary & permanent power services to the substations.” Please provide and clarify the quantity and locations of the Substations that require this work.

Response # 114

This SP has been deleted. See revised SPs.

Question # 115

Per section 00757.00(c),it states to provide a “conduit for the feeder risers” but it does not clarify the routing for that conduit in the contract drawings. Please clarify.

Response # 115

See added plans.

Question # 116

Drawing sheet 33 of 536 references “See Track Alignment Plans for Pole Locations” Where can I locate these Track Alignment Plans? These Track alignment plans are critical in formulating our estimate.

Response # 116

See added plans.

Question # 117

What is the center to center spacing for the track drains?

Response # 117

See added plans.

Question # 118

Specification section 01210.11, Materials Furnished by Contractor states the track slab concrete shall be a minimum of 4000 PSI. The Rail Track Note No. 5 on Drawing sheet 33 of 536 states Concrete shall be a minimum of 5000 PSI. Which is correct?

Response # 118

The correct answer was 4500 PSI or Class B.

Question # 119

Specification section 01210.48 (d), Distressing Rail. Please provide a procedure for distressing rail installed in a rubber rail boot.

Response # 119

The procedure is up to the Contractor. The Contractor's procedure shall be submitted to the PM for approval.

Question # 120

Please provide the track alignment plans so we may determine Insulated joint locations, curve length and radius, Location and size of Turnouts, etc.

Response # 120

No insulated joints are required.

Question # 121

Specification section 01210.90 (h), Payment. This section states payment will be made under certain pay items. We cannot find these pay items in the Bid Forms. Will revised Bid Forms be issued by Amendment to include these pay items?

Response # 121

See the revised Pay Items Schedule.

Question # 122

What length of Ri59 and Ri52 will be furnished?

Response # 122

Lengths are specified as 60 foot with up to 10% shorts. Shorts shall not be less than 48 feet.

Question # 123

Since the District is furnishing the rail will the costs for pre curving of the rail be incurred by the district when purchasing the rail?

Response # 123

The costs for pre-curving are by the installing contractor.

Question # 124

Who is the supplier furnishing the Ri59 and Ri52 rail?

Response # 124

Procurement order is being placed thru WMATA. WMATA has not awarded contract yet.

Question # 125

Are the Ri59/Ri52 rail procurement documents available for our review?

Response # 125

Yes, if and when the contract is awarded.

SCHEDULE OF ITEMS

DATE:
REVISED:

CONTRACT ID: KA2005B0031CB PROJECT(S): STP-1116(26)
STP-1116(26)

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS

SECTION 0001 ADDITIVE ALTERNATE STREETCAR WORK

0010	000506 Unassigned Special Item -EACH - 314099 FURNISH AND INSTALL 0.06 INCH PVC GEOMEMBRANE	EACH 1200.000	.		.	
0020	000506 Unassigned Special Item -EACH - 618023 FURNISH AND INSTALL TRACTION ELECTRICAL MANHOLE	EACH 2.000	.		.	
0030	000506 Unassigned Special Item -EACH - 618992 FURNIHS AND INSTALL OCS POLE FOUN DATION TYPE 1	EACH 80.000	.		.	
0040	000506 Unassigned Special Item -EACH - 618992 FURNISH AND INSTALL OCS POLE FOUN DATION TYPE II	EACH 34.000	.		.	
0050	000509 Unassigned Special Item -LF - 618993 TRACK ELECTRICAL TESTING	LF 11800.000	.		.	
0060	000511 Unassigned Special Item -LS - 618991 FURNISH AND INSTALL DUCT BANK VARIOUS SIZE	LUMP	LUMP		.	
0070	202002 Common Excavation	CY 7000.000	.		.	

SCHEDULE OF ITEMS

DATE:
REVISED:

CONTRACT ID: KA2005B0031CB PROJECT(S): STP-1116(26)
STP-1116(26)

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0080	310012 Basin Connect PCC Pipe, Class IV, 15 Inch	710.000 LF	.		.	
0090	310992 Catch Basins Special Item -EACH - FURNISH AND INSTALL TRACK DRAINAGE BASIN AND GRATE	26.000 EACH	.		.	
0100	501993 Portland Cement Concrete Pavement Special Item -LF - FURNISH AND INSTALL RI52 PCC PAVED TRACK	11800.000 LF	.		.	
0110	612002 Mobilization	LUMP	LUMP		.	
	SECTION 0001 TOTAL				.	

SECTION 0002 ROADWAY WORK

0120	000003 Employee Training	4000.000 HR	.		.	
0130	000506 Unassigned Special Item -EACH - 618 992 - INGRADE UPLIGHT	24.000 EACH	.		.	
0140	000506 Unassigned Special Item -EACH - 618 993 - STEP LIGHT	16.000 EACH	.		.	

SCHEDULE OF ITEMS

DATE:
REVISED:

CONTRACT ID: KA2005B0031CB PROJECT(S): STP-1116(26)
STP-1116(26)

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0150	000509 Unassigned Special Item -LF - 618 075 - FURNISH AND INSTALL 2-2 INCH P VC ENCASED CONDUIT	130.000 LF	.		.	
0160	000509 Unassigned Special Item -LF - 618 077 - FURNISH AND INSTALL 3-2 INCH P VC ENCASED CONDUIT	60.000 LF	.		.	
0170	000509 Unassigned Special Item -LF - 618 079 - FURNISH AND INSTALL 4-2 INCH PVC ENCASED CONDUIT	100.000 LF	.		.	
0180	000509 Unassigned Special Item -LF - 618 081 - FURNISH AND INSTALL 1- 2 1/2 I NCH PVC ENCASED CONDUIT	150.000 LF	.		.	
0190	000509 Unassigned Special Item -LF - 618 151 - FURNISH AND INSTALL 3-2 INCH, 2-4 INCH PVC ENCASED CONDUIT	70.000 LF	.		.	
0200	000509 Unassigned Special Item -LF - 618 153 - FURNISH AND INSTALL 4-2 INCH , 2-4 INCH PVC ENCASED CONDUIT	110.000 LF	.		.	
0210	000509 Unassigned Special Item -LF - 618 155 - FURNISH AND INSTALL 2-2 INCH, 2-4 INCH PVC ENCASED CONDUIT	235.000 LF	.		.	

SCHEDULE OF ITEMS

DATE:
REVISED:

CONTRACT ID: KA2005B0031CB

PROJECT(S): STP-1116(26)
STP-1116(26)

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0220	000509 Unassigned Special Item -LF - 618 163 - FURNISH AND INSTALL 2-2 INCH, 6-4 INCH PVC ENCASED CONDUIT	LF 505.000	.		.	
0230	000509 Unassigned Special Item -LF - 618 167 - FURNISH AND INSTALL 4-2 INCH, 6-4 INCH PVC ENCASED CONDUIT	LF 170.000	.		.	
0240	000509 Unassigned Special Item -LF - 618 169 - FURNISH AND INSTALL 5-2 INCH, 6-4 INCH PVC ENCASED CONDUIT	LF 60.000	.		.	
0250	000509 Unassigned Special Item -LF - 618 171 - FURNISH AND INSTALL 6-2 INCH, 6-4 INCH PVC ENCASED CONDUIT	LF 10.000	.		.	
0260	000509 Unassigned Special Item -LF - 618 173 - FURNISH AND INSTALL 3-2 INCH, 6-4 INCH PVC ENCASED CONDUIT	LF 450.000	.		.	
0270	000509 Unassigned Special Item -LF - 618 871 - REMOVE ELECTRICAL CABLE (STREE T LIGHTING CABLE)	LF 3400.000	.		.	
0280	000511 Unassigned Special Item -LS - PARTNERING	LUMP	LUMP		.	

SCHEDULE OF ITEMS

DATE:

REVISED:

CONTRACT ID: KA2005B0031CB

PROJECT(S): STP-1116(26)
STP-1116(26)

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0290	000515 Unassigned Special Item -SY - 213003 - GEOTEXTILE FABRIC	61080.000 SY	.		.	
0300	108002 Progress Photographs	LUMP	LUMP			.
0310	108004 As-Built Drawings	LUMP	LUMP			.
0320	202002 Common Excavation	47400.000 CY	.		.	
0330	204004 Borrow Embankment Fill	750.000 CY	.		.	
0340	207002 Trench Excavation and Backfill	11275.000 CY	.		.	
0350	207004 Trench Undercut Excavation	1150.000 CY	.		.	
0360	207006 Gravel for Trench Undercut	1150.000 CY	.		.	
0370	207008 Borrow Trench Backfill	360.000 CY	.		.	
0380	209002 Aggregate Base Course	11470.000 CY	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
0390	209991 Aggregate Base Course Special Item -CY- 209 003 - FREE DRAINING BASE COURSE	10580.000 CY	.		.	
0400	300002 Water and Sewer Service Special Item-CY - 314 029 - CONCRETE ENCASUREMENT OF EX. SEWER	5.000 CY	.		.	
0410	300007 Water and Sewer Service Special Item-LS - 314 027 - SLIP LINING OF EX. 6'3" COMB. SEWER	LUMP	LUMP		.	
0420	302002 Valve Casing	48.000 EACH	.		.	
0430	303002 Abandon Valve Casing	22.000 EACH	.		.	
0440	303004 Remove Fire Hydrant	25.000 EACH	.		.	
0450	304002 Butterfly Valve Manhole	2.000 EACH	.		.	
0460	305002 Ductile Iron Pipe, 4 - 8 Inch	1290.000 LF	.		.	
0470	305004 Ductile Iron Pipe, 12 Inch	4000.000 LF	.		.	
0480	305010 Ductile Iron Pipe, 30 Inch	37.000 LF	.		.	

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0490	305018 Extra Fittingd - Contractor Furnished	75.000 LBS	.		.	
0500	305991 Pipe Water Main - Ductile Iron Special Item - LF - 305009 - DUCTILE IRON PIPE - 24 INCH	416.000 LF	.		.	
0510	306002 Gate Butterfly Valve, 3 - 12 Inch	47.000 EACH	.		.	
0520	306008 Gate Butterfly Valve, 24 Inch	2.000 EACH	.		.	
0530	306991 Gate Butterfly Valve Special Item - EACH - 306 001 - GATE BUTTERFLY VALVE (2 INCH)	1.000 EACH	.		.	
0540	307002 Set Fire Hydrant	25.000 EACH	.		.	
0550	308012 Replace Water Service Pipe	1000.000 LF	.		.	
0560	308014 Furnish and Install Curb Stop/Curb Stop Box	50.000 EACH	.		.	
0570	308016 Furnish&Install Water Meter Housing, Frame& Cover	50.000 EACH	.		.	
0580	308018 Water Service Test Hole	10.000 EACH	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
0590	309002 Sewer Manhole on Sewer 48 Inch and Less Dia.	498.000 VLF	.		.	
0600	309004 Sewer Manhole on Sewer Greater Than 48 In Dia.	75.000 VLF	.		.	
0610	309006 Reinforced PCC Base on Sewers Greater 48 In Dia.	6.000 EACH	.		.	
0620	310004 Standard Double Basin	43.000 EACH	.		.	
0630	310006 Standard Triple Basin	15.000 EACH	.		.	
0640	310008 Basin Connect PCC Pipe, Class III, 15 Inch	1290.000 LF	.		.	
0650	310991 Catch Basins Connecting Pipe Special Item - LF - 310 009 - 8" PVC PIPE	150.000 LF	.		.	
0660	310991 Catch Basins Connecting Pipe Special Item - LF - 311 035 - CLEAN PCC PIPE	420.000 LF	.		.	
0670	310992 Catch Basins Special Item -EACH - 310 007 - PLAZA DRAINAGE INLET	8.000 EACH	.		.	
0680	310992 Catch Basins Special Item -EACH - 311 025 - REMOVE EXISTING BASIN	1.000 EACH	.		.	

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0690	311002 Adjust Sewer-Water-Utility Manhole Frame	189.000 EACH	.		.	
0700	311026 Replace Existing Basin with Double Basin	9.000 EACH	.		.	
0710	311028 Replace Existing Basin with Triple Basin	4.000 EACH	.		.	
0720	311991 Adjust, Rebuild&Replace Manhole&Catchbasin-Special Item -EA- 311 033 - CLEAN SEWER STRUCTURE	5.000 EACH	.		.	
0730	313002 Abandon Basin Connecting Pipe	35.000 EACH	.		.	
0740	313006 Abandon Basin	35.000 EACH	.		.	
0750	314004 PCC Pipe, Class III, Gasket, 15 Inch	550.000 LF	.		.	
0760	314006 PCC Pipe, Class III, Gasket, 18 Inch	2290.000 LF	.		.	
0770	314008 PCC Pipe, Class III, Gasket, 21 Inch	260.000 LF	.		.	
0780	314010 PCC Pipe, Class III, Gasket, 24 Inch	50.000 LF	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
0790	314014 PCC Pipe, Class III, Gasket, 30 Inch	410.000 LF	.		.	
0800	314016 PCC Pipe, Class III, Gasket, 33 Inch	140.000 LF	.		.	
0810	314026 PCC Pipe, Class III, Gasket, 60 Inch	215.000 LF	.		.	
0820	315002 Pipe Sewer TV Inspection - LS -	LUMP	LUMP		.	
0830	324002 PCC In-Line Thrust Block	10.000 EACH	.		.	
0840	327991 Sidewalk Interceptor Drain, Connectn, Grating & Trap Special Item -LF - TRENCH DRAIN GRATE	24.000 LF	.		.	
0850	402002 Superpave Base Course, 19 mm	26800.000 TON	.		.	
0860	402012 Sperrpave Surface Course, 12.5 mm	6530.000 TON	.		.	
0870	403002 Tack Coat	2950.000 SY	.		.	
0880	405993 Bituminous Surface Treatment Special Item - SY - BITUMINOUS PAVEMENT	217.000 SY	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
0890	505024 Replace Driveway-Alley Entrance, 7 Inch	1550.000 SY	.		.	
0900	600003 Incidental Construction Special Item - CF - GRANITE FOUNTAIN WEIR	30.000 CF	.		.	
0910	600003 Incidental Construction Special Item - CF - GRANITE STONE BASE	40.000 CF	.		.	
0920	600003 Incidental Construction Special Item - CF - GRANITE STONE SLAB	100.000 CF	.		.	
0930	600003 Incidental Construction Special Item - CF - GRANITE SUPPORT BLOCK	10.000 CF	.		.	
0940	600003 Incidental Construction Special Item - CF - GRANITE VENEER PANEL	35.000 CF	.		.	
0950	600006 Incidental Construction Special Item - EACH - BICYCLE RACKS	8.000 EACH	.		.	
0960	600006 Incidental Construction Special Item - EACH - GAMETABLES	4.000 EACH	.		.	
0970	600006 Incidental Construction Special Item - EACH - PLAZA BOULDERS	6.000 EACH	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
0980	600006 Incidental Construction Special Item - EACH - PRUNING TREES	EACH 110.000	.		.	
0990	600006 Incidental Construction Special Item - EACH - TREE PROTECTION	EACH 111.000	.		.	
1000	600009 Incidental Construction Special Item - LF - AERATION STRIPS	LF 7060.000	.		.	
1010	600009 Incidental Construction Special Item - LF - FURNISH AND SET BLOCK PAVERS ON GRANULAR BASE JUMBO COBBLESTONE	LF 3150.000	.		.	
1020	600011 Incidental Construction Special Item - LS - FOUNTAIN MECHANICAL/ELECTRICAL	LUMP	LUMP		.	
1030	600011 Incidental Construction Special Item - LS - FOUNTAIN STRUCTURE(WALL, RESERVOIRS, ETC)	LUMP	LUMP		.	
1040	600011 Incidental Construction Special Item - LS - UTILITY VAULT FOR FOUNTAIN, IRRIGATION, LIGHTING EQUIPMENT	LUMP	LUMP		.	

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			DOLLARS	CTS	DOLLARS	CTS
1050	600013 Incidental Construction Special Item - SF - PRECAST CONCRETE CLADDING (WALLS AND STAIRS)	1400.000 SF
1060	600013 Incidental Construction Special Item - SF - STONE PAVING ON CONCRETE BASE	120.000 SF	.	.	.	.
1070	600014 Incidental Construction Special Item - SY - FURNISH AND SET BLOCK PAVER ON CONCRETE BASE	2508.000 SY	.	.	.	.
1080	600014 Incidental Construction Special Item - SY - FURNISH AND SET BLOCK PAVERS ON GRANULAR BASE CUBE COBBLESTONE	2592.000 SY	.	.	.	.
1090	601002 PCC Bus Stop Pad	560.000 CY	.	.	.	.
1100	602010 Standard PCC Coping NA	45.000 CY	.	.	.	.
1110	603004 Underdrain Pipe, 6 Inch	23400.000 LF	.	.	.	.
1120	604012 Underdrain Connect Pipe, 6 Inch	1000.000 LF
1130	606002 Pavement Profiling (Milling)	2950.000 SY

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			DOLLARS	CTS	DOLLARS	CTS
1140	608008 Exposed Aggregate Sidewalk, 4 Inch	5849.000 SY	.		.	
1150	608992 Sidewalks & Driveway Special Item - SY - EXPOSED AGGREGATE PLATFORM	300.000 SY	.		.	
1160	609068 Furnish and Set 8"x12" Granite Straight Curb	18050.000 LF	.		.	
1170	609070 Furnish and Set 8"x12" Granite Circular Curb, Radius Under 10 Ft.	1330.000 LF	.		.	
1180	609072 Furnish and Set 8"x12" Granite Circular Curb, Radius 10-100 Ft.	1630.000 LF	.		.	
1190	609074 Furnish and Set 8"x12" Granite Circular Curb, Radius Over 100 Ft.	2991.000 LF	.		.	
1200	609090 Salvage Stone Curb PLANTER WALL	73.000 LF	.		.	
1210	609090 Salvage Stone Curb RECLAMATED GRANITE STEP	130.000 LF	.		.	
1220	609204 PCC Wheelchair/Bicycle Ramp	420.000 SY	.		.	
1230	609500 Brick Gutter	14750.000 LF	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
1240	609992 Curb, Gutter, & Paved Flume Special Item - SY - PRECAST CONCRETE TACTILE PAVER WITH TRUNCATED DOMES	112.000 SY	.		.	
1250	609993 Curb, Gutter, & Paved Flume Special Item - LF - 609075 FURNISH & SET 10"X20" GRANITE CURB	144.000 LF	.		.	
1260	609993 Curb, Gutter, & Paved Flume Special Item - LF - 609097 FURNISH & SET GRANITE CURB TRANSITION (10"X12"TO 20")	144.000 LF	.		.	
1270	610020 Sod with 4 Inch Topsoil	2194.000 SY	.		.	
1280	610058 Planting Soil Mix	505.000 CY	.		.	
1290	610060 Mulch	460.000 SY	.		.	
1300	611002 Remove Tree and Stump up to 6 Inch Dia.	2.000 EACH	.		.	
1310	611004 Remove Tree and Stump 6 to 12 Inch Dia.	3.000 EACH	.		.	
1320	611006 Remove Tree and Stump 12 to 18 Inch Dia.	2.000 EACH	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
1330	611016 Remove Tree and Stump over 42 Inch Dia.	1.000 EACH	.		.	
1340	611042 Prune Tree 12 Inch to 18 Inch Dia.	13.000 EACH	.		.	
1350	611044 Prune Tree 18 Inch to 24 Inch Dia.	10.000 EACH	.		.	
1360	611046 Prune Tree 24 Inch to 30 Inch Dia.	6.000 EACH	.		.	
1370	611048 Prune Tree 30 Inch to 36 Inch Dia.	3.000 EACH	.		.	
1380	611080 Irrigation System	LUMP	LUMP		.	
1390	611094 Park Benches	10.000 EACH	.		.	
1400	611104 Litter Baskets TRASH RECEPTACLES	17.000 EACH	.		.	
1410	611286 Amelanchier canadensis (Shadblow Serviceberry) 6 - 8 Ft. Ht. , B&B	5.000 EACH	.		.	
1420	611335 Betula nigra (River Birch) 2 1/2 - 3 Inch Cal., B&B	2.000 EACH	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
1430	611480 Gleditsia triacanthos inermis 'Moraine' (Common Moraine Thornless Honeylocust) 2 1/2 - 3 Inch Cal., B&B	EACH 13.000	.		.	
1440	611568 Juniperus horizontalis 'Bar Harbor' (Bar Harbor Creeping Juniper) 15 - 18 Inch Spread, B&B	EACH 69.000	.		.	
1450	611772 Platanus acerifolia (London Planetree) 3 1/2 - 4 Inch Cal., B&B	EACH 13.000	.		.	
1460	611811 Quercus acutissima (Sawtooth Oak) 2 1/2 - 3 Inch Cal., B&B	EACH 23.000	.		.	
1470	611988 Vinca minor (Common Periwinkle) @ Yr., 6 - 8 Runners, 4 - 6 Inch Long, 2 1/4 Inch Pots	EACH 5774.000	.		.	
1480	611999 Tree, Shrub, Vine, & Ground Cover Special Item - EACH - GROUND COVER (AMSONIA HUBRITCHII)	EACH 13.000	.		.	
1490	611999 Tree, Shrub, Vine, & Ground Cover Special Item - EACH - GROUND COVER (EUCHINACEA PURPUREA)	EACH 33.000	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
1500	611999 Tree, Shrub, Vine, & Ground Cover Special Item - EACH - GROUND COVER (LIRIOPE MUSCARI JOHN BURCH)	132.000 EACH	.		.	
1510	611999 Tree, Shrub, Vine, & Ground Cover Special Item - EACH - GROUND COVER (LIRIOPE MUSCARI)	5984.000 EACH	.		.	
1520	611999 Tree, Shrub, Vine, & Ground Cover Special Item - EACH - GROUND COVER (PHIOX SUBLATA)	214.000 EACH	.		.	
1530	611999 Tree, Shrub, Vine, & Ground Cover Special Item - EACH - ORNAMENTAL GRASS (PENNISETUM ALOPECUROIDES 'LITTLE BUNNY')	280.000 EACH	.		.	
1540	611999 Tree, Shrub, Vine, & Ground Cover Special Item - EACH - ORNAMENTAL GRASS (PEROVSKIA ATRIPLICIFOLIA)	266.000 EACH	.		.	
1550	611999 Tree, Shrub, Vine, & Ground Cover Special Item - EACH - SHADE TREES (ULMUS AMERICANA 'PRINCETON')	9.000 EACH	.		.	
1560	611999 Tree, Shrub, Vine, & Ground Cover Special Item - EACH - SHADE TREES (ULMUS AMERICANA 'LIBERTY')	7.000 EACH	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
1570	611999 Tree, Shrub, Vine, & Ground Cover Special Item - EACH - SHRUBS (NANDINA DOMESTICA)	21.000 EACH	.		.	
1580	611999 Tree, Shrub, Vine, & Ground Cover Special Item - EACH - SHRUBS (COMUS ALBA 'BAIHALO')	5.000 EACH	.		.	
1590	611999 Tree, Shrub, Vine, & Ground Cover Special Item - EACH - SHRUBS (SPIREA X BUMALDA 'ANTHONY WATERER')	47.000 EACH	.		.	
1600	611999 Tree, Shrub, Vine, & Ground Cover Special Item - EACH - SHRUBS (VIBUMUM OPULUS 'COMPACTUM')	5.000 EACH	.		.	
1610	611999 Tree, Shrub, Vine, & Ground Cover Special Item - EACH - SHRUBS (ANDROPOGON SCOPARIUS)	87.000 EACH	.		.	
1620	611999 Tree, Shrub, Vine, & Ground Cover Special Item - EACH - TREE (LAGERSTOEMIA 'ARAPAHOE')	9.000 EACH	.		.	
1630	611999 Tree, Shrub, Vine, & Ground Cover Special Item - EACH - TREE (QUERCUS PHELLOS)	10.000 EACH	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
1640	611999 Tree, Shrub, Vine, & Ground Cover Special Item - EACH - TREE (QUERCUS RUBRA)	7.000 EACH
1650	611999 Tree, Shrub, Vine, & Ground Cover Special Item - EACH - TREE (SYRINGA RETICULATA)	51.000 EACH	.	.	.	.
1660	612002 Mobilization	LUMP	LUMP	.	.	.
1670	614012 Portable Precast PCC Barrier	24820.000 LF	.	.	.	.
1680	616004 Construction Lane Closing	LUMP	LUMP	.	.	.
1690	616006 Remove Lane Markings	3200.000 SF	.	.	.	.
1700	616008 Temporary Construction Sign Supports	438.000 EACH	.	.	.	.
1710	616012 Construction Warning and Detour Signs	5300.000 SF	.	.	.	.
1720	616020 Sequential Arrow Boards	59.000 EACH
1730	616024 Type III PVC Barricade	139.000 EACH

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			DOLLARS	CTS	DOLLARS	CTS
1740	616028 Traffic Drums	1103.000 EACH	.		.	
1750	616040 Thermoplastic Pavement Marking, 4 Inch	36787.000 LF	.		.	
1760	616044 Thermoplastic Pavement Marking, 6 Inch	4107.000 LF	.		.	
1770	616048 Thermoplastic Pavement Marking, 8 Inch	212.000 LF	.		.	
1780	616050 Thermoplastic Pavement Marking, 12 Inch	1089.000 LF	.		.	
1790	616052 Thermoplastic Pavement Letter	88.000 EACH	.		.	
1800	616054 Thermoplastic Pavement Arrow	48.000 EACH	.		.	
1810	616090 Construction Zone Attenuator	110.000 EACH	.		.	
1820	616122 Steel Protection Plate	60.000 EACH	.		.	
1830	616991 Traffic Control Special Item - LS - 617 165 FURNISH AND INSTALL CCTV CAMERA INSTALLATION	LUMP	LUMP		.	

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			DOLLARS	CTS	DOLLARS	CTS
1840	616992 Traffic Control Special Item - EACH - 616 110 - PORTABLE VARIABLE MESSAGE SIGN	EACH 4.000	.		.	
1850	616992 Traffic Control Special Item - EACH - 617 166 FURNISH AND INSTALL PCC FOUNDATI ON FOT TERMINATION CABINET	EACH 3.000	.		.	
1860	616992 Traffic Control Special Item - EACH - 617 168 FURNISH AND INSTALL TERMINATION CABINET	EACH 3.000	.		.	
1870	616992 Traffic Control Special Item - EACH - 617 170 REMOVE ABANDONED TERMINATION CA BINET FOUNDATION	EACH 3.000	.		.	
1880	616992 Traffic Control Special Item - EACH - 617 172 REMOVE EXISTING COMMUNICATION TE RMINATION CABINET	EACH 3.000	.		.	
1890	616993 Traffic Control Special Item - HR - 616 115 - PORTABLE VARIABLE MESSAGE SIGN	HR 1600.000	.		.	
1900	616994 Traffic Control Special Item - LF - 616 051 - THERMOPLASTIC PAVEMENT MARKING , 24 INCH	LF 7395.000	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
1910	616994 Traffic Control Special Item - LF - 616 070 TAPED LANE MARKING, 4 INCH	127175.000 LF	.		.	
1920	617002 Furnish And Install Inductive Loop Detector	2241.000 LF	.		.	
1930	617004 Furnish And Install 400 Watt High Pressure Sodium Luminaire, Lamp And Photocell	88.000 EACH	.		.	
1940	617006 Remove Abandoned Traffic Signal Or Street Light Pole Foundat ion	84.000 EACH	.		.	
1950	617008 Furnish And Install Pcc Foundation For Traffic Signal Pole O r Pendant Post Street Light Pole	219.000 EACH	.		.	
1960	617014 Furnish And Install One 2 Inch Pvc Encased Electrical Condui t	12332.000 LF	.		.	
1970	617016 Furnish And Install One 4 Inch Pvc Encased Electrical Condui t	45.000 LF	.		.	
1980	617024 Furnish And Install Galvanized Steel Transformer Base	81.000 EACH	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
1990	617026 Furnish And Install 28 Foot 6 Inch Tall Pendant Post Street Light Pole	EACH 16.000	.		.	
2000	617028 Furnish And Install Handbox	EACH 20.000	.		.	
2010	617032 Furnish And Install One 2 Inch And One 4 Inch Pvc Encased El ectrical Conduits	LF 1675.000	.		.	
2020	617038 Furnish And Install Pcc Foundation For Controller Cabinet	EACH 10.000	.		.	
2030	617040 Furnish Temporary, Portable, Concrete Base For Model 336-S A nd Model 336-Ss Traffic Signal Controller Cabinet	EACH 9.000	.		.	
2040	617042 Furnish Temporary, Portable, Concrete Base For 20 Foot Steel Traffic Signal Pole Mounted On A Transformer Base	EACH 64.000	.		.	
2050	617044 Relocate Any Temporary, Portable, Concrete Base	EACH 17.000	.		.	
2060	617046 Furnish And Install 20 Foot Tall Steel Traffic Signal Pole	EACH 39.000	.		.	

SCHEDULE OF ITEMS

DATE:
REVISED:

CONTRACT ID: KA2005B0031CB

PROJECT(S): STP-1116(26)
STP-1116(26)

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2070	617048 Furnish And Install 8 Foot Long Mast Arm With Clamp And Removable End Cap	30.000 EACH	.		.	
2080	617050 Furnish And Install 7 Conductor 14 Awg Stranded Electrical Traffic Signal Cable	22740.000 LF	.		.	
2090	617052 Furnish And Install 4 Conductor 18 Awg Shielded, Stranded Electrical Traffic Signal Cable	11925.000 LF	.		.	
2100	617054 Furnish And Install 12 Pair 19 Awg Underground Communication s Cable	12520.000 LF	.		.	
2110	617062 Furnish And Install 50 Pair 19 Awg Underground Communication s Cable	9430.000 LF	.		.	
2120	617068 Furnish Red Ball Led Module	150.000 EACH	.		.	
2130	617070 Furnish Yellow Ball Led Module	155.000 EACH	.		.	
2140	617072 Furnish Green Ball Led Module	151.000 EACH	.		.	
2150	617076 Furnish Yellow Arrow Led Module	13.000 EACH	.		.	

SCHEDULE OF ITEMS

DATE:
REVISED:

CONTRACT ID: KA2005B0031CB

PROJECT(S): STP-1116(26)
STP-1116(26)

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2160	617078 Furnish Green Arrow Led Module	22.000 EACH	.		.	
2170	617084 Furnish 12 Inch Overlay Lunar White Walking Person And Portl and Orange Raised Hand Led Module	86.000 EACH	.		.	
2180	617086 Furnish 12 Inch Portland Orange Countdown Led Module	86.000 EACH	.		.	
2190	617090 Furnish And Install 3 Section Conventional Traffic Signal He ad On A Pole (All Lenses 12?)	103.000 EACH	.		.	
2200	617092 Furnish And Install 4 Section Conventional Traffic Signal He ad On A Pole (All Lanes 12?)	3.000 EACH	.		.	
2210	617094 Furnish And Install 5 Section Conventional Traffic Signal He ad On A Pole (All Lenses 12?)	17.000 EACH	.		.	
2220	617096 Furnish And Install 3 Section Conventional Traffic Signal He ad On A Mast Arm (All Lenses 12?)	28.000 EACH	.		.	

SCHEDULE OF ITEMS

DATE:
REVISED:

CONTRACT ID: KA2005B0031CB

PROJECT(S): STP-1116(26)
STP-1116(26)

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2230	617098 Furnish And Install 4 Section Conventional Traffic Signal Head On A Mast Arm (All Lanes 12?)	EACH 1.000	.		.	
2240	617100 Furnish And Install 5 Section Conventional Traffic Signal Head On A Mast Arm (All Lenses 12?)	EACH 1.000	.		.	
2250	617114 Furnish And Install 2 Section Conventional Pedestrian Signal Head On A Pole (12?)	EACH 86.000	.		.	
2260	617118 Furnish And Install Pedestrian Push Button	EACH 86.000	.		.	
2270	617120 Furnish And Install Microwave Vehicle Detector	EACH 20.000	.		.	
2280	617124 Furnish And Install Traffic Signal Controller And Cabinet	EACH 10.000	.		.	
2290	617126 Remove Abandoned Traffic Signal Controller Cabinet Foundation	EACH 2.000	.		.	
2300	617128 Remove Street Light Pole And Street Light Equipment	EACH 16.000	.		.	

SCHEDULE OF ITEMS

DATE:
REVISED:

CONTRACT ID: KA2005B0031CB

PROJECT(S): STP-1116(26)
STP-1116(26)

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2310	617130 REMOVE TRAFFIC SIGNAL POLE AND TRAFFIC SIGNAL EQUIPMENT SEE PLANS	48.000 EACH	.		.	
2320	617132 Remove Traffic Signal Controller And Cabinet	9.000 EACH	.		.	
2330	618016 Furnish and Install 36" x 36" x 36" Manhole	60.000 EACH	.		.	
2340	618022 Furnish and Install 48" x 48" x 48" Manhole	55.000 EACH	.		.	
2350	618148 Furnish and Install 6-4" Schedule 40 Rigid PVC Conduits (duct bank)	9075.000 LF	.		.	
2360	618150 Furnish and Install 6-4" and 1-2" Schedule 40 Rigid PVC Conduits (duct bank)	1250.000 LF	.		.	
2370	618152 Furnish and Install 6-4" and 2-2" Schedule 40 Rigid PVC Conduits (duct bank)	485.000 LF	.		.	
2380	618154 Furnish and Install 4-4" Schedule 40 Rigid PVC Conduit (duct bank)	3515.000 LF	.		.	
2390	618160 Furnish and Install 2-4" Schedule 40 Rigid PVC Conduit (duct bank)	255.000 LF	.		.	

SCHEDULE OF ITEMS

DATE:
REVISED:

CONTRACT ID: KA2005B0031CB

PROJECT(S): STP-1116(26)
STP-1116(26)

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2400	618162 Furnish and Install 2-4" and 1-2" Schedule 40 Rigid PVC Cond uit (duct bank)	285.000 LF	.		.	
2410	618190 Furnish and Install #10 Stranded Wire	41298.000 LF	.		.	
2420	618196 Furnish and Install #8 Stranded Wire	1300.000 LF	.		.	
2430	618202 Furnish and Install #6 Stranded Wire	2970.000 LF	.		.	
2440	618244 Furnish and Install #000 Stranded Wire	600.000 LF	.		.	
2450	618250 Furnish and Install #0000 Stranded Wire	25248.000 LF	.		.	
2460	618292 Furnish and Install #8 Stranded Ground Wire	19017.000 LF	.		.	
2470	618308 Install D.C. Furnished #4 Stranded Ground Wire	150.000 LF	.		.	
2480	618310 Furnish and Install #2 Stranded Ground Wire	8479.000 LF	.		.	
2490	618394 Furnish and Install 15" B.C. Street Light Foundation	75.000 EACH	.		.	

SCHEDULE OF ITEMS

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CONTRACT ID: KA2005B0031CB

PROJECT(S): STP-1116(26)
STP-1116(26)

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2500	618436 Furnish and Install 15" B.C Steel Transformer Base	84.000 EACH	.		.	
2510	618470 Furnish and Install #14 Cast Iron Pole	5.000 EACH	.		.	
2520	618486 Furnish and Install #16 Cast Iron Pole	115.000 EACH	.		.	
2530	618502 Furnish and Install #18 Cast Iron pole	19.000 EACH	.		.	
2540	618554 Furnish and Install 28'-6" Aluminum Pendant Pole with up to 8' Arm	84.000 EACH	.		.	
2550	618566 Remove Pendant Pole 30 ft. Height or Less	59.000 EACH	.		.	
2560	618630 Remove Wood Pole 35 ft. Height or less	24.000 EACH	.		.	
2570	618668 Remove arm from wood pole up to 8 ft. in Length	39.000 EACH	.		.	
2580	618676 Furnish and Install 8 ft. Arm on Wood Pole	15.000 EACH	.		.	
2590	618720 Remove Luminaire from Wood Pole	39.000 EACH	.		.	

SCHEDULE OF ITEMS

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PROJECT(S): STP-1116(26)
STP-1116(26)

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2600	618722 Remove Luminaire from Steel Pole	59.000 EACH	.		.	
2610	618742 Furnish and Install 150 Watt HPS Cutoff Luminaire	10.000 EACH	.		.	
2620	618754 Furnish and Install 250 Watt HPS Cutoff Luminaire	6.000 EACH	.		.	
2630	618760 Furnish and Install 250 Watt HPS Tear Drop Fixture	46.000 EACH	.		.	
2640	618802 Furnish and Install 250 Watt HPS Conversion Kit	120.000 EACH	.		.	
2650	618860 Furnish and Install 118 Plastic Globe	120.000 EACH	.		.	
2660	618890 Furnish 4" PVC Rigid U-Guard on Wood Pole	150.000 LF	.		.	
2670	618910 Furnish and Install Ground Rod	75.000 EACH	.		.	
2680	618928 Furnish and Install Electrical Junction Box	3.000 EACH	.		.	
2690	618999 Payment to PEPCO for Connection, Disconnection, Inspection NA	LUMP	LUMP		90500.00	

SCHEDULE OF ITEMS

DATE:
REVISED:

CONTRACT ID: KA2005B0031CB PROJECT(S): STP-1116(26)
STP-1116(26)

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2700	620014 Traffic Sign Panels	755.000 SF	.		.	
2710	620032 Remove Existing Ground Mounted Sign	258.000 SF	.		.	
2720	620036 Reset Guide Sign Panel	68.000 SF	.		.	
2730	620040 Federal Aid Project Sign	2.000 EACH	.		.	
2740	620993 Traffic Signing Special Item - EACH - 620 009 - STEEL DRIVE POST	124.000 EACH	.		.	
2750	620993 Traffic Signing Special Item - EACH - 620 041 - DC PROJECT SIGN	2.000 EACH	.		.	
2760	624002 Engineer's Field Facilities	LUMP	LUMP		.	
2770	625002 Field Layout	LUMP	LUMP		.	
2780	628002 Erosion and Sediment Control	LUMP	LUMP		.	
2790	700004 Structures Construction Special Item - EACH - STAIRCASE	2.000 EACH	.		.	

SCHEDULE OF ITEMS

DATE:

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CONTRACT ID: KA2005B0031CB

PROJECT(S): STP-1116(26)
STP-1116(26)

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2800	700005 Structures Construction Special Item - LF - CONCRETE SEATWALLS	LF 781.000	.		.	
2810	700005 Structures Construction Special Item - LF - RETAINING WALL	LF 80.000	.		.	
2820	700006 Structures Construction Special Item - LBS - STEEL PLATE FOR MURAL	LBS 680.000	.		.	
2830	701991 Piling Special Item - LF - 701053 DRILLED PIER 48 INCH	LF 18.000	.		.	
2840	709006 Pipe Handrail SEE PLANS	LF 81.000	.		.	
2850	709008 Picket Fence Railing, 3'-6" Height FENCE PANEL A & B WITH GRANITE BASE	LF 64.000	.		.	
2860	709991 Railing Special Item - LF - 709 003 - PLANTER RAILING AND CONCRETE BASE	LF 215.000	.		.	
	SECTION 0002 TOTAL				.	
	TOTAL BID				.	

GOVERNMENT OF THE DISTRICT OF COLUMBIA
OFFICE OF THE CHIEF FINANCIAL OFFICER
OFFICE OF TAX AND REVENUE



TAX CERTIFICATION AFFIDAVIT

THIS AFFIDAVIT IS TO BE COMPLETED ONLY BY THOSE WHO ARE REGISTERED TO CONDUCT BUSINESS IN THE DISTRICT OF COLUMBIA.

Date: _____

Name of Organization/Entity: _____

Address: _____

Business Telephone No.: _____

Principal Officer:

Name: _____ Title: _____

Soc. Sec. No.: _____

Federal Identification No.: _____

Contract No.: POKA-2005-B-0031-CB

Unemployment Insurance Account No.: _____

I hereby certify that:

- I have complied with the applicable tax filing and licensing requirements of the District of Columbia.
- The following information is true and correct concerning tax compliance for the following taxes for the past five (5) years:

District:		Current	Not Current	Not Applicable
Sales and Use		()	()	()
Employer Withholding	()	()	()	()
Ball Park Fee		()	()	()
Corporation Franchise		()	()	()
Unincorporated Franchise		()	()	()
Personal Property		()	()	()
Real Property		()	()	()
Individual Income		()	()	()

The Office of Tax and Revenue is hereby authorized to verify the above information with the appropriate government authorities. The penalty for making false statements is a fine not to exceed \$5,000.00, imprisonment for not more than 180 days, or both, as prescribed by D.C. Official Code § 47-4106.

This affidavit must be notarized and becomes void if not submitted within 90 days of the date notarized.

Signature of Authorizing Agent

Title

Print Name

Notary: DISTRICT OF COLUMBIA, ss:

Subscribed and sworn before me this _____ day of _____ Month and Year

Notary Public: _____

My Commission Expires: _____

Reconstruction of Benning Road, N.E.
From 14th & H Street to Oklahoma Avenue

POKA-2005-B-0031-CB
Reconstruction of Benning Road NE
From 14th & H Street to Oklahoma Avenue

SPECIFICATIONS CHANGES

A. THE FOLLOWING SPs ARE REVISED AS FOLLOWS:

1. SP 2 – COORDINATION WITH OTHERS:

Delete the first paragraph (in its entirety) and replace with the following:

Other contracts either have been, will be or may be let for work in the project areas. Examples are Washington Gas Company working on conversion of the pipes to pressurized gas lines, PEPCO working on relocation of the distribution lines or Street Car contractor working on Streetcar construction in the event that DDOT awards the work to a separate contractor. It is possible that there could be contractors other than those mentioned here working in the area. The Contractor shall coordinate his work and cooperate fully with all working in the area in order to eliminate or curtail delays and interference of any kind. Particular attention shall be made with regard to proper maintenance of highway traffic through the project areas. The contractor shall perform his lane closings and openings so as not to cause interference with others or be in conflict with performances of traffic maintenance by others.

2. SP 19 – PROGRESS PHOTOGRAPHS – Item 108 002

Delete the paragraph GENERAL and substitute with the following;

GENERAL - The following modification shall be made to 108.08. Four hundred (400) original colored photographs (total) will be required. A minimum of one hundred (100) colored photographs shall be taken prior to beginning of work, and one hundred (100) colored photographs after construction. The remainder shall be taken throughout the construction work on a monthly basis.

3. SP 32 – HOT BITUMINOUS PAVEMENT (Page 15):

Delete the third sentence “This SP modifies 402.04” and replace with the following:

402.01 JOB DESCRIPTION

Add the following “The job mix formula for types of mixtures to be used for the bituminous pavement shall be as specified in Section 818 of the Standard Specification. The Performance Grade Binder to be used shall be PG 76-22 for all bituminous mixtures.”

4. SP 39 – CONCRETE PAVEMENT EXPOSED AGGREGATE FINISH, Item 501 992

a) Revise the name of the item to **EXPOSED AGGREGATE SIDEWALK Item 608 008.**

b) Page 26 – F. MEASUREMENT AND PAYMENT

Delete second paragraph and replace with the following;

“The aggregate base course as shown in the plans shall be considered incidental to the sidewalk. Any excavation below the existing sidewalk shall be paid under the item “COMMON EXCAVATION”.

5. Revise **SP 46 - TREES, SHRUBS, VINES AND GROUND COVER** as under:

Page 39 under Para (6) PLANTING SOIL MIX, add the following

USDA Textural Classification: Loamy Sand
10 – 15% clay
20 – 30% silt
70 – 80% sand

6. **SP 48 – MAINTENANCE OF HIGHWAY TRAFFIC**

Add the following paragraph after paragraph (B) TRAFFIC CONTROLS:

In addition to the provisions to the above paragraph, the contractor shall submit and obtain approval from the Chief Engineer, a detailed schedule for the construction of the Paved Track, with particular attention to the Starburst Intersection along with detailed Traffic Control plans. Any additional work required for subphasing or for implementing traffic detour etc., over and above those shown in the plans shall be considered as contingent to the various items of the maintenance of traffic and no separate payment will be made.

7. Revise **SP 50 - TRAFFIC SIGNAL WORK** as under:

- a) Page 77 under para (F) 28’ 6” PENDANT POLE WITH ARM, Item 617 026:

Delete the 2nd sentence in the second paragraph.

Add the following after the fourth paragraph.

“The arm shall be decorative curved type for street lighting bracket arms as detailed in the plans and straight type for Traffic Signal Bracket arms.”

- b) Page 79 add the following after 5th para (before Measurement and Payment)

“Section 617.21 of the Standard Specifications shall be amended as follows:

(A) GENERAL

Delete the last sentence and add the following paragraph:

“The item 617 044 “Relocate any temporary, portable, concrete base” shall include relocation of poles, signal heads and cables and other incidental items.”

8. **SP 51 - FURNISH AND INSTALL CCTV CAMERA INSTALLATION, Item 617 0165**

Para A. Description is revised to read as under;

“The work consists of providing a CCTV camera assembly and power supply mounted on a 28’-6” poles with a lowering device as shown on the plans and as described. The CCTV camera assembly shall be interconnected to the DDOT Traffic Signal Communication system through the newly installed traffic controller located at H Street/Benning Road at Bladensburg Road, N.E.”

Specification Changes

9. **SP 61 - FURNISH AND INSTALL FOUNTAIN ELECTRICAL SYSTEM**

Under Section 2 B RACEWAYS AND BOXES, Para 7.c, Delete the sentence "See JUNCTION BOX SCHEDULE for types".

B. THE FOLLOWING SPs ARE DELETED IN THEIR ENTIRETY:

1. **SP 20 - PRE AWARD APPROVAL**
2. **SP 38 – REPLACE PCC SIDEWALK, 4 INCH**

C. NEW SPs ADDED:

Add new SP 63 as under:

63. GEOTEXTILE FABRIC, Item 213 003

This SP supplements Section 213.

DESCRIPTION:

Add the following:

Where the geotextile fabric is used as a separation between the subsoil and the aggregate base course or the permeable base course, the payment shall be made under a separate item.

MATERIALS:

Replace the last paragraph, 1st sentence as follows:

"Geotextile fabric used for subsurface drainage, erosion control, sediment control or as a permeable separator shall meet the requirement of 822.11."

MEASUREMENT AND PAYMENT:

Add the following:

Geotextile Fabric will be measured and paid for under the contract unit price per square yard. The payment will be full compensation for furnishing and placing the geotextile fabric as specific and shown on the plans and for all material, labor, equipment, tools and incidentals necessary to complete the work.

Add new SP 64 as follows:

64. PARTNERING; Item 000 511

DESCRIPTION

The DC Department of Transportation (DDOT) invites the Contractor, subcontractors and suppliers to actively participate in a formal project partnering with the District and other parties involved (Note: This activity will not constitute a legal "partnership"). This partnership draws on the strengths of each organization to identify and achieve reciprocal

goals. Partnering strives to resolve problems in a timely, professional, and non-adversarial manner. If problems result in disputes, partnering encourages, but does not require, alternative dispute resolution instead of the formal claim process. The objectives are effective and efficient Contract performance, completion within the Contract bid price, on schedule, and in conformance with the Contract Documents. This partnership will not change the legal relationship of the parties to the Contract nor relieve any party from any of the terms of the Contract.

The DDOT's representatives and the Contractor's management representatives will meet, plan, and organize a partnering development team. FHWA and key local government personnel will also be invited to attend as necessary. The initial workshop team meeting shall be held between the time of award and the notice to proceed. Follow-up workshops shall be held as agreed by the Contractor and the Administration at intervals of 3 months on an average.

Invitations for the workshops, expenses in arranging the venue and preparing of minutes shall be the contractor's responsibility.

MEASUREMENT AND PAYMENT

No direct measure will be taken for payment against this item. Payment for Partnering will be made at the Contract Lump Sum, which payment will include providing all materials, equipment and personnel necessary to conduct the partnering workshop meetings, provide space and amenities, invitations and minutes and coordinating the partnering activities with DDOT personnel.

D. THE FOLLOWING SPs ARE REPLACED: (Replaced SPs are attached)

1. **SP 35 - FURNISH AND SET BLOCK PAVER ON CONCRETE BASE**, Item 600 014
2. **SP 36 - FURNISH AND SET BLOCK PAVER ON GRANULAR BASE**, Item 600 014
3. **SP 41 - GRANITE PAVING** Item No. 609 993 and replace with revised SP 41 - **GRANITE STONE PAVERS ON CONCRETE BASE** Item No. 609 993.
4. **SP 44 - TREE PROTECTION**
5. **SP 45 - SITE FURNISHING**
6. **SP 56 - PRESTRESSED CONCRETE UNITS** and replace with revised SP 56 - **PRECAST CONCRETE PANELS**, Item 600 013
7. **SP 57 - STONE MASONRY**

35. FURNISH AND SET BLOCK PAVER ON CONCRETE BASE, Item 600 014.

This Special Provision supplements 608 of the Standard Specifications.

A. DESCRIPTION

Work consists of constructing sidewalks concrete blocks in a bituminous setting bed with neoprene adhesive on PCC base as indicated in the contract documents. Joints shall be filled with a sand-cement mix. The exact pattern, block size, color, and

construction details shall be as indicated in the contract drawings and this special provision.

Before proceeding with the work, the Contractor shall submit full size sample pavers for approval by the COTR. The sample submitted shall be of production type and shall represent color and minimum quality of finish to be furnished by the manufacturer. Downgrading of quality demonstrated by samples shall be cause for rejection of work.

B. MATERIALS

Materials shall conform with section 806.02 and meet the following requirements:

1. PRESSED CONCRETE BLOCK PAVERS.

SIZE: 12" x 12" x 2"
6" x 6" x 2"

COLOR:

- A. Dark Red (Matrix # M176, Tudor finish) Hanover pavers (1.800.426.4242) colors and numbering system shall be the standard for color selection.
- B. Dark Gray (Matrix # M1459, Heavy Tudor finish) Hanover pavers (1.800.426.4242) colors and numbering system shall be the standard for color selection.
- C. Light Grey (Standard) *Nitterhouse PG-07*

2. BITUMINOUS SETTING BED. Asphalt cement of the bituminous setting bed shall conform to ASTM D 3381, viscosity grade AC-10 or AC-20.

The fine aggregate to be used in the bituminous setting bed shall be clean, hard sand with durable particles and shall be free from adherent coating lumps of clay, alkali salts, and organic matter. It shall be uniformly graded from coarse to fine and all passing the sieve No. 4. It shall meet the gradation requirements of ASTM C 136.

The dried fine aggregate shall be combined with hot asphalt cement, and the mix shall be heated to approximately 3008 F at an asphalt plant. The approximate proportion of materials by weigh shall be 7% asphalt and 93% fine aggregate. The Contractor shall determine the right proportions to produce best possible mixture for construction of bituminous setting bed to meet Project requirements.

3. NEOPRENE ADHESIVE. Neoprene-modified asphalt adhesive under the block pavers shall meet the following requirements:

- a) Mastic: (asphalt adhesive)
Solids (base): 75% 61%
Lbs./Gal.: 8.0 to 8.5

Solvent: Mineral spirits (over 1008 F flash)

- b) Base: (2% neoprene, 10% asbestos-free fibers, 88% asphalt)
Melting Point: ASTM D 36, 2008 F min.
Penetration: 23-27 at 778 F
Ductility, ASTM D 113 at 778 F, 5cm/min.: 125 cm min.

4. **DRY JOINT MATERIAL.** Standard Portland cement shall conform to AASHTO M85, Type I. Sand shall conform to AASHTO M45.
5. **EXPANSION JOINT AND SEALERS.** Preformed expansion joint filler and cold-poured sealant for use in pavement construction shall conform to 807.01 (A) and 807.02 (B) of the Standard Specifications. Cold-poured sealant shall be natural gray color.

C. CONSTRUCTION REQUIREMENTS

Pre-molded expansion joint material (1/2 inch) shall be placed along the back of curbs, around structures, along walls abutting the alley, and where located in the PCC base. The pre-molded material shall be removed to 1/2 inch below the alley surface and this space sealed.

1. **PCC BASE.** The PCC base shall be constructed on prepared sub-grade per 502 of the Standard Specifications. Depth of PCC base shall be 4 inches. Broom or machine finishing, scoring, carbon powder and joint sealer shall not be required for PCC base.
2. **SETTING BED.** To install the setting bed over the PCC base, place 3/4" control bars directly over the base. Space control bars approximately 11 feet apart and parallel to one another. Depth control bars must be set carefully to bring the pavers, when laid, to proper grade. The setting bed shall be rolled with a power roller to a nominal depth of 3/4" while still hot. The thickness shall be adjusted, so that when the block pavers are placed, the top surface of the pavers will be at the required finished grade. Thickness of the finished setting bed shall be no more than 1" nor less than 1/2".

A coating of neoprene-modified asphalt adhesive shall be applied by squeezing or troweling over top surface of setting bed to provide a bond under pavers. If a trowel is used, trowel shall be serrated with serrations not exceeding 1/16".

3. **LAYING BLOCK PAVERS.** Upon prepared bituminous bed the block pavers shall be laid in successive courses with the better face side upward. Do not use unit pavers with chips, cracks, voids, or other structural visible defects. Cut unit pavers with motor-driven saw equipment to provide clean, sharp, unchipped edges and to provide pattern indicated in the drawings and to fit adjoining work neatly. Use full units without cutting wherever possible.

Every course of block shall be carefully placed by hand in straight courses with hand tight joints, maintaining accurate alignment, and a uniform top surface. Hand tight joints shall be read from 0" to a maximum of 1/8". No course shall deviate from a straight line more than 2 inches in 30 feet. The pavers shall be installed not to exceed 1/16" unit-to-unit offset from flush. The maximum tolerance is 1/8" in 2 feet and 1/4" in 10 feet from level or slope of finished surface of paving. Block laying shall take place in a continuous sequence and shall follow the completion of the bedding within 50 feet.

Immediately after laying the pavers, the surface shall be inspected and approved by Chief Engineer. Block pavers, which are broken, chipped, or damaged shall be removed and replaced.

4. **JOINT FILLER.** Immediately after installation and inspection of the paving block, the joints shall be swept filled with a dry sand. Any excess of joint mixture shall be removed.

D. MEASURE AND PAYMENT

The unit of measure for FURNISH AND SET BLOCK PAVERS ON CONCRETE BASE will be the square yard. The number will be the actual number of square yards measured complete in place.

Payment will be made at the respective contract unit price per square yard. Payment will include furnishing and placing blocks for new construction, bituminous setting and dry joint filler and PCC base, performed expansion joint and joint sealer, paver restraint system, water, and all labor, tools, equipment and incidentals necessary to complete the work.

36. FURNISH AND SET BLOCK PAVER ON GRANULAR BASE, Items 600 014 & 600 019.

This Special Provision supplements 608 of the Standard Specifications.

A. DESCRIPTION

Work consists of constructing block pavers on granular setting bed at furnishing and planting areas in sidewalk as indicated in the contract documents. The exact pattern, block size, color, and construction details shall be as indicated in the contract drawings and this special provision.

Before proceeding with the work, the Contractor shall submit full size sample pavers for approval by the COTR. The sample submitted shall be of production type and shall represent color and minimum quality of finish to be furnished by the manufacturer. Downgrading of quality demonstrated by samples shall be cause for rejection of work.

Coordination with S.P. No. 44 Trees, Shrubs, Vines, and Groundcover of these special provisions is required. Planting soil mix under the granular setting bed is covered in Section 51.

B MATERIALS

Materials shall conform to section 806.02 and meet the following requirements:

1. COBBLESTONES PAVERS

- (a) Sizes: 4" x 4" x 4" (used as surface treatment on furnishing and planting zone – Gray cube cobblestone). Paid under Item No. 600 014.

10" x 7" x 4" (used as edging around trees – Gray jumbo cobblestone)

Paid under Item No. 600 009.

(b) Color: Submit physical samples of manufacturer's full range of colors for final approval.

(c) Manufacturer: Stoneyard or approved equal.

2. GRANULAR BASE – Granular base shall be composed of two separate layers of different sized stone.

(a) Setting Bed and stone within paver joints – Granular base shall be crushed stone in conformance with section 805.03, No. 9 or AS No. 10 as indicated in the Drawings. Stones to be placed between pavers shall reach to the top surface of the pavers and, in case of settling, shall be topped until final acceptance is reached.

(b) Granular base shall be crushed stone in conformance with section 805.03, No. 57 stone free of debris. Crushed stone shall be placed over filter fabric geotextile and uniformly graded to a smooth surface, free of irregular surface changes to required cross sections and thicknesses shown on drawings. After placement, the coarse aggregate shall be compacted. The Contractor shall replace any geotextile damaged by excessive tamping at no additional cost to the District.

3. GEOTEXTILE FABRIC MEMBRANE - Contractor shall furnish and install geotextile fabric as shown in drawings. Install geotextile on prepared base free of mud, frost, snow, or ice in planting areas according to manufacturer's written instructions, overlapping sides and ends. Cut fabric with sharp utility knife or scissors but do not tear. Fabric shall not be visible once granular base is placed.

A 3.5 oz/sy nonwoven needle punched geotextile made of 100% polypropylene staple filaments shall be used for tree planting areas. The product shall meet the following requirements:

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PROPERTY	TEST METHOD	ENGLISH	METRIC
Tensile Strength	ASTM D-4632	90 lbs	401 N
Elongation @ Break	ASTM D-4632	50 %	50 %
Mullen Burst	ASTM D-3786	185 psi	1275 kPa
Puncture Strength	ASTM D-4833	55 lbs	245 N
Trapezoidal Tear	ASTM D-4533	40 lbs	178 N
Apparent Opening Size	ASTM D-4751	70 US Sieve	0.212 mm
Permittivity	ASTM D-4491	2.00 Sec ⁻¹	2.00 Sec ⁻¹
UV Resistance, % Retained	ASTM D-4355	70%	70%
Flow Rate	ASTM D-4491	150 gal/min/sf	6110 l/min.m ²

S
SETTING BED

(a) Install granular setting bed over geotextile fabric firmly in place and secure over

Specification Changes

tamped planting soil. Depth of crushed stone must be set carefully to bring the pavers, when laid, to proper grade. The thickness shall be adjusted, so that when the block pavers are placed, the top surface of the pavers will be at the required finished grade. Thickness of the setting bed shall be no more than 6" or less than 4".

- (b) Install planting soil mix over filter fabric geotextile after excavation of continuous tree planting is completed. Tree planting trench must be approved by Chief Engineer before filter fabric and planting soil are installed. Install planting soil in 6 inch lifts and tamp each lift firmly with the sole of the boots.

LAYING BLOCK.

Upon prepared setting bed the block pavers shall be laid in successive courses with the better face side upward. Do not use unit pavers with chips, cracks, voids, or other structural visible defects. Cut unit pavers with motor-driven saw equipment to provide clean, sharp, unchipped edges and to provide pattern indicated in the drawings and to fit adjoining work neatly. Use full units without cutting wherever possible.

Every course of block shall be carefully placed by hand in straight courses with butt tight joints, maintaining accurate alignment, and a uniform top surface. Butt tight joints shall be paver vertical surfaces touching each other. No course shall deviate from a straight line more than 2 inches in 30 feet. The pavers shall be installed not to exceed 1/16" unit-to-unit offset from flush. The maximum tolerance is 1/8" in 2 feet and 1/4" in 10 feet from level or slope of finished surface of paving. Block laying shall take place in a continuous sequence and shall follow the completion of the bedding within 50 feet.

Immediately after laying the pavers, the surface shall be inspected and approved by Chief Engineer. Block pavers, which are broken, chipped, or damaged shall be removed and replaced.

D. MEASURE AND PAYMENT

The unit of measure for furnish and set Pavers on Granular Base will be-as follows:

1. Cube cobblestone 4" x 4" x 4" the square yard.
2. Jumbo cobblestone 10" x 7" x 4" the linear foot

Payment will be made at the respective contract unit price per square yard or linear foot. Payment will include furnishing and placing pavers for new construction, geotextile fabric membrane, and granular base, and all labor, tools, equipment and incidentals necessary to complete the work. At tree planting areas within and including the jumbo cobblestone edging the granular base and the geotextile fabric membrane shall not be required unless shown in the drawings for existing trees to remain.

41. GRANITE PAVERS (STONE PAVERS ON CONCRETE BASE)Item No. 609 993

Specification Changes

*Reconstruction of Benning Road NE
From 14th & H Street to Oklahoma Avenue*

This S.P. supplements Section 609 of Standard Specifications.

A. DESCRIPTION

The work included in this section includes the furnishing of fully fabricated granite components required for the completion of all stone pavers on concrete base near the plaza fountain as indicated by the contract drawings and/or specifications.

B. SUBMITTALS

The Contractor will provide samples of each granite type. The approval will be for color, grain, texture and finish. All granite shall be obtained from quarries having adequate capacity and facilities to meet the specified requirements. Cutting and finishing shall be done by a firm equipped to process the material promptly on order and in strict accord with specifications. Evidence to this effect shall be provided by the supplier if required by the Architect.

C. MATERIALS

Granite for paving as shown in drawings:

1. Kenoran Sage with a Thermal finish as produced by Cold Spring Granite, 202 S. 3rd Avenue, Cold Spring, MN 56320, or approved equal. All granite shall be of standard architectural grade, free of cracks, seams, or starts which may impair its structural integrity or function. Color or other visual characteristics indigenous to the particular material and adequately demonstrated in the sampling or mock-up phases will be accepted provided they do not compromise the structural or durability capabilities of the material. Texture and finish shall be within the range of samples approved by the Architect.

D. SHOP DRAWINGS

Shop drawings shall show all bedding, bonding, jointing and anchoring details, and the dimensions and identifying number of each piece of granite. No final sizing or finishing shall be done until the shop drawings for that part of the work have been approved.

E. DEFECTIVE WORK

Any piece of granite showing flaws or imperfections upon receipt at the storage yard or building site shall be referred to the Architect for determination as to whether it shall be rejected, patched or redressed for use.

F. FABRICATION

1. Bed and joint surfaces shall be sawn through the full thickness of the granite piece. Bed and joint surfaces shall be within $\pm 3\%$ of 90-degrees to the face of the piece unless otherwise indicated on the contract drawings.
2. Backs of all pieces shall be sawn to approximately true planes.
3. Panels in excess of 100 pounds (45 kg) may include lifting clamp dimples, Lewis holes, or other provisions as required to accommodate the lifting device(s) utilized by the installing contractor. Lifting holes in the visible face will not be permitted.

G. SHIPPING AND HANDLING

1. Granite shall be shop cleaned at the time of final fabrication. After installation and pointing or caulking are completed, the contractor shall carefully clean the granite, removing all dirt, excess mortar, weld splatter, stains, and/or other site incident defacements.
2. Finished granite shall be carefully packed and loaded for shipment using all reasonable and customary precautions against damage in transit. No material which may cause staining or discoloration shall be used for blocking or packing.
3. Upon receipt at the building site or storage yard, the granite shall be stacked on timber or platforms at least 3" above the ground, and extreme care shall be taken to prevent staining during storage. If storage is to be for a prolonged period, polyethylene or other suitable plastic film shall be placed between any wood and finished surfaces, and shall be used also as an overall protective covering. All holes shall be plugged during freezing weather to prevent the accumulation of water. Salt shall not be used for melting of ice formed in Lewis holes or on pieces, or for any purpose involving its contact with the granite.

H. PROTECTION OF FINISHED WORK

After the granite work is installed, it shall be the responsibility of the General Contractor to see that it is properly and adequately protected from damage. Boxing or other suitable protection shall be provided wherever required, but no lumber which may stain or deface the granite shall be used. All nails used shall be non-corrosive. All granite work in progress shall be protected at all times during construction by use of a suitable strong, impervious film or fabric securely held in place.

I. MEASURE AND PAYMENT

The unit of measure for furnishing and setting granite paving will be the square foot. The number of square feet will be the actual number of square feet set as measured complete in place. All stone for payment under this item shall be furnished by the Contractor.

Specification Changes

*Reconstruction of Benning Road NE
From 14th & H Street to Oklahoma Avenue*

The unit of payment for granite paving will be the square foot. Payment will be made at the contract price per square foot, which payment will include furnishing all material, labor, tools, equipment and incidentals to complete the work as described. This payment will include furnishing, hauling, and placing all materials. Payment will include all labor, materials, tools, equipment and incidentals necessary to complete the work.

44. TREE PROTECTION Item No. 600 006

This work shall be performed according to the applicable provisions in Section 611 of the DDOT Standard Provisions.

This Special Provision supplements 611.07 of the Standard Specifications.

A. DESCRIPTION

Work consists of protection fencing of tree as indicated in the drawings. Before proceeding with the work, the Contractor shall submit a sample of Mycorrhizal Fungal Inoculation for approval by the Chief Engineer.

B. METHOD AND MATERIALS

Materials shall meet the following requirements:

Temporary Chain-Link Fence: Metallic-coated steel chain-link fence fabric of 0.120-inch diameter wire; a minimum of 72 inches high; with 1.9-inch diameter line posts; 2-3/8-inch diameter terminal and corner posts; and 0.177-inch diameter bottom and top tension wire; with tie wires, hog ring ties, and other accessories for a complete fence system.

Filter Fabric: Manufacturer's standard, nonwoven, pervious, geotextile fabric of polypropylene, nylon, or polyester fibers. Filter Fabric shall be placed and secured along the bottom inside of the fence to hold the organic mulch.

Organic Mulch: Shredded hardwood free of deleterious materials. Install a minimum of three inches layer of continuous bed.

Mycorrhizal Fungal Inoculation shall be applied before and after construction as recommended by manufacturer for each tree to be saved.

C. MEASURE AND PAYMENT

The unit of measurement for Tree Protection will be each. Payment will be made at the contract unit price per each tree protected, which payment will include temporary fence, filter fabric, mulch, mycorrhizal fungal inoculation, and all labor, tools, materials, equipment and incidentals to complete the required work.

Trees to be salvaged and are damaged by the Contractor's operation shall be replaced in kind by the Contractor at no additional cost to the District, or by payment in liquidated damages per schedule in 611.07(B)(4).

45. SITE FURNISHING

A. DESCRIPTION

1. This Section includes the following:
 - a. Benches
 - b. Trash Receptacles
 - c. Bike Racks
 - d. Pedestal Game tables (Precast Concrete Furnishing)

B. SUBMITTALS

1. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, finishes, field-assembly requirements, and installation details for Chief Engineer approval.
2. Samples for Initial Selection: For units with factory-applied color finishes.
3. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below.
 - a. Size: Not less than 6-inch long linear components and 4-inch square sheet components.
4. Product Schedule: For site furnishings. Use same designations indicated on Drawings.
5. Maintenance Data: For site furnishings to include in maintenance manuals.

C. EXTRA MATERIALS

1. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - a. Bench Replacement aluminum slats: No fewer than 10 full-size units for each size indicated.
 - b. Trash Receptacle Inner Containers: Full-size units equal to 5 percent of amount installed for each size indicated, but no fewer than 3 units.
 - c. Anchors as required by manufacturer.

D. MANUFACTURERS

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
2. Products: Subject to compliance with requirements, provide one of the following or approved equal:
 - a. Benches:
Landscapeforms – Plainwell Bench or approved equal – Aluminum seating. Size: 25" deep x 32" high x 73-1/4" long with one center arm. Dimensions: as shown in Drawings. Recycled material content of at least 35%. Powder Coated. Color: Black. Powder coat specifications as follows:

Gloss according to Garner 60 deg. ASTM D 523: 80-90

Cross hatch adhesion ASTM D 3359 method B: pass 100%
Mandrel bending test ASTM D 522: 1/8"/3 mm

Erichsen cupping ISO 1520:	5/16"/8 mm
Impression hardness according to Buchholz ISO 2215:95	
Impact test ASTM D 2794-90:	1/10" distortion up to 160 in/lb
Pencil hardness ASTM D 3363-74:	2H (min.)
Drill mill tests:	ok
Saltspray Resistance 1500 hr test, ASTM B 117:	max. undercutting 1/16"/1 mm
Humidity Resistance 1500 hr test, ASTM D 2247-68:	max. blisters 1/16"/1 mm

Contact Information:
Landscape Forms, Inc.
431 Lawndale Avenue
Kalamazoo, MI 49048
Phone: 800.521.2546

- b. Trash Receptacles:
Victor Stanley – Ironsites Series – SDDC-42 or approved equal. 36 gallon capacity. Side door opening with Olite bronze bearings and stainless steel pivot pins and standard ¼' solid steel latch assembly. 16 gauge plate cover. S-2ASD formed dome lid. 3 Anchor bolt assembly. All fabricated metal components to be steel shotblasted, etched, phosphatized, preheated, and electrostatically powder coated to a resulting thickness averaging between 8-10 mils. Color: Black. Dimensions: as shown in Drawings.

Contact Information:
Victor Stanley, Inc.
P.O. Drawer 330
Dunkirk, MO 20754
Phone: 800.368.2573

- c. Bike Rack:
 1. 1. X-Type bicycle racks shall be 3 or 4 sided as manufactured by Trees New York, New York, NY, or approved equal, made of 2" schedule 40 galvanized steel pipe. Steel pipe pieces shall be welded together to form one piece before shipped from manufacturer. Dimensions shall be as shown in the contract drawings. Powder coating shall be color black.
 2. 2. U-shaped bicycle racks shall be Palmer Group, WSH3602-SQ-IG-P in ground as manufactured by Bike Parking, palmer Group, San Francisco, CA or approved equal, made of 2-3/8" schedule 40 galvanized steel pipe. Steel pipe pieces shall be welded together to form one piece before shipped from manufacturer. Dimensions shall be as shown in the contract drawings. Powder coating shall be color black.

- d. Pedestal Game Tables (Precast Concrete Furniture):

Complete with 3 stools and checkerboard pattern installed into top surface of table. Dimensions as shown in contract drawings:

Base finish: EX8, top finish: SB7, Item T6900

Contact Information:

Doty & Sons Concrete Products, Inc.

1275 East State Street,

Sycamore, IL 60178

Phone: 1.800.233.3907

E. MATERIALS

- 1 Materials and finishes shall comply with manufacturer's specifications.

F. EXAMINATION

- 1 Chief Engineer shall examine areas and conditions, with Installer present, for compliance with requirements for correct and level finished grade, mounting surfaces, installation tolerances, and other conditions affecting performance.
- 2 Proceed with installation only after unsatisfactory conditions have been corrected.

G. INSTALLATION, GENERAL

- 1 Comply with manufacturer's written installation instructions, unless more stringent requirements are indicated. Complete field assembly of site and street furnishings, where required.
- 2 Unless otherwise indicated, install site and street furnishings after landscaping and paving have been completed.
- 3 Install site and street furnishings level, plumb, true, and securely anchored at locations indicated on Drawings.
- 4 Post Setting: Set cast-in support posts in concrete footing with smooth top, shaped to shed water. Protect portion of posts above footing from concrete splatter. Verify that posts are set plumb or at correct angle and are aligned and at correct height and spacing. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.
- 5 Posts Set into Voids in Concrete: Form or core-drill holes for installing posts in concrete to depth recommended in writing by manufacturer of site and street furnishings and 3/4 inch than OD of post. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions, with top smoothed and shaped to shed water.
- 6 Pipe Sleeves: Use steel pipe sleeves preset and anchored into concrete for installing posts. After posts have been inserted into sleeves, fill annular space between post and sleeve with nonshrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions, with top smoothed and shaped to shed water.

H. CLEANING

- 1 After completing site and street furnishing installation, inspect components. Remove spots, dirt, and debris. Repair damaged finishes to match original finish or replace component.

I. MEASURE AND PAYMENT

Specification Changes

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Reconstruction of Benning Road NE

From 14th & H Street to Oklahoma Avenue

1. The unit of Measure for Site Furnishings shall be each. The number shall be the actual number of items of Site Furnishings measured complete in place.
2. Payment shall be made at the respective contract price for each unit.

Payment will include furnishing and installing each item complete in place in accordance with this specification.

56. PRECAST CONCRETE PANELS, Item 600 013.

This S.P. supplement 601 INCIDENTAL CONCRETE CONSTRUCTION

Add the following:

1.2 The work under this section includes the furnishing and installation of precast concrete panels to the concrete retaining wall in the plaza as shown in the Drawings.

SUBMITTALS

Working Drawings

The Contractor shall prepare and submit to the Chief Engineer working drawings showing the individual units in position, their face dimensions, designating marks, and such other detail drawings as are necessary to properly form and set the work. The drawings shall show all anchors, cramps and dowels.

Samples and Sample Wall

- (1) **Vertical concrete unit samples and capstones.** Before proceeding with the work, the contractor shall submit for approval by the Chief Engineer samples of prestressed concrete units proposed for use in the work. All units in the work shall be within the color range defined by the approved samples. The samples shall have a face size of at least 6 by 6 inches. Vertical surfaces other than the fountain piers shall match color and texture of Granite: Kenoran Sage (708002 STONE MASONRY) when surface is dry to the satisfaction of the COTR. All surfaces for the fountain piers shall match color and texture of Granite: Mesabi Black (708002 STONE MASONRY) when surface is dry to the satisfaction of the COTR.
- (2) **Sample Wall.** The contractor will be required to construct a sample wall of the designated class or classes of prestressed concrete units, laid up in mortar and pointed, for approval of the Chief Engineer. Each sample shall show examples of the specified unit finishes, quality of the workmanship in dressing the units and placing them, and pointing of the beads and joints, and shall be sufficient area to illustrate the distribution of both the coloring and the unit size. The sample wall shall contain at least one edge dressed to show a representative corner. The top shall be dressed to show how the units will abut the wall. Upon approval of such a sample by the Chief Engineer, it shall become the standard for that class or classes of pressed concrete units in the

entire work. The size of unit sample wall shall be decided upon by the Chief Engineer.

Payment. At the option of the Contractor, this wall may be constructed in place as part of the prestressed concrete unit called for in the contract documents and if approved, the sample wall shall become part of the completed work and will be paid for as specified herein for the designated class or classes of units.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: A precast concrete erector qualified and designated by PCI's Certificate of Compliance to erect panels.
- B. Installer Qualifications: A precast concrete erector who has retained a "PCI-Certified Field Auditor" to conduct a field audit of a project in same category as this Project before erection of precast concrete and who can produce an Erectors' Post-Audit Declaration.
- C. Fabricator Qualifications: A firm that assumes responsibility for engineering architectural precast concrete units to comply with performance requirements. This responsibility includes preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer.
- D. Design Standards: Comply with ACI 318 and design recommendations of PCI MNL 120, "PCI Design Handbook - Precast and Prestressed Concrete," applicable to types of architectural precast concrete units indicated.
- E. Quality-Control Standard: For manufacturing procedures and testing requirements, quality-control recommendations, and dimensional tolerances for types of units required, comply with PCI MNL 117, "Manual for Quality Control for Plants and Production of Architectural Precast Concrete Products."

DELIVERY, STORAGE, AND HANDLING

- A. Deliver architectural precast concrete units in such quantities and at such times to limit unloading units temporarily on the ground.
- B. Support units during shipment on nonstaining shock-absorbing material.
- C. Store units with adequate dunnage and bracing and protect units to prevent contact with soil, to prevent staining, and to prevent cracking, distortion, warping or other physical damage.
- D. Place stored units so identification marks are clearly visible, and units can be inspected.
- E. Handle and transport units in a position consistent with their shape and design in order to avoid excessive stresses which would cause cracking or damage.
- F. Lift and support units only at designated points shown on Shop Drawings.

MOLD MATERIALS

- A. Molds: Rigid, dimensionally stable, non-absorptive material, warp and buckle free, that will provide continuous and true precast concrete surfaces within fabrication tolerances indicated; nonreactive with concrete and suitable for producing required finishes.
 - 1. Mold-Release Agent: Commercially produced liquid-release agent that will not bond with, stain or adversely affect precast concrete surfaces and will not impair subsequent surface or joint treatments of precast concrete.
- B. Surface Retarder: Chemical set retarder, capable of temporarily delaying final hardening of newly placed concrete mixture to depth of reveal specified.

CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150, Type I or Type III, gray, unless otherwise indicated.
 - 1. For surfaces exposed to view in finished structure, mix gray with white cement, of same type, brand, and mill source.
- B. Supplementary Cementitious Materials:
 - 1. Metakaolin Admixture: ASTM C 618, Class N.
 - 2. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- C. Normal-Weight Aggregates: Except as modified by PCI MNL 117, ASTM C 33, with coarse aggregates complying with Class 5S. Stockpile fine and coarse aggregates for each type of exposed finish from a single source (pit or quarry) for Project.
 - 1. Face-Mixture-Coarse Aggregates: Selected, hard, and durable; free of material that reacts with cement or causes staining; to match selected finish sample.
- D. Coloring Admixture: ASTM C 979, synthetic or natural mineral-oxide pigments or colored water-reducing admixtures, temperature stable, and nonfading.
- E. Water: Potable; free from deleterious material that may affect color stability, setting, or strength of concrete and complying with chemical limits of PCI MNL 117.
- F. Air-Entraining Admixture: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.
- G. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and to not contain calcium chloride, or more than 0.15 percent chloride ions or other salts by weight of admixture.
 - 1. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.

2. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.

GROUT MATERIALS

- A. Sand-Cement Grout: Portland cement, ASTM C 150, Type I, and clean, natural sand, ASTM C 144 or ASTM C 404. Mix at ratio of 1 part cement to 2-1/2 parts sand, by volume, with minimum water required for placement and hydration.
- B. Nonmetallic, Nonshrink Grout: Premixed, nonmetallic, noncorrosive, nonstaining grout containing selected silica sands, portland cement, shrinkage-compensating agents, plasticizing and water-reducing agents, complying with ASTM C 1107, Grade A for drypack and Grades B and C for flowable grout and of consistency suitable for application within a 30-minute working time.
- C. Epoxy-Resin Grout: Two-component, mineral-filled epoxy resin; ASTM C 881/C 881M, of type, grade, and class to suit requirements.

CONCRETE MIXTURES

- A. Prepare design mixtures for each type of precast concrete required.
- B. Design mixtures may be prepared by a qualified independent testing agency or by qualified precast plant personnel at architectural precast concrete fabricator's option.
- C. Limit water-soluble chloride ions to maximum percentage by weight of cement permitted by ACI 318 or PCI MNL 117 when tested according to ASTM C 1218/C 1218M.
- D. Normal-Weight Concrete Mixtures: Proportion face and backup mixtures by either laboratory trial batch or field test data methods according to ACI 211.1, with materials to be used on Project, to provide normal-weight concrete with the following properties:
 1. Compressive Strength (28 Days): 5000 psi minimum.
 2. Maximum Water-Cementitious Materials Ratio: 0.45.
- E. Water Absorption: 6 percent by weight or 14 percent by volume, tested according to PCI MNL 117.
- F. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content complying with PCI MNL 117.
- G. When included in design mixtures, add other admixtures to concrete mixtures according to manufacturer's written instructions.

MOLD FABRICATION

- A. Molds: Accurately construct molds, mortar tight, of sufficient strength to withstand pressures due to concrete-placement operations and temperature changes and for prestressing and detensioning operations. Coat contact surfaces

of molds with release agent before reinforcement is placed. Avoid contamination of reinforcement and prestressing tendons by release agent.

- B. Maintain molds to provide completed architectural precast concrete units of shapes, lines, and dimensions indicated, within fabrication tolerances specified.
 - 1. Form joints are not permitted on faces exposed to view in the finished work.

FABRICATION TOLERANCES

Fabricate architectural precast concrete units straight and true to size and shape with exposed edges and corners precise and true so each finished panel complies with PCI MNL 117 product tolerances as well as position tolerances for cast-in items shown in the Drawings.

FINISHES

Panel faces shall be free of joint marks, grain, and other obvious defects. Corners, including false joints shall be uniform, straight, and sharp. Finish exposed-face surfaces of architectural precast concrete units to match approved panels.

SOURCE QUALITY CONTROL

Quality-Control Testing: Test and inspect precast concrete according to PCI MNL 117 requirements. If using self-consolidating concrete, also test and inspect according to PCI TR-6, "Interim Guidelines for the Use of Self-Consolidating Concrete in Precast/Prestressed Concrete Institute Member Plants."

EXAMINATION

- A. Examine supporting structural frame or foundation and conditions for compliance with requirements for installation tolerances, true and level bearing surfaces, and other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. Do not install precast concrete units until supporting cast-in-place structural framing has attained minimum allowable design compressive strength or supporting steel or other structure is complete.

INSTALLATION

- A. Install clips, hangers, bearing pads, and other accessories required for connecting architectural precast concrete units to supporting members and backup materials.
- B. Erect architectural precast concrete level, plumb, and square within specified allowable tolerances. Provide temporary supports and bracing as required to maintain position, stability, and alignment as units are being permanently connected.
 - 1. Install temporary steel or plastic spacing shims or bearing pads as precast concrete units are being erected. Tack weld steel shims to each other to prevent shims from separating.

2. Maintain horizontal and vertical joint alignment and uniform joint width as erection progresses.
 3. Remove projecting lifting devices and grout fill voids within recessed lifting devices flush with surface of adjacent precast surfaces when recess is exposed.
 4. Unless otherwise indicated, maintain uniform joint widths of 3/4 inches.
- C. Connect architectural precast concrete units in position by bolting, welding, grouting, or as otherwise indicated on Shop Drawings. Remove temporary shims, wedges, and spacers as soon as practical after connecting and grouting are completed.
1. Do not permit connections to disrupt continuity of roof flashing.
- D. Welding: Comply with applicable AWS D1.1/D1.1M and AWS D1.4 for welding, welding electrodes, appearance, quality of welds, and methods used in correcting welding work.
1. Protect architectural precast concrete units and bearing pads from damage by field welding or cutting operations, and provide noncombustible shields as required.
 2. Welds not specified shall be continuous fillet welds, using no less than the minimum fillet as specified by AWS.
 3. Clean weld-affected metal surfaces with chipping hammer followed by brushing, and apply a minimum 4.0-mil- thick coat of galvanized repair paint to galvanized surfaces according to ASTM A 780.
 4. Remove, reweld, or repair incomplete and defective welds.
- E. At bolted connections, use lock washers, tack welding, or other approved means to prevent loosening of nuts after final adjustment.
1. Where slotted connections are used, verify bolt position and tightness. For sliding connections, properly secure bolt but allow bolt to move within connection slot. For friction connections, apply specified bolt torque and check 25 percent of bolts at random by calibrated torque wrench.
- F. Grouting Connections: Grout connections where required or indicated. Retain grout in place until hard enough to support itself. Pack spaces with stiff grout material, tamping until voids are completely filled. Place grout to finish smooth, level, and plumb with adjacent concrete surfaces. Keep grouted joints damp for not less than 24 hours after initial set. Promptly remove grout material from exposed surfaces before it affects finishes or hardens.

ERECTION TOLERANCES

Erect architectural precast concrete units level, plumb, square, true, and in alignment without exceeding the noncumulative erection tolerances of PCI MNL 117, Appendix I.

FIELD QUALITY CONTROL

Specification Changes

*Reconstruction of Benning Road NE
From 14th & H Street to Oklahoma Avenue*

- A. Special Inspections: Engage a qualified special inspector to perform the following special inspections and prepare reports:
 1. Erection of precast concrete members.
- B. Field welds will be subject to visual inspections and nondestructive testing according to ASTM E 165 or ASTM E 709. High-strength bolted connections will be subject to inspections.
- C. Testing agency will report test results promptly and in writing to Contractor.
- D. Repair or remove and replace work where tests and inspections indicate that it does not comply with specified requirements.
- E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

REPAIRS

Repair architectural precast concrete units if permitted by Owner. The Owner reserves the right to reject repaired units that do not comply with requirements.

Mix patching materials and repair units so cured patches blend with color, texture, and uniformity of adjacent exposed surfaces and show no apparent line of demarcation between original and repaired work, when viewed in typical daylight illumination from a distance of 20 feet.

Prepare and repair damaged galvanized coatings with galvanizing repair paint according to ASTM A 780.

Wire brush, clean, and paint damaged prime-painted components with same type of shop primer.

Remove and replace damaged architectural precast concrete units when repairs do not comply with requirements.

CLEANING

Clean surfaces of precast concrete units exposed to view.

Clean mortar, plaster, fireproofing, weld slag, and other deleterious material from concrete surfaces and adjacent materials immediately.

Clean exposed surfaces of precast concrete units after erection and completion of joint treatment to remove weld marks, other markings, dirt, and stains.

- Perform cleaning procedures, if necessary, according to precast concrete fabricator's recommendations. Clean soiled precast concrete surfaces with detergent and water, using stiff fiber brushes and sponges, and rinse with clean water. Protect other work from staining or damage due to cleaning operations.
Do not use cleaning materials or processes that could change the appearance of exposed concrete finishes or damage adjacent materials.

57. STONE MASONRY

This S.P. supplements 708 STONE MASONRY

Add the following under 708.01 GENERAL:

The work under this section includes the furnishing and installation of stone masonry (granite components) to the concrete retaining wall and fountain wall in the plaza.

The Contractor shall coordinate this work with the installation of the Art Mural provided by the Owner. See Coordination with Art Mural Contractor: Item 600006 Coordination with Art Mural Contractor in these specifications.

Add the following under 708.03 WORKING DRAWINGS AND SUPPLY (B)

SUPPLY:

Stone masonry shall be from:
Cold Spring Granite
202 South Third Avenue
Cold Spring, MN 56320-2593
Phone: 1.800.328.5040

Granite for veneer panels, stone base beneath mural, fence slab shall be:

Granite: Kenoran Sage
Finish: Thermal
Dimension: As shown in Drawings

Granite for fountain weir and support blocks shall be:

Granite: Mesabi Black
Finish: Seam Face
Dimensions: As shown in Drawings

Add the following under 708.05 CLASSES OF STONE MASONRY Class A:

All Classes of Stone Masonry shall be Class A.

Add the following under 708.07 FINISH FOR EXPOSED FACES (D) Sawn:

Stone for veneer, capstones and slabs shall be sawn.

Add the following under 708.07 FINISH FOR EXPOSED FACES (F) Seam Face:

Stone for weir shall be seam face.

APPENDIX D-R

STREETCAR SPECIAL PROVISIONS (SPs)

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1. TRACK DRAINS (Item No 314991 and 310012)

This SP modifies section 314 of the DDOT Standard Specification

A. MATERIALS

Add the following to paragraph 314.03 Materials

“High Density Polyethylene Pipe

Add the following to section 314.04

- (a) The contractor will establish centerline and grade control.
- (b) When connecting to PVC pipe, connect PCC pipe to PVC pipe with watertight flexible couplers.

Modify section 314.05 as such: Delete all references to depth measurements.

Add the following pay items:

<u>Pay Item</u>	<u>Unit of Measurement</u>
Furnish & Install Basin Connect PCC pipe, Class IV, 15 Inch Diameter (Item No 310012)	LF

Payment for track drain and inlet leads will be full payment for the drainage pipe work complete including trench excavation, bedding, backfill, saw cutting, connections, clean outs, grouting, and compaction. The length shall be measured from center of manhole to the center of track drain.

2. OCS POLE FOUNDATIONS (Item No 618992)

This special provision , which is not in the Standard Specifications, is included for this project by Special Provision.

A. DESCRIPTION - The work covered by this specification shall include the furnishing of all labor, equipment, tools, services and materials for complete and proper installation of OCS pole foundations as indicated on the Plans. This work includes, but is not limited to the following:

- (a) Provide surveying and field layouts necessary for the correct location of the pole foundations.
- (b) Verify existing public and private utilities are not in horizontal or vertical conflict with proposed foundation locations.

- (c) Provide and install steel reinforcement, conduit for feeder risers, anchoring and grounding devices within the foundations, including anchor bolt nuts and washers above the foundation.
- (d) Excavate the foundations and install cast-in-place concrete, but not to include lean concrete above the top of pole foundation.
- (e) Clean up the work areas after completion of each foundation.

B. REFERENCES - The following reference specifications shall also govern the work covered by this section unless otherwise noted and detailed:

<u>Sponsor</u>	<u>Number</u>	<u>Subject</u>
AISC	---	Manual of Steel Construction, Code of Standard Practice for Buildings and Steel Bridges
ASTM	A36	Structural Steel
ASTM	A123	Zinc Coating (Hot-Dip Galvanized) on Iron and Steel Products
ASTM	A153	Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM	A252	Welded and Seamless Steel Pipe
ASTM	A615	Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
ACI	ACI-305	Recommended Practice for Hot Weather Concreting
ACI	ACI-306	Recommended practice for Cold Weather Concreting
AASHTO	M232	Specification for Zinc Coating (Hot-Dip Galvanized) on Iron and Steel Hardware
AASHTO	M291	Specification for Carbon and Steel Nuts
AASHTO	M293	Specification for hardened Steel Washer
AASHTO	M314	Specification for Steel Bolts and Studs
AWS	D1.1	Structural Welding Code
DDOT		Standard Specifications for Highways and Structures

C. RELATED SECTIONS

- (a) SP-6 – TRACTION ELECTRIFICATION Electrical.

D. SUBMITTALS - Submit the following for approval in accordance with DDOT Section 104.03 In addition to the items below modified herein.

- (a) The District pre-qualified concrete mix design.
- (b) Shop Drawings for reinforcement and anchor bolt embeds.
- (c) Certificates and Test Reports.
- (d) Written description of construction procedures, material used, product data (including reinforcement centering device) loose soils procedure, dewatering, and equipment for drilling the foundation.

E. QUALITY CONTROL

- (a) Contractor shall employ sufficient personnel skilled and experienced to properly perform the work of this section, and shall use adequate equipment.
- (b) Contractor shall perform the following in accordance with the requirements of the Contractor's Quality Control Program as approved by the Project Manager.
 - h Material qualification testing and mill certification for acceptance.
 - h Preparing and testing concrete cylinders per Standard Construction Specifications.
 - h Job control testing of in-progress work in shops and continuous field inspection.

F. DELIVERY, STORAGE, AND HANDLING - Materials shall be delivered to the site in undamaged condition and stored off the ground in a well drained location, protected from damage, and easily accessible for inspection and handling.

G. PROJECT CONDITIONS - Comply with ACI-305 and ACI-306 during hot and cold weather conditions.

H. CONCRETE

- (a) Concrete mix and design shall conform to the Standard Construction Specifications.
- (b) Concrete for pole foundations shall be Class B, with a maximum compressive strength of 4500 PSI at 28 days.
- (c) Concrete between top of pole foundation and finish grade (min. 5" deep) shall be Class C, with a maximum compressive strength of 3000 PSI at twenty-eight (28) days.

I. REINFORCEMENT - Reinforcement shall be deformed bars and cold drawn spiral reinforcement conforming to ASTM A615, Grade 60, and fabricated as shown on the Plans.

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J. ANCHOR BOLTS AND RODS

- (a) Anchor bolts and rods for catenary pole foundations shall conform to AASHTO M-314, Grade 55, anchor bolt nuts shall conform to AASHTO M291, Grade A, heavy hex. Washers shall be hardened steel, conforming to AASHTO M-293.
- (b) Galvanizing of anchor bolts, rods, nuts and washers shall conform to AASHTO M-232.

K. CASING - Temporary casing, where required to maintain augered hole geometry, shall have an outside diameter equal to or greater than the specified diameter of the drilled shaft, and shall have sufficient strength to withstand handling stresses, concrete pressure, and surrounding earth or fluid pressures.

L. GROUNDING RODS - Grounding rods shall be in accordance with SP-6

M. STRUCTURAL STEEL

- (a) Structural steel shall be ASTM A36.
- (b) Shop fabricate in accordance with AISC Code of Standard Practice for Steel Buildings and Bridges in the Manual of Steel Construction.

N. PREPARATION

- (a) After the Contractor has established the location of catenary pole foundations, and prior to starting excavation, a walkout survey shall be conducted by the Project Manager and the Contractor, and any other parties affected by foundation locations, in order to resolve any problems resulting from pole placement in the indicated location.
- (b) Excavation, installation of reinforcement and anchor bolts, and concreting of the foundation shall be scheduled so that each drilled shaft is poured within 12 hours after excavation. The number of foundations left open at the end of a work day shall be kept to a minimum and shall be adequately covered and protected against possible hazards.

O. EXCAVATION

- (a) Drill the pole shafts at locations and to the dimensions and embedment depths indicated on the plans and control them within the specified tolerances.
- (b) Abandoned pipe, concrete, boulders and other obstructions, which extend into the pole shafts and prevent the proper formation of poles shall be removed. Permanent utility lines and piping which are interfered with by the pole shafts shall be brought to the Project Manager's attention. Hand digging excavation for the first 48 inches may be required by the Project Manager for uncertain areas and shall be included in the pay unit of the foundation.
- (c) Blasting, as foundation excavation, shall not be permitted for use on OCS pole, and guy anchor foundations.

- (d) Excavated drilling materials that are surplus shall be removed from job-site and disposed of at no additional cost to The District.
- (e) Temporary casing shells shall be used, where required by the Project Manager, to control ingress of water or prevent caving in of the pole shaft. Cost of this work is incidental to this item.
- (f) Remove all loose material from the bottom of the drilled shafts and dewater as required prior to and during placing of concrete.
- (g) Temporary storage of excavated materials must avoid pollution from water runoff and site plan must be approved by the Project Manager.
- (h) Use of Control Density Fill (CFD) to fill voids is recommended.

P. REINFORCING STEEL, ANCHOR BOLTS AND ELECTRICAL EMBEDS

- (a) Place the reinforcement and install the anchor bolts, grounding rods, and where indicated, cable conduits in the foundations. Reinforcement shall not be spliced.
- (b) Electrical bonding within the reinforcing cages shall be provided as shown on the Plans. Electrical conduits are only required on pole foundations designated Type I and II.
- (c) The reinforcing cage shall be placed symmetrically about the axis of foundations, and shall be securely braced to maintain the minimum clearance of concrete cover as indicated. Maintain reinforcement in clean condition until embedded in concrete.
- (d) The anchor bolt assemblies and grounding rods shall be located and oriented as indicated, within the specified tolerances.
- (e) Prefabricated templates shall be used to securely hold the projecting portion of the anchor bolts in their proper positions.

Q. CONCRETE INSTALLATION

- (a) Install concrete in accordance with The District, Standard Construction Specifications.
- (b) Obtain approval of the reinforcement and anchor bolts installation from the Project Manager immediately prior to placement of the concrete. Concrete shall be placed in one continuous operation for each pole shaft.
- (c) To prevent segregation of concrete, concrete shall be deposited as close as possible to the final position in the foundation and there shall be no vertical drop greater than 60 inch. Place concrete by adjustable pump hose. For on curves less than 500 ft radius the tolerance shall be 24 inches.
- (d) Wherever casing shells are used, they shall be withdrawn as the concrete is placed. An adequate head of concrete shall be maintained above the bottom of the casing to resist the soil and water pressures.

- (e) The top anchor bolt template may be removed from a pole and reused elsewhere two days after the concrete has been placed.
- (f) Oil top of concrete poles where concrete will be poured above top of pole foundation concrete.
- (g) Install centering device at bottom of concrete reinforcement.
- (h) Consolidate concrete per Standard Construction Specifications.

R. ALLOWABLE TOLERANCES

- (a) All concrete foundations shall be constructed in accordance with the tolerances specified in ACI 117.
- (b) Each pole foundation shall be located within 2 inches of its offset dimension, as indicated on the foundation plans or as approved by the Project Manager.
- (c) To avoid local obstructions the along-track positions of pole foundation indicated may be modified by up to 60 inches at the Contractor's expense. Adjacent to special trackwork, the along-track positions of the foundation can only be modified by up to 30 inches. All modifications are subject to prior approval by the Project Manager.
- (d) Axis of the shaft shall not be out of plumb more than one percent of its excavated depth.
- (e) Each pole foundation shall not be less than the designed diameter and length indicated on the plans. If it is greater in size, the foundation shall not interfere with utilities or other work.
- (f) Each anchor bolt shall be located within 1.25 inches of its correct horizontal position and ½degree of true vertical in its anchor bolt assembly, as indicated on the plans.
- (g) Anchor bolt assembly shall be located within 1.5 inches of its correct offset dimension and vertical position, as indicated on the plans. The anchor bolt positions shall be determined relative to the offset dimensions from the vertical and horizontal base lines, or track center line.
- (h) Each anchor bolt assembly shall be located within two degrees of its correct orientation, as indicated on the plans.
- (i) The top of concrete of each foundation shall be within 0.250 inch of its correct elevation, as indicated on the plans.
- (j) Conduit risers shall be installed within + 0.120 inch of position shown on electrical drawings.

S. ADJUSTING AND CLEANING

- (a) Notify the Project Manager after installation of the reinforcement and anchor bolt assembly in each foundation that the installation is ready for inspection. Adjust the reinforcement and anchor bolts as required by the Project Manager.

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- (b) At the conclusion of the foundation work, remove equipment used in the work, and remove all debris, surplus material, and excavated soil from the premises.

T. PROTECTION

- (a) Open pole shafts and incomplete construction shall be covered to prevent hazards.
- (b) Protect projecting and exposed surfaces from damage during entire construction period including conduit risers.
- (c) The anchor bolts shall be protected from damage and prevented from moving during placement and curing of the concrete. Threads projecting above foundation shall be taped.

U. measurement - OCS POLE FOUNDATIONS WILL BE MEASURED BY THE UNIT FOR EACH UNIT SATISFACTORILY INSTALLED.

V. PAYMENT- Payment for the accepted number of OCS pole foundations will be paid at the contract unit price for the type and depth of the OCS pole foundations and guy anchors listed which price will be payment in full for furnishing all labor, materials, tools, equipment, and incidentals, and doing all work necessary to complete the OCS pole foundations including excavation, haul, replacement of all sidewalks, curb and other surface material to its original condition to the satisfaction of the Project Manager. Grounding rods are considered incidental to the work in this section.

- (a) No extra compensation will be made for additional concrete used to fill any oversize excavation created due to Contractor's methods.
- (b) Obstructions found during excavation, with the exception of active utilities, shall be removed at no cost to The District.
- (c) OCS pole foundations I and II include conduit for feeder risers.
- (d) Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Furnish & Install OCS Pole Foundations I (Item No. 618992)	EA
Furnish & Install OCS Pole Foundations II (Item No. 618992)	EA

3. 0.06 in PVC GEOMEMBRANE (Item No. 314 099)

A. DESCRIPTION

- (a) The Contractor shall furnish and install flexible PVC geomembrane in the areas described and shown in the Contract Documents. All work shall be done in strict accordance with the Contract Documents.

- (b) Sufficient PVC geomembrane material shall be furnished to cover the required area where the track slab crosses any CI or DI main and/or service. The PVC geomembrane shall be installed in a relaxed condition and shall be free of tension, stress, or wrinkles upon completion of the installation.

B. SHOP DRAWINGS AND SUBMITTALS

- (a) Manufacturer’s engineering specifications for PVC geomembrane.
- (b) Factory-Installed Seams - Submit results of factory seam testing.

C. QUALITY ASSURANCE

- (a) Inspection of Roll Goods - All roll goods shall be inspected on both sides for unmixed or poorly dispersed ingredients, pin holes, or the presence of contaminants or foreign particles. All defects and impurities shall be removed or repaired before the membrane is installed.
- (b) Inspection and Testing of Factory Seams - The Fabricator shall perform 100 percent continuous visual inspection of each lineal unit of seam as it is produced. Upon discovery of any defective seam, the Fabricator shall stop production of panels used in this work and shall repair the seam and determine and rectify the cause of the defect prior to continuation of the seaming process. A sample shall be taken from each factory seam-welding unit used in this work at the beginning of every work shift and every 4 hours of production thereafter. Test specimens shall be tested for factory seam strength and peel adhesion as specified in Section 16951, “Minimum Factory Seam Requirements.” A log shall be maintained showing the date, time, panel number, and test results and submitted to the Project Manager.

Panels that have been delivered to the project site shall be stored in their original unopened containers in a dry area and protected from the direct heat of the sun. Pallets shall not be stacked.

D. MATERIALS FURNISHED BY THE CONTRACTOR

- (a) The liner material shall have the minimum property values shown in the following table.

PVC GEOMEMBRANE PHYSICAL PROPERTIES

Property	Test Method	Test Value
Thickness, (mils) (Normal ± 5%)	ASTM D-1593	60 mils (0.059 inch)*
Dielectric Strength (V/mil) (Short time, 3 mm thk)	ASTM D-149	300 V/mil (3 inches)

Minimum Tensile Prop (lbs., min)	ASTM D-882	
1. Breaking Factor	Method A or B (25 mm wide)	62.6 Kg/0.98 inch width
2. Elongation at break	Method A or B	450%
3. Modulus at 100% elongation	Method A or B	24.5 Kg/ 0.98 inch width
Tear Resistance	ASTM D-1004	14.0 Lbs
Low Temperature	ASTM D 1004	-47.78 degrees F
Dimensional Stability (Each direction)	ASTM D 1204 212 degrees F, 15 min.	5 percent, max
Hydrostatic Resistance (KPa in min)	ASTM D 751 Method A	1,050 KPa

*Contractor may use two layers of 40 mil PVC geomembrane.

MINIMUM FACTORY SEAM REQUIREMENTS

Bonded Seam Strength (Factory seam breaking strength, Kg/mm width)	ASTM D-3083 (as modified by NSF Standard 54)	110 Lbs/inch width
Peel Adhesion (Kg/mm width)	ASTM D 413 (as modified by NSF Standard 54)	Lbs/inch width

(b) Fabrication - The individual widths of PVC geomembrane shall be factory fabricated for this project to minimize field seaming. All factory seams shall provide a bond between the sheets sufficiently strong to meet the test requirements of these Specifications. The seam shall be a nominal 50 mm wide continuous bond. All factory seams shall provide a bond between sheets sufficiently strong that failure of the seam will not occur at the bonded surface. Fishmouths, pleats, folds, and similar defects will not be permitted in any seam.

E. GENERAL

- (a) The Contractor shall inform the Project Manager when field conditions, such as weather, temperature, excessive moisture, etc., are present which could adversely affect the installation of the PVC geomembrane.
- (b) The Contractor shall mark pipe crossings where the PVC geomembrane will be installed and the Project Manager shall review and approve said areas.
 - (1) The Contractor shall compact crushed rock base material to required compaction and remove excess crushed rock materials.
 - (2) The Contractor shall place forms for the concrete track slab.

- (3) The Contractor shall place PVC geomembrane centered on the water piping shown in the appropriate drawings, field verified and approved by the Project Manager. The edge of the PVC geomembrane shall be flush to the edge of the form.
 - (4) The Contractor shall provide support for reinforcing bars such that support design and spacing shall provide maximum support to prevent any puncture or tear to the PVC geomembrane.
- (c) Field welding shall not be permitted. All seams shall be factory fabricated.
- (d) Patching - Repairs to the PVC geomembrane shall be made with the parent material using manufacturer approved solvents and adhesives. The patch material shall have rounded corners and shall extend a minimum of 6 inches in each direction from the damaged area.
- (e) Contractor shall submit seaming and patching method to the Project Manager for approval.

F. RECORDS

- (a) The Contractor shall keep detailed record drawings showing the location of all PVC geomembrane sections and repairs made during the installation of the PVC geomembrane. These record drawings shall be updated by the Contractor on a daily basis and submitted to the The District upon completion of the project. Inspection of these record drawings shall be made available to the Project Manager or The District for verification and review at any time during the construction period.

G. TESTING AND INSPECTION

- (a) Inspection - Prior to placing concrete, the Project Manager shall perform a final inspection of PVC geomembrane. The Contractor shall notify the Project Manager at least one (1) day prior to the inspection. If the inspection reveals any liner defect such as tears, punctures, or unsatisfactory work, it shall be repaired or replaced as the Project Manager may direct before placement of concrete. The cost of all such repairs and replacements shall be borne by the Contractor, and no extension of the contract time will be granted because of the time required to remedy such defects.

H. MEASUREMENT

The basis of measurement will be per each item of installed 10' x 8' x 0.060" PVC geomembrane.

I. PAYMENT

1.52 mm PVC geomembrane - Furnish and install 10 feet x 8 feet x 0.060 inch PVC geomembrane centered on existing CI or DI water service or water main. The edges of the geomembrane shall be flushed with the bottom edge of the form for the track slab. The work includes surface preparation, placement, and repair of any damage prior to placement of

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concrete slab. All testing and other related work shall be incidental to the work and no extra payment shall be made.

<u>Pay Item</u>	<u>Unit of Measurement</u>
Furnish & Install 0.060 Inch PVC Geomembrane (Item No. 618901)	Each
1) 4. <u>PAVED TRACK (Item No. 501993, 310992)</u>	
2)	
A. DESCRIPTION - The Work in this Section includes the construction of paved track as shown on the Contract Drawings and as specified herein. The Work includes furnishing and placing a reinforced concrete track slab in two separate pours or a single pour; installing R152 rail, field bend horizontally for some locations; rail boot and cuffs; support ties; rail clips and composite nylon isolators; field rail welding and grinding; transition rails; track drains; traction power cable connections; elastomeric grout; joint sealant.	
B. RELATED SECTIONS	
SP-5 - Paved Track Rail Welding SP-6 - Traction Electrification Electrical SP-7 - Track Electrical Testing	
C. REFERENCES - The following Codes, Regulations and Reference Standards in effect on the bid due date apply to Work included in this Section:	
(a) AREMA: American Railway Engineering and Maintenance-of-Way Association	
(1) Manual for Railway Engineering. (2) Portfolio of Track work Plans.	
(b) ASTM: American Society for Testing and Materials	
(c) AASHTO: American Association of State and Highway Transportation Officials	
(d) AWWA: American Water Works Association	
(e) FTMS: Federal Test Method Standards	
(f) AISI: American Iron and Steel Institute	
(g) UBC: Sections 2402 and 2403	
D. SUBMITTALS - Submittals shall be made in accordance with the general requirements and as described herein. The Contractor shall submit the following	
(a) Designation of line and profile rail.	

- (b) Paved Track Work Plan per drawings.
- (c) Procedure for achieving uniform longitudinal rail stress for the zero stress temperature.
- (d) Thermite welds kits and weld grinding.
- (e) All test results, including electrical tests.
- (f) The Contractor shall submit for the elastomeric grout the manufacturer's current published application instructions and the Contractor's detailed written procedures for the Project Manager's review and acceptance 90 Days prior to commencing trackwork. Both documents shall address all of the following items:
 - (1) Identification of all Materials to be used by product number and description.
 - (2) Shipping, storing, and handling.
 - (3) Equipment identification, operation, and maintenance.
 - (4) Surface preparation to attain bond.
 - (5) Mixing, applying, and curing.
 - (6) Weather conditions.
 - (7) Public safety.
 - (8) Touch-up and repair.
 - (9) To Include In Quality Control Section

This is a general requirement paragraph!!!
- (g) Prior to commencing trackwork, the Contractor shall submit the following for the rail boot and cuff:
 - (1) Drawings for rail boot and cuff;
 - (2) Length of production;
 - (3) Jointing procedure from boot to boot;
 - (4) Cuff installation and isolation at joints;
 - (5) Material composition of boot and cuff and identification;
 - (6) Isolation values of boot and cuff;
 - (7) Testing results for isolation, tensile, shear strength and shore hardness values.
- (h) The Contractor shall submit the following for the support ties and rail clips:
 - (1) Drawings of support ties, rail clips, nylon isolators,
 - (2) Properties of materials and specifications,
 - (3) Clip toe load and pressure transfer to rubber boot,
- (i) The Contractor shall provide Shop Drawings for a track drain with formed concrete surfaces compatible with the proposed track components that will properly drain both flangeways, pavement surface, as shown in the Contract Drawings, for approval by the Project Manager prior to fabrication and delivery.

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- (j) The contractor shall submit shop drawings for rails that will be pre-bent with roller bending equipment. These drawings shall include the following information:
1. Curve designation
 2. Start and end stationing of field bending
 3. Location of any joints in the curve (by stationing or length along curve)
 4. Width of gaps between rails through curves.
 5. Length of rails within the curve.
 6. Points of curvature within bending limits (PC, PT, TS or ST).

Rails shall not be field bent until shop drawings have been reviewed and approved by the owner's representative.

E. QUALITY ASSURANCE AND QUALITY CONTROL

- (a) The quality of all Materials and installation of Work shall be confirmed by the Contractor in accordance with the written Quality Control Plan, prepared by the Contractor and accepted by the Project Manager in accordance with Division 100 General Requirement of the DDOT Standard Specifications.
- (b) The Quality Control Plan shall define the tests and measurements to be conducted by the Contractor, the instruments and equipment requirement, the frequency of tests, and the documentation of the results. All quality control Work is the responsibility of the Contractor.
- (c) The Quality Control Plan shall cover all phases of the Work, from material manufacture to trackwork completion, including at least the following specific items:
- (1) Material control and batch traceability.
 - (2) Shipping, handling, and storage controls and measurements.
 - (3) Equipment maintenance including calibration measurements and tests for contamination of compressed air lines.
 - (4) Surface preparation measurements.
 - (5) Environmental measurements such as temperature, dew point, relative humidity, rainfall, etc.
 - (6) Mixing, applying and curing measurements such as component materials viscosity and density, mixing ratios, and material hardness at various cure times.
 - (7) Provisions for test failure and retesting procedures.
 - (8) Track alignment and geometry measurements and control.
 - (9) Field rail welding and grinding control.
- (d) ***The Project Manager shall have access to witness all quality control tests and measurements and to review all documentation. Contractor shall give notice or schedule to Project Manager when tests are to occur.***
- (e) ***Incomplete or inadequate quality control documentation will be sufficient grounds for rejection of installed materials.***

- (f) *The Work of this Section shall be supervised by a superintendent and foreman in charge of trackwork operations, each with 5 years' documented experience in direct fixation track construction.*
- (g) Track Demonstration Section
- (1) The Contractor shall install a demonstration a minimum of 150 ft section of track to qualify his track Work Plan upon receipt of conditional approval of the Work Plan by the Project Manager.
 - (2) The demonstration section shall include a field bending rail.
 - (3) Upon completion of the demonstration section, the Contractor shall verify conformance with the specified tolerances and track-to-earth electrical tests as specified in SP-7.
 - (4) Unacceptable demonstration sections shall be repaired or removed and replaced at the Contractor's own expense to conform to all Contract requirements.
 - (5) The demonstration track shall be constructed, fully tested, and accepted to the Specification requirements by the Project Manager prior to initiation of any other track installation Work.
 - (6) Upon completion and acceptance of the demonstration section as part of the system by the Project Manager, the Contractor's key personnel including, but not limited to, the Contractor's Project Manager, superintendent, track crew foreman, inspectors, surveyor, track Subcontractor foreman and quality control manager, shall meet with the Project Manager to review the conduct of demonstration track construction. At the meeting the Contractor and his personnel shall present any revised construction methods from those approved, request any clarification of requirements and criteria, and address any procedural problems or suggest improvement for the Project Manager/Contractor relationship for the duration of the track work construction. At the meeting, the Project Manager will establish delivery dates for Contractor revised submittals and other action items arising from the meeting.
 - (7) Minutes of the demonstration review meeting will document the results of the meeting.

F. MATERIALS FURNISHED BY DC DOT

All Ri-52 Girder rails will be furnished by DDOT, all other associated components will be provided by the contractor. The Contractor will be responsible for reviewing the rail procurement package which shall be provided upon request.

G. MATERIALS FURNISHED BY CONTRACTOR

- (a) Rail boot and cuffs
- (b) Insulated support ties.
- (c) Insulated rail clips.

- (d) Track drains shall be fabricated steel grates that fit adjacent to the rails of one track to drain the trackway surface and the rail flangeways. Rail must be isolated from steel grates. Trough shall be formed in concrete. Metal grating shall be designed to carry HS20-44 AASHTO loading. Steel angle support and bolting of grating to angles shall be strong enough and designed to transfer HS20-44 AASHTO loading into the concrete slab. Angles shall have diagonal Nelson studs welded on to secure them tightly into the concrete.
- (e) Track slab concrete shall be 4500 Lbs/in in accordance with DDOT Standard Specifications For Highways And Structures section 817.
- (f) Steel reinforcement shall be 60,000 Lbs/in deformed bars in accordance with ASTM A615 grade 60.
- (g) Any and all other Material necessary to provide a complete installation.

H. INSULATED SUPPORT TIES (COATED C-CHANNELS)

- (a) Insulated support ties with nylon fasteners shall be furnished complete for assembly of rail and rail boot.
- (b) Support ties shall be similar to IHECO (Iron Horse Engineering Co.) Part Number 12.334 steel ties or approved equivalent. Steel ties shall have a minimum width of 5 inch to support the rail seat and shall have bending properties equivalent to a C 5x9 (English units) channel. Ties shall accommodate Ri52 girder rail at a track gage of 1435 mm. Rail shall be fastened to ties using nylon fasteners (nylon reinforced plastic clips) or approved equivalent.
- (c) Steel support ties shall be coated with 3M™ Scotchkote™ 206N Fusion Bonded Epoxy Coating (or approved equivalent) applied in accordance with AWWA C213.
- (d) Support ties shall be spaced at 10 ft on tangent and curves larger than 985 ft. For curves 985 ft or less (horizontal or vertical), support ties shall be spaced at 4.92 ft intervals.

I. RUBBER BOOT AND CUFF EXTRUSIONS

- (a) Elastomeric rubber boot and cuff extrusions shall be preformed continuous extruded elastomeric material with a minimum length of 225 ft. Elastomeric rubber extrusion and cuff material shall be manufactured Santoprene 591-73 W 175 Thermoplastic Rubber or approved equal.
- (b) The Contractor shall submit certification and test reports from the manufacturer that the installed product will withstand:
 - (1) AASHTO HS20-44 loadings in an urban environment for a minimum of 5 years with no failure. Failure is defined as the product not capable of carrying a vehicle or pedestrian in a smooth and safe manner from pavement to rail, requiring replacement or repair of the product.

- (2) The pressure and abrasion of heavy bus and truck traffic with studded tires and/or chains, and to provide a non-skid surface for a minimum of 5 years with no failure.
- (3) That the strength of the adhesive used to join adjacent sections is at least 70% of the cohesive strength of the elastomeric rubber extrusion insert.

J. NYLON REINFORCED PLASTIC

Nylon reinforced plastic clips shall be IHECO (IronHorse Engineering Co.) Part Number 12.310 or approved equivalent.

K. TRACK DRAIN

- (a) The track drains shall be formed concrete that fits adjacent to the rails of one track to drain the pavement surface and the girder rail grooves. Rail connections must be insulated.
- (b) The track drain shall be as shown in the Contract Drawings.
- (c) The track drain assembly shall be manufactured to fit Ri52 rail laid at the specified track gauge of $1435 \pm 3\text{mm}$. The drain shall be constructed so that the top of the grate will not exceed 0.25 inch below the top of railhead elevation.
- (d) Grate at railhead face shall allow a gap of 1 inch between face of lip at gauge point (10mm below top of rail) and outside face of lateral grate bar.
- (e) Piping used for track drains shall be HDPE or PVC (ASTM D3034 SDR 35).

L. TRACTION POWER CONNECTIONS

- (a) The traction power connection shall be as specified in SP-6

M. CONCRETE TRACK SLAB

- (a) Concrete mix and strength shall be in accordance with DDOT Standard Specifications For Highways And Structures Standard section 817.
- (b) Reinforcing shall be deformed bars in accordance with ASTM A615 grade 60.

N. GENERAL

- (a) Track construction shall conform to AREMA Specifications for Track Construction except as modified herein. All tracks shall be insulated and equipped with track drains and traction power boxes, as shown in the Contract Drawings.
- (b) The proper long-term functioning and electrical isolation properties of the Paved Track Section are contingent on the clean installation of the rail and gauging system.

O. TRACK ALIGNMENT AND GEOMETRY

- (a) General: The track shall be constructed to the alignment and profile indicated, within the tolerances specified.
- (b) Profile Rail: The Contractor shall designate right or left rail, while facing in the direction of increasing stationing, to control the grade of all tangent tracks on a Contract-wide basis. The low or inner rail on all curves shall be used to control grade.
- (c) Line Rail: The Contractor shall designate right or left rail, while facing in the direction of increasing stationing, to control the alignment of all tangent tracks on a Contract-wide basis. On curves, the outside rail shall be designated the line rail.
- (d) After completion of concrete pour No. 1, but before concrete pour No. 2, the Contractor shall perform a survey of the finished rails to determine the actual horizontal and vertical alignments, track gauge and cross level. Any deviations in the final alignment exceeding the paved track construction tolerances shall be corrected by the Contractor before continuation of the work.
- (e) If Contractor intends to pour the track slab in one pour, in addition to (d) above the Contractor shall perform the following pour.
- (f) Maintain monuments for the duration of the Work. Maintain an accurate surveyor's field book, accessible by the Project Manager at any time, indicating all checks of the trackwork alignment. Record deviations from the design alignment that are accepted by the Project Manager.

P. INSTALLATION TOLERANCES - Deviations from indicated gauge, cross level, horizontal line, and profile grade shall conform to the following requirements:

- (a) Paved track gauge shall be 1435mm \pm 3mm
- (b) Paved track cross level shall be \pm 0.12 inch from level or superelevation
- (c) For paved tracks, deviation from horizontal alignment is as follows:
 - (1) 0.12 inch in the middle ordinate of a 62.33 ft chord.
 - (2) \pm 0.5 inch total, except at passenger stations where total deviation shall be \pm 6mm
- (d) Deviation from profile grade shall not exceed \pm 0.12 inch in a 62 feet chord, or a total of \pm 0.5 inch.

Q. TOOLS AND EQUIPMENT

- (a) On-track equipment shall conform to AREMA Specifications for On-track Roadway Machines and Work Equipment.

- (b) Construction equipment operated on the track slab or the tracks shall be in good repair and have all safety and protective appliances in place and functioning.
- (c) Contractor's equipment shall not exceed clearance requirements and the design loads. Further information concerning vehicle characteristics will be provided upon request by Contractor. Contractor shall verify that proposed equipment meets these requirements.
- (d) Construction equipment with rail wheels shall not be allowed on the tracks if any of the wheels exhibit a flat spot of length greater than 8% of the wheel diameter.
- (e) Tools used in track construction shall conform to AREMA Specifications and Plans for Track Tools, or as approved by the Project Manager. All tools shall be calibrated as appropriate for the use.
- (f) Equipment for elastomeric grout installation shall be as follows:
 - (1) The Contractor shall furnish equipment to provide the manufacturer's specified environmental conditions in the Work area during cleaning and application operations where necessary to meet contracted completion schedules.
 - (2) Cleaning and application equipment shall be as recommended by the manufacturer and shall be sized to the configuration of the Work.
 - (3) Air supply lines shall be equipped with effective traps to remove moisture and oil. Traps shall be bled continuously.

R. TRACKWORK PLAN

- (a) The Contractor shall submit a Track Work Plan for review and conditional acceptance by the Project Manager at least thirty (30) Days prior to the installation of the demonstration section.
- (b) As part of the Track Work Plan, the Contractor shall pay particular attention to the maintenance of a clean track section through all stages of the work. The Project Manager shall be contacted a minimum of 24 hours in advance of all steps of the installation. The Contractor must assure the Project Manager that the rail has been sealed in a finished installation that is agreed to be free of debris. Particular care shall be taken to keep the rail boot clean during installation.
- (c) The Work Plan shall describe the Material handling, construction methods, sequence, environmental constraints, and coordination with other Contractors in the vicinity for all Work, including the following:
 - (1) Preparation of subgrade and installation of aggregate base material as shown on the Plans.
 - (2) Installation of the concrete track slab, reinforcement, stub ups and block outs.
 - (3) Assembly and installation of the support ties and nylon fasteners, boot, cuffs, rail and track drains.
 - (4) Installation of traction power cable welds to rail.

- (5) Rail Layout Plan showing location and sequence of the field welds.
 - (6) Methods to meet the rail temperature requirements.
 - (7) Surface finish where applicable, as shown on the Contract Drawings.
 - (8) Intermittent electrical resistance tests shall be in accordance with specified criteria for rail to track slab before installation of concrete No. 2 pour, as specified in Paragraph Z, Electrical Tests.
- (d) Provide an installation schedule defining the sequence of operations by which the Work will be performed and the anticipated duration of each operation. Describe each installation operation in detail, indicating the materials, manpower and mechanical equipment needed.
 - (e) For Mobilization and Traffic Control see the special provisions in the main body of the specification. .
 - (f) Final Acceptance of the Work Plan by the Project Manager is contingent upon installation of an acceptable demonstration section. Production track installation shall not begin until the Project Manager has accepted the Work Plan.

S. PREPARATION OF SUBGRADE - The subgrade shall be formed and prepared as shown on the Contract Drawings, and in accordance with Section 202.02 Common Excavation of the DDOT Standard Specification.

T. AGGREGATE BASE COURSE - Aggregate base course shall be furnished and installed in accordance with DDOT Standard Specifications For Highways And Structures Section 209.

U. CONCRETE TRACK SLAB INSTALLATION

- (a) Install the reinforced concrete track slab as follows:
 - (1) Top surface of the concrete will be placed relative to the finished top of rail elevation, as specified.
 - (2) Tolerance on the elevation of the top of the concrete shall be ± 0.06 inch.
 - (3) Slab penetrations, block outs and surface modifications for drainage structures, boxes and conduits shall be as shown on the Contract Drawings.
 - (4) Inspection shall be by the Contractor's personnel who will have responsible charge of the Work. All defects in the base material shall be corrected prior to placement of the concrete track slab.
 - (5) The concrete track slab shall be placed as shown on the Contract Drawings, in accordance with DDOT Standard Specifications For Highways And Structures section 501 and as specified herein.
 - (6) Track slab surfaces shall be Transverse heavy broom or tine.
- (b) When track slab is to be installed on top of existing or modified utility manholes, Contractor shall install structural foam 2 inches minimum material between track slab and the manhole lid below.

V. RAIL INSTALLATION

- (a) Rail Distribution: The rails shall be loaded from the designated storage area, transported and unloaded at the Work Site in accordance with the recommendations of Chapter 5, Track, of the AREMA Manual. Layout of the rails shall conform to the Work Plan.
- (b) Field rail welding shall be done in accordance with SP-5
- (c) Cutting and Drilling
 - (1) Holes or cuts will not be permitted except where shown on the Plans and as specified herein.
 - (2) Rails shall be cut square and clean by using rail saws or abrasive cutting discs only. Flame cutting of the rail will not be allowed. Burrs and excess metal on the rail ends shall be removed after cutting by grinding.
 - (3) Rails shall not be cut for the installation of a bolted or bonded joint within 3m of a shop weld.
 - (4) Holes shall be drilled in accordance with the requirements of AREMA Manual, Chapter 4, and "Specifications for Steel Rails." Holes shall not be punched, shot, slotted, or burned with a torch.
- (d) Distressing Rail
 - (1) Rail zero stress (neutral) temperature at final closure and fastening shall range between 65°F to 85° F and the maximum temperature deviation on opposite rails when anchored should not exceed 5°F.
 - (2) The rail shall be uniformed and fastened the entire length (except at free ends).
 - (3) The Contractor shall submit a detailed procedure for achieving uniform longitudinal rail stress for the zero stress temperature specified herein.
 - (4) Final closure shall be by a field weld with the rail fully fastened (except immediately adjacent to the field weld as necessary to perform the weld) near or at final elevation and alignment. If post closure rail realignment is required, the Contractor shall provide sufficient longitudinal restraint either side of the location of realignment to assure the rail stress state is not changed by the realignment Work.
- (e) Weld Finish - See SP-5 for weld finish.

W. TRACK DRAIN INSTALLATION

- (a) Install drains as indicated in the Contract drawings.
- (b) Install drains so that the drain outlets properly connect to drain pipes as indicated in the Contract Drawings.
- (c) Pour elastomeric grout at locations as shown on Contract drawings for elastic separation and electrical isolation.

X. TRACTION POWER CABLE CONNECTION

- (a) Install elastomeric grout as indicated on the Contract drawings and as specified in SP-6.
- (b) Connect electrical conduits as indicated on the Contract drawings and as specified in SP-6.

Y. FINAL ALIGNMENT AND TRACK INSPECTIONS

- (a) The final horizontal and vertical alignment, gauge, electrical resistance and impedance, cross level, and super-elevation shall be within the tolerances specified.
- (b) Track geometry deviations, as disclosed by the inspection specified above, shall be corrected and necessary re-inspection shall be performed to ascertain that corrections have been made prior to Final Acceptance.
- (c) Track geometry inspection shall occur after concrete pour No. 1 and rail with boot has been installed and final fastened, but before concrete pour No. 2 has been poured. The Contractor shall preferably use the two pour method for the trackway slab so track gauge and profile can easily be corrected at this stage
- (d) If the Contractor uses the single pour method for the trackway slab, the track profile shall be exact and the rail system shall be secured to prevent uplift. Contractor shall demonstrate that he can control surface finish with one concrete pour and that conditions of Section 01210.41(e) are met.
- (e) When placing concrete care must be taken by tract workers who do not stand on the track and that equipment not are allowed to contact the track.

Z. ELECTRICAL TESTS

- (a) As the Work of this Section proceeds, perform track-to-earth electrical resistance tests at a minimum of one test per track every 200 feet and at all special trackwork, on completed track.
- (b) Track-to-earth electrical resistance tests shall be in accordance with Section 16951.
- (c) An intermediate track-to-base slab test shall be performed every time a track section has been completed, and before concrete pour No. 2 is placed. If Contractor decides to pour track slab in one pour, an approved method for corrective measures shall be in place to meet the track-to-earth electrical resistance requirements.
- (d) The boot shall be tested for construction damage before concrete pour.
- (e) Undertake corrective measures at all locations that do not meet the track-to-earth electrical resistance requirements, as specified. The corrective measures shall extend to the next tested location that meets the specified requirements. The corrective measures shall require removal and replacement of any and all insulating Materials in the track, at Contractor's expense, until the requirements of Section 16951 are met.

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(f) Retest the track-to-earth electrical resistance at the corrected locations, as specified.

AA. REPAIR PROCEDURES - The Contractor shall submit a repair procedure to the Project Manager to assist in the future repair, removal and replacement of rails installed under this Contract. The procedure shall cover at least the following items:

- (a) Removal methods.
- (b) Replacement Materials including source, shelf life and current cost.

(c) Welding Methods

(d) Installation Methods.

BB. TRACTION POWER BONDING OF ELASTOMERIC MATERIALS - Traction power bonds shall be installed as shown on the Contract Drawings and in accordance with the requirements of Section 01300.

CC. SHIPPING, HANDLING AND STORAGE OF ELASTOMERIC MATERIALS

- (a) Pourable elastomeric Materials shall be delivered to the place of application in the manufacturer's unopened, original containers bearing a legible product designation, batch number and date of manufacture.
- (b) All Material shall be stored in accordance with the manufacturer's latest published instructions, and shall be protected as required by the manufacturer from damage, moisture, direct sunlight, and temperatures below or above those recommended by the manufacturer.
- (c) Containers of elastomeric Materials shall not be opened except for immediate use. Materials in damaged containers shall not be used if any of the contents were lost or exposed.
- (d) Materials with a shelf life shall be used within six months of their manufacture and in no case after the manufacturer's recommended shelf life.
- (e) Track work Materials shall be stored off-ground on pallets, timber dunnage, platforms, or other approved supports in a manner that will permit easy access for inspection and identification.
- (f) Operations likely to cause damage to the rails during any handling operations shall not be used.

DD. INSPECTION OF MATERIALS

- (a) All material furnished in this Contract by the Contractor shall be subjected to inspection by the PM at the place of manufacture.

- (b) The Contractor shall afford the Project Manager access and, without charge, all necessary facilities to examine the work, at any time during this process, as well as the finished product, to satisfy the PM that the materials comply with these specifications. Any regular examination of the product will take place during normal working hours.
- (c) Material for inspection shall be presented in a safe area away from excessive noise and manufacturing activities. Excessive noise shall be considered any sound or sounds in excess of 68 dB.
- (d) The Contractor shall give the Project Manager written notice for inspection at least 30 working days in advance of availability for inspection.
 - (a) The Project Manager and the Contractor shall arrange inspection of track rails of Ri52 for acceptance by the Contractor. The Contractor shall identify in writing any defects of the materials supplied. After acceptance of the Ri52 rails and materials, the Contractor will bear full responsibility for the materials accepted.

EE. MEASUREMENT Paved track, tangent and curved, drains, concrete slab, field welding and construction joints will be measured on the following basis:

- (a) Track Drains will be measured by each track drain installed and accepted.
- (b) No separate measurement will be taken for track surface finishes.
- (c) Field rail welding and grinding is considered incidental to the Paved Track installation.

FF. PAYMENT - Payment measured will be made as follows:

- (a) Ri52 Paved Track - Track will be paid for at the Fixed Quantity Contract unit price per track linear foot for "Install Ri52 Paved Track " whether is straight or field bend. The Contract unit price includes fine grading of aggregate base, distributing and installing furnished girder rail, furnishing and installation of rail boot and cuffs, jointing of boot sections, support ties with nylon insulators, field rail welding and grinding, installation of reinforced concrete track slab, and miscellaneous materials for conforming to all specified tolerances, for performing all tests, and for preparation and revision of all specified submittals and Work Plans; and cleanup. The contract unit price for Paved Track does not include saw cutting and excavation.
- (b) Track Drainage Basin and Grates will be paid for at the Contract unit price for each "Furnish and Install Track Drainage Basin and Grates". The Contract unit price includes furnishing and installing track drains, forming of concrete troughs, finishing and installation of angles and anchor bolts, furnishing and installation of metal grates, sealing around the drain pipe, HDPE drain pipe and two 45° elbows to the designed invert elevation and forming of concrete inlet surface.
- (d) Field rail welds and grinding will be incidental to the installation of rail.

- (e) Successful electrical testing of the paved track prior to payment is required. Testing shall be paid separately under the SP-7 Track Electrical Testing
- (f) The Contract unit price for each item will be payment in full for furnishing all labor, tools, Materials, equipment and incidentals, and doing all Work necessary to complete the Work specified.
- (c) Payment will be made as shown below:

<u>Pay Item</u>	<u>Unit of Measurement</u>
Furnish & Install Ri52 PCC Paved Track (Item No. 501993)	LF
Furnish and Install Track Drainage Basin & Grates (Item No.310992)	EA

Construction of intersection slab edges is considered incidental to construction of paved track.

5 PAVED TRACK RAIL WELDING

A. DESCRIPTION - This Section specifies the installation and testing of field rail welds to connect Ri59-13 and Ri52-13 rails as shown on the Contract Drawings and as specified herein. The Contractor may elect to utilize a mobile electric-flash butt welding plant to satisfy the requirements of this Section.

B. REFERENCES

- (a) AREMA - Manual for Railway Engineering, Vol. I, Chapter 4, Part 2 - Specifications, "Thermite Welding - Rail Joints" and "Specification for the Quality Assurance of Elastic Flash-Butt Welding of Rail."
- (b) ASTM E 10 - Test Method for Brinell Hardness of Metallic Materials.
- (c) ASTM E 709 - Practice for Magnetic Particle Examination.
- (d) ASNT CP-189 - Standard for Qualification and Certification of Nondestructive Testing Personnel.

C. SUBMITTALS - Submittals shall be made in accordance with the general requirements, and as described herein. The Contractor shall submit the following:

- (a) Thermite and/or mobile electric-flash butt welding procedure Specification.
- (b) Procedure qualification test results.
- (c) Report on UT and magnetic particle inspection of production field welds.
- (d) A daily report of field welding records.
- (e) Identification of the independent testing service, their testing program and procedures, and a copy of their agreement.

D. WELDING KIT - The Contractor shall select and furnish a welding kit that conforms to the requirements of AREMA “Thermite Welding - Rail Joints” except as modified herein. The thermite welding kit Material manufacturer shall certify the thermite powder portions are in compliance with the referenced requirements. Appropriate kits shall be supplied for welding to premium rail, premium to standard rail, and standard to standard rail.

E. WELDING PROCEDURES - All welding procedures and methods shall conform to the requirements of AREMA “Thermite Welding - Rail Joints” and/or “Specification for the Quality Assurance of Electric Flash-Butt Welding of Rail” except as modified herein.

F. PROCEDURE SPECIFICATION - The Contractor shall prepare a detailed procedure Specification for the Project Manager’s review and approval covering step-by-step procedures to be employed in making field thermite and/or mobile electric-flash butt welds. A complete description of each of the following items and any other essential characteristics shall be included in the procedure Specification.

- (a) Manufacturer’s trade name for welding process.
- (b) Flame cutting not allowed, other field cutting methods and tools must be approved, in advance, by the PM.
- (c) Minimum and maximum gap between rail ends.
- (d) Method and equipment used for maintaining rail gap and alignment during welding.
- (e) Method used for preheating rail ends including time and temperature.
- (f) Tapping procedure including minimum time required to cool weld under the mold insulation.
- (g) Method used for removing gates and risers and finishing weld suitable for radiographic inspection, including a description of special tools and equipment.
- (h) Procedures for electric flash butt welding and partial testing.
- (i) Quality control procedures.

G. QUALIFICATION OF FIELD WELDING PROCEDURE

(a) The Contractor shall qualify the procedure Specification described above by preparing and testing one (1) qualification test welds for Ri59-13 and three (3) qualification test welds (Standard rail to standard rail; Standard rail to premium rail; and Premium rail to premium rail) for Ri52-13 prior to beginning production welding. The qualification test welds shall be prepared by the contracting welding crews in conformance with the procedures listed in Paragraph 01230.41 on short lengths of Ri52-13 rail out of track, and in the presence of the Project Manager.

(b) The qualification test welds shall be inspected and tested by the testing service in accordance with the following requirements included in this special provision:

- (1) Paragraph H, Weld Quality.
- (2) Paragraph I, Hardness.
- (3) Paragraph R, Weld Inspection Testing.
- (4) Paragraph S, Weld Inspection.
- (5) Paragraph T, Magnetic Particle Testing.

(c) The qualification test weld shall be sectioned longitudinally through the middle of the rail and chemically etched. The etch shall show a clean definition of the weld metal and heat affected zone of the weld joint. The testing service shall examine the etched sections for conformance with the weld quality requirements of Paragraph S. One of the etched sections and the report of the testing service shall be submitted to the Project Manager.

(d) The procedure Specification will be considered qualified if the weld kit and/or the mobile electric-flash butt welding plant and all tests and inspections meet or exceed the acceptance requirements. If any test or inspection is failed, the Contractor shall submit and qualify a revised procedure Specification in accordance with the requirements herein.

(e) Production field welding shall not begin until a Procedure Specification is qualified in accordance with the requirements herein.

- H. WELD QUALITY** - Each completed weld shall have full penetration and complete fusion and be free of cracks. The total area of internal defects such as porosity and slag inclusions shall not exceed 0.09 square inches and the largest single porosity or slag defect permitted shall not exceed 0.180" in diameter.
- I. HARDNESS** - The hardness of the weld shall be measured on the head of the rail in the center of the weld in accordance with ASTM E 10. The Contractor must make every effort to produce welds with uniform hardness relative to the parent metal.
- J. WELDING SUPERVISION** - All welding shall be performed under the direct supervision of a welding foreman or supervisor with a minimum of five years documented experience supervising field welding. In addition, a manufacturer's representative, experienced in thermite and/or mobile electric-flash butt welding, as appropriate for the welding method being used, shall be present at the job site and shall witness the making of at least the first 8 acceptable thermite and/or mobile electric-flash butt welds, including the test welds.

K. THERMITE WELDING REQUIREMENTS

(a) Rail End Preparation - The rails to be welded shall be cleaned of all grease, oil, dirt, loose scale and moisture to a minimum of 150 mm (6") back from the rail ends, including all the rail surface, by use of a wire brush or grinding, to completely remove all dirt and loose oxide, and by use of oxy-acetylene torch under a minimum temperature of 120 °C (250 °F) to remove any grease, oil or moisture. The face of the rail ends shall be aligned and arranged at right angles and cut by using a power actuated saw, or abrasive rail cutting machine, and further cleaned to remove all scale and rust by use of a power actuated grinder with abrasive wheel for 50 mm (2") on each side of the weld. Rail ends shall show no steel defects, dents, or porosity before welding. All burrs and lipped metal which would interfere with the fit of the mold shall be removed.

(b) Weld Gap - The minimum and maximum gap shall be in accordance with the Specifications for the type of thermite or mobile electric-flash butt weld being made, and as provided by the manufacturer of the weld kit or the mobile electric-flash butt welding plant. The minimum measurement shall be made with a go or no go gauge made of the specified dimensions for the thermite or the mobile electric-flash butt process used. The gap must be adjusted if under the minimum or more than 3 mm (1/8") over the specified gap.

(c) Sealing the Molds - No mold sealant or luting Material shall be introduced into the weld chamber.

(d) Bolt Holes - No holes shall be made or included in the ends of the rail to be welded.

(e) Preheating - The rail ends shall be standard preheated, prior to welding, to a sufficient temperature and for sufficient time, as indicated in the approved procedure Specification, to ensure full fusion of the weld metal to the rail ends without cracking of the rail or weld. The rail temperature shall be checked by the use of tempilsticks, or as directed by the Project Manager. Only standard preheat will be allowed.

(f) Post heating - The molds for thermite field welds shall be left in place after tapping for sufficient time to permit complete solidification of the molten metal and proper slow cooling to prevent cracking and provide a complete weld with proper hardness and ductility.

(g) Weather - Welding shall not be done during periods of precipitation, winds of 25 mph or more, or electrical activity except by permission of the Project Manager.

(h) Other Work - During the setting up and actual welding, other Work which would in any way move, vibrate, or otherwise interfere with the welding outcome will be prohibited.

(i) Storage of Thermite Welding Materials - Crucibles, molds and thermite mix portions shall be stored in a dry location in order to prevent moisture contamination. Thermite mix portions stored beyond their shelf life shall not be used.

L. LOCATION - The Contractor shall locate field welds in accordance with the following:

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- (a) Field welds in opposite rails shall be staggered a minimum of 1.50 m (5') for connecting CWR strings and a minimum of 2' at all other locations.
- (b) Field welds shall not be located within 10' of a bolted rail joint.
- (c) Field welds shall not be positioned within 3" of a support tie.
- (d) Field welds shall not be located within 10' of another field weld on the same rail or within 8' of a plant weld on the same rail, unless approved by the Project Manager.

M. ALIGNMENT

- (a) The ends of the rails to be welded shall be properly gapped and aligned to produce a weld which will conform to the following alignment tolerances. The rail gap and alignment shall be held by a hydraulic rail puller/expander and alignment jig without change during the complete field welding cycle.
- (b) Alignment of rail shall be done on the head of the rail:
 - (1) Vertical alignment shall provide for a flat running surface. Any difference of height of the rails shall be in the base.
 - (2) Horizontal alignment shall be done in such a manner that any differences in the width of heads of rail shall occur on the field side.
- (c) Horizontal offsets shall not exceed 1 mm (0.040") in the head and 3 mm (0.125") in the base.
- (d) Surface Misalignment Tolerance:
 - (1) Combined vertical offset and crown camber shall not exceed 0.040" per foot at 15 degree C
 - (2) Combined vertical offset and dip camber shall not exceed 0.010" per foot at 15 degree C.
- (e) Gauge Misalignment Tolerance - Combined horizontal offset and horizontal kink shall not exceed 1 mm (0.040") per 0.30 m (foot) at 15 ° (60 °).

N. FINISHING - The weld shall be finished with a rail mounted rail head grinder specifically designed for the Work. Finishing shall conform to the following tolerances:

- (a) Top of rail head, + 0.010" to - 0" of the parent rail section.
- (b) Sides of rail head, ± 0.010" of parent rail section.
- (c) The balance of the rail section shall be finished with a hand-held grinder as required to remove notches, protrusions, gouges, visible cracks and other defects. All grinding shall blend to the parent rail section and shall not overheat the steel. Heavy grinding shall be completed while the steel is still hot from welding. Remaining weld shall not protrude more than + 3 mm (+ 1/8") of parent rail section at base and sides.

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O. WELD NUMBERING - Each weld shall be given a number in sequence as the welding progresses. The number shall be 2" from the finished weld on the field side of the rail. Defective welds which are replaced shall be given a new sequential number. This number shall be recorded in the field welding records.

P. FIELD WELDING RECORD - Field welding records shall be maintained by the Contractor and submitted to the Project Manager on a daily basis during the production of field welds. These records shall include:

- (a) Date and time welded.
- (b) Weld number and location by station stating track and rail.
- (c) Type of joint - Std to Std, Premium to Premium, Std to Premium.
- (d) Contractor's welding personnel.
- (e) Project Manager's representative.
- (f) Manufacturer's representative.
- (g) Rail gap (nearest 1/16").
- (h) Weather, air and rail temperature.
- (k) Inspector's name, date of inspection and inspection results.

Q. QUALIFICATION OF WELDING CREW - Prior to production welding, each crew, including foreman or supervisor of that crew, shall prepare a qualification weld in Ri59-13 and Ri52-13 for out of track, at the expense of the Contractor. The weld shall be prepared in accordance with the approved procedure Specification and will be witnessed by the Project Manager.

(a) Testing - Qualification weld shall be visually inspected and tested by UT and magnetic particle and for hardness.

(b) Acceptable Criteria - Weld quality requirements of Paragraphs H and I of this special provision.

(c) Test Record - The test record shall contain the names of the crew members, including foreman or supervisor of that crew, who performed the qualification weld and briefly describe their specific duties. The test records shall also show results of ultrasonic and magnetic particle testing. All performance qualification records shall be submitted to the Project Manager at least 14 Days prior to production welding. Production welding shall not commence until qualification test welding records have received written approval by the Project Manager.

(d) Requalification - The Project Manager reserves the right to require the requalifications, at the Contractor's expense, of any crew of welders whose Work fails to meet the specified requirements.

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R. WELD INSPECTION TESTING

- (a) All field weld inspection and testing shall be carried out by an independent testing service, selected by and at the expense of, the Contractor. The testing service and their testing program and procedures shall be subject to the approval of the Project Manager.
- (b) The Contractor shall submit a copy of his agreement with the testing service to the Project Manager for approval. The agreement shall specify that the testing agency is directly responsible to the Project Manager, that all subsequent communication between the testing services and the Contractor regarding the Work under this Contract shall only be through the Project Manager, and that the agreement shall run for the duration of the Contract and can only be terminated by the Project Manager.
- (c) Testing service personnel performing non-destructive examination (NDE) shall be certified as Level II or III for NDE methods in accordance with ASNT CP-189.
- (d) The testing service shall certify whether or not each weld meets the quality criteria immediately following its inspection, and shall indicate acceptance or rejection by marking the tested weld. Written reports shall be submitted to the Project Manager within five Days of testing a weld. The Project Manager will forward copies to the Contractor.
- (e) Unless otherwise allowed for by the Project Manager, inspection and testing results of field rail welds shall be no further than 10 welds behind the production of welds.

S. WELD INSPECTION

- (a) Each weld shall be visually inspected to check for surface defects such as cracks and to determine conformance with the alignment and finishing tolerances herein.
- (b) Acceptance Criteria
 - (1) Paragraph H Weld Quality.
 - (2) Paragraph M Alignment.
 - (3) Paragraph N Finishing.
- (c) Inspection Procedures - The testing service shall prepare an inspection program for approval by the Project Manager. The program shall include a description of proposed procedures, equipment and reports.

T. MAGNETIC PARTICLE TESTING

- (a) All paved track field welds shall be magnetic particle tested (MT). The magnetizing equipment shall be an electromagnetic yoke meeting the following requirements:
 - (1) DC lift capacity of 40 lbs. and/or
 - (2) AC lift capacity of 10 lbs. at the maximum pole spacing.

- (b) The procedure shall meet the requirements of ASTM E 709.
- (c) All weld surfaces shall be tested except the underside of the rail base.
- (d) Testing Procedures - The testing service shall prepare a testing program for approval by the Project Manager. The program shall include a description of the proposed procedures, Materials, equipment, safety requirements and report.
- (e) Acceptance Criteria - The weld quality shall meet the requirements of Paragraph 01230.43.

U. REWELDING

- (a) Welds rejected during inspection and/or testing shall be cut out and re-welded if possible, or replaced with at least a 10feet rail welded in its place in accordance with this Specification.
- (b) Minor defects may be repaired by qualified welders in accordance with repair procedures approved by the Project Manager.

V. CLEANUP - Upon completion of each weld, the Contractor shall clean up all welding debris, including discarded molds, slag, discarded equipment and any other debris that accumulated during the Work.

W. MEASUREMENT - No measurements will be made for Field Rail Welds installed and accepted. They shall be incidental to the Paved Track Construction and Paved Special Track work.

X. PAYMENT – No separate payment will be made for work included in this section

6. TRACTION ELECTRIFICATION Electrical (Item No. 618022, 618038 and 618991)

A. DESCRIPTION

This Section covers general and specific requirements for furnishing and installing manholes and duct bank for future installation of traction power. Conduit systems for traffic signal equipment and street lighting are covered under Sections 600 and 800 of the District Standard Specification for Highways and Structures.

This work includes providing manholes as shown and as specified, complete raceway systems including duct banks as shown and as specified; provision and installation of grounding bushings on metallic conduit, ground wire and cable, ground rods, exothermic welds, ground lugs and fittings for manholes; accessories including covers, raceway termination and fittings, cable supports, cable pulling provisions, raceway labeling; excavation and backfill; and drainage.

Each duct bank consists of raceways, fittings, and concrete. Duct bank construction includes excavation, bedding material, preparation, and backfill.

This Section includes requirements for grounding connections required by the NEC and these Drawings and Specifications and testing. Provide material and labor necessary to

complete the grounding systems, as indicated including incidental material not shown on the Drawings, which is necessary to make the system function and meet the requirements of these Specifications and the NEC.

B. GENERAL

- (1) “Furnish” means supply and delivery to the work site or location where material is to be installed.
- (2) “Install” means build into the work, complete and ready for use intended.
- (3) “Provide” means furnish and install complete and ready for use intended.
- (4) “Division 16” means this Section.

Products furnished shall conform to applicable ASTM and UL standards, and shall be UL listed or labeled. Grounding shall comply with the requirements of NFPA 70 (NEC).

C. CODES AND STANDARDS

<u>Sponsor</u>	<u>Number</u>	<u>Subject</u>
AASHTO	M 105	Manhole Frames and Covers
ANSI	C80.1	Rigid Steel Conduit, Zinc coated, Specifications
NEMA	TC 2	Electrical Plastic Tubing (EPT) and Conduit (EPC40 and EPC80)
NEMA	TC 3	PVC Fittings for Use with Rigid PVC Conduit and Tubing.
NFPA	70	National Electrical Code (NEC)

D. SUBMITTALS

Submit Contractor supplied material items, products and procedures to the Project Manager for approval prior to use on the Project.

- a. Submit Product Data on the following items:
- b. Raceways
- c. Fittings
- d. Metallic joint compounds, caulking and sealing compounds
- e. Pull cords
- f. Raceway tags and labels
- g. Conduit mandrels and brushes
- h. Warning tape
- i. PVC conduit joint cleaning solvent and cement
- j. Conduit end caps and plugs
- k. Raceway spacers
- l. Ground conductors

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- m. Connectors, bushings and fittings
 - n. Exothermic welding
 - o. Ground rods
- (1) Submit shop drawings for each of the following items:
- p. Manholes (each type) including cover and frame
 - q. Cable supports (racks)
 - r. Cable insulators
 - s. Cover inscription wording (see Drawings)
- (2) Mandrel log sheets shall be submitted upon completion.

E. INSPECTION

Materials, equipment, and workmanship are subject to inspection by the Project Manager. Correct work, materials, or equipment found to be deficient or not in accordance with the Contract at no additional cost to the Owner.

F. LICENSING AND CERTIFICATION REQUIREMENTS

Work installed under Division 16 shall be performed by electricians licensed in the jurisdiction except that testing may be performed by other technicians.

G. DRAWINGS AND CONTRACT DOCUMENTS

- a. Intent of Drawings
 - i. Verify dimensions before proceeding with the work.
 - ii. Drawings do not indicate all fittings, hardware or appurtenances required for a complete operating installation.
 - iii. Drawings are not intended to indicate the exact course of raceways or exact location of outlets. Raceway locations are subject to revision as may be necessary at the time of installation. Precise location of un-dimensioned features shall be subject to the Project Manager's approval.
 - iv. Departures from the Contract Documents shall not be made without written approval from the Project Manager.

H. AS-BUILT DRAWINGS

Maintain and keep current a set of project records and As-built Drawings. Submit as-built drawings for approval.

I. BASIC MATERIAL REQUIREMENTS

Furnished material shall be listed and labeled by Underwriters Laboratories, Factory Mutual, CSA, or ETL, wherever standards have been established by these agencies, and are acceptable to the Authority having Jurisdiction. Obtain approval from the Project Manager prior to using materials which are not listed or labeled. Products which have not been tested or certified for the use intended shall not be used when equivalent listed or labeled materials are available.

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Material shall be new, suitable for the use intended, and of the manufacturer's latest standard design. Materials and equipment provided shall fit within the space provided and shown on the Drawings.

Materials and equipment provided shall be standard products of manufacturers regularly engaged in the production of such material and equipment. Where two or more units of the same class of material or equipment are required, provide products of a single manufacturer. Similar component parts of different larger assemblies are not required to be the products of the same manufacturer. Discontinued materials or products shall not be used. Each type of material and equipment shall be of the same manufacture and quality throughout the Project.

J. PRODUCT SELECTION

For products specified by referenced standards only, select any product meeting the referenced standards, by any manufacturer. Provide documentation with Submittals demonstrating that the product meets the requirements of the referenced standards.

For products specified by one or more manufacturer's name(s), whether or not followed by the words "or approved equal," select the specified product by one of the listed manufacturers, or submit a substitution request for any product or manufacturer not specifically named, as described herein.

K. PRECAST CONCRETE MANHOLES

Manholes shall be precast with 28-day, 4,500 psi or greater compressive strength concrete and designed for AASHTO H-20 loading. Minimum dimensions for manholes are shown on the Drawings. Extension sections shall be used to increase vertical dimensions to those shown on the Drawings.

Slope floors toward drain points leaving no pockets or other non-draining areas. Provide a drainage outlet at the low point of the floor constructed with a heavy, cast iron, slotted or perforated cover grate.

Provide raceway entrances on all four sides. Knockout panels or precast individual raceway openings may be used. On sides where no raceways are installed under this Contract, provide knockout panels for future raceway installation. Provide knockouts for ground rods.

Manholes shall utilize heavy-duty type frames and covers made of cast iron and suitable for AASHTO H-20 street loading, except where otherwise specified on the Drawings. The covers shall weigh at least 500 pounds and have machined bearing surfaces. Provide indented type covers, solid top design, with two drop handles each.

Covers shall be identified by inscription according to the Drawings. For circular cast covers on manholes the inscription shall be located on the upper side of each cover and feature integral cast-in letters as indicated on the Drawings.

In manholes, provide 11 gauge galvanized steel cable racks with adjustable arms and approved insulators in each manhole. Set inserts in the concrete walls for the attachment of racks. Do not use bolts or studs embedded in concrete for attaching racks. Unless otherwise indicated, set racks and inserts on not greater than 3 foot centers around the entire inside perimeter of the manhole, arranged so that all raceway ends are clear for future cable installation. Provide hangers with 11 gauge galvanized steel arms 12 to 18 inches long and two insulators per arm as shown on the Drawings. Provide one pulling iron embedded in the concrete wall near the floor opposite each raceway bank entering manholes. Utilize $\frac{3}{4}$

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inch round stock securely fastened to the overall steel reinforcement before concrete is poured.

Utilize manhole hardware of steel, hot-dip galvanized after fabrication.

Damp-proofing compound shall be factory applied, one coat, on all outside surfaces. Damp-proofing shall be coal-tar bitumastic.

Ground rods shall be installed as indicated and in accordance with the NEC.

L. GALVANIZED RIGID STEEL CONDUIT (GRS)

Conduit shall comply with ANSI C80.1 and shall be hot-dip galvanized inside and out.

Threaded ends shall be galvanized using a zinc metallizing process that sprays or blasts molten or semi-molten zinc on the threaded area. Minimum size shall be 1-inch.

Approved manufacturers: LTV, Triangle, Allied or approved equal.

M. PVC SCHEDULE CONDUIT (PVC)

Conduit shall comply with NEMA TC 2, rigid polyvinyl chloride, Schedule 40. Conduit shall be sunlight resistant and suitable for 90°C conductors and exposed locations.

Approved manufacturers: Carlon, PW Pipe, Western Plastics or approved equal.

N. GRS CONDUIT FITTINGS

Conduit fittings shall be steel or cast malleable iron and shall be hot-dip or mechanically galvanized. Die-cast zinc fittings shall not be used.

Bushings and grounding bushings shall have molded phenolic or "Nylon" insulating collars. Grounding bushings shall have a "lay-in" tin-plated copper lug.

Locknuts two inches and smaller shall be heavy galvanized steel. Locknuts larger than two inches shall be galvanized malleable iron.

Hubs shall be galvanized steel or galvanized malleable iron, with insulating inserts and sealing rings. Hubs shall provide watertight conduit connections to boxes and enclosures.

O. PVC CONDUIT FITTINGS

Fittings for PVC conduit shall comply with NEMA TC 3. PVC conduit fittings shall be of the same manufacturer and type as the conduit.

P. RACEWAY TAGS AND LABELS

Tags and labels shall be made from nonferrous metals with raceway designations which shall be as shown on the Drawings or as directed by the Project Manager.

Q. RACEWAY SPACERS

Raceway spacers shall be plastic, lock together, and sized to create clear spaces as specified in the drawings or greater between raceways.

Acceptable manufacturers: Carlon, PW Pipe, or approved equal.

R. CONDUIT MANDRELS AND BRUSHES

Conduit brushes shall utilize round wire bristles for maximum cleaning of sand, grit, and obstructions from the conduit. They shall have a pulling eye on one end, and a smaller

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twisted eye on the other end, which shall allow for bi-directional pulling. Conduit brushes for 4-inch raceways shall be 3.87 inches in diameter with a working load rating of 200 pounds or greater.

Conduit mandrels shall be flexible and manufactured for cleaning out mud, dirt, and light obstacles from ducts before the installation of cable. Mandrels shall be suitable for pulling around tight bends and use a tapered profile that allows pulling in either direction. Pulling eyes shall be furnished on each end. The mandrel shall be fabricated from polyurethane or an approved equal material and shall not damage conduit inner walls. Conduit mandrels for 4-inch raceway shall be 3.75 inches in diameter with a working load rating of 4800 pounds or greater.

Conduit mandrels and brushes shall not damage conduit interior coating.

Conduit brushes and mandrels shall be manufactured for the purpose by a company regularly engaged in the production of electrical equipment, Greenlee Textron, Inc., or approved equal. Mandrels shall not be fabricated by the Contractor in the shop or field.

S. WARNING TAPE

Tape shall be heavy-gauge, yellow plastic for direct burial, six-inch minimum width for use in trenches containing electric circuits. Tape shall be made of material resistant to corrosive soil. Tape shall have printed warning that an electric circuit is located below the tape.

Approved manufacturers and types: ITT Blackburn Type YT, Griffolyn Co., Terra-Tape, or approved equal.

T. PULL CORD

Pull cord shall be 1/4 inch diameter twisted or braided nylon cordage with a minimum tensile strength of 1000 pounds.

U. CONCRETE ENCASEMENT

Concrete encasement shall be in accordance with Section 703 of the District Standard Specifications for Highways and Structures. Concrete shall have a 3000 PSI minimum, twenty-eight (28) day strength. Slump shall be 4 inches with a 1 inch tolerance.

V. GROUNDING MATERIALS

Bare conductors shall be Class B stranded, annealed copper and conform to ASTM B3. Provide sizes as shown on the Drawings. Aluminum, galvanized steel or clad conductors are not permitted.

Single insulated conductors shall conform to UL requirements for 600 volt insulated conductors, wet-location rated.

Lugs shall be suitable for attaching a ground conductor to equipment or metallic surfaces, compression type, tin or silver-plated copper, hydraulic tool applied, as manufactured by Thomas and Betts, Burndy, or approved equal. For conductors No. 2 AWG and larger, use NEMA 2-hole lugs.

Bolts and miscellaneous hardware for grounding shall be silicon bronze.

Jumpers shall be tin-plated copper, braided, and flexible.

Compression connectors for grounding in above ground dry locations, shall be Burndy YG series, or approved equal.

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Mechanical connectors are permitted only for grounding in exposed dry locations and only for attachment of grounding conductors to equipment, boxes, and raceways. The mechanical connectors shall be Burndy GB, GC, or approved equal.

W. EXOTHERMIC WELDING MATERIALS

Make exothermic welds using a process consisting of a system of standard manufactured molds and powdered metals which are placed in the mold along with the conductors. Exothermic materials and products shall be by one manufacturer. Cadweld as manufactured by ERICO Products, Inc., Thermoweld, or approved equal.

Compression or mechanical type grounding connections are not equal to exothermic welded connections for applications in concealed, underground, wet, or damp locations and are not permitted for these applications.

X. MANHOLE INSTALLATION REQUIREMENTS

b. Excavation and Bedding:

- i. The excavation shall be made to a depth to allow for the overall assembled height and bedding of manhole as shown on the Drawings. Provide and install risers as shown to bring the manhole to the required finish grade.
- ii. Over excavate at least 12 inches around the sidewalls of the manholes for ease of installation and to prevent sluffage.
- iii. Provide a minimum of 10 cubic feet of clean, round drain rock for drainage, as shown.
- iv. Install bedding, which shall consist of 12 inches minimum of 3/4 inch minus crushed rock, graded level and compacted in accordance with Section 207 of the District Standard Specifications for Highways and Structures.

c. Inspection and Setting:

- i. Excavation must be completely dewatered in accordance with Section 207 of the District Standard Specifications for Highways and Structures before setting manholes.
- ii. Notify the Project Manager seven days in advance of the installation of each manhole. Obtain approval of excavation and bedding before installing manhole.
- iii. Assemble by lowering each section into the excavation.
- iv. Lower the base section first, set level and firmly position before placing intermediate and top sections.
- v. Ensure that the seal surfaces between sections are clean and that the gaskets are in place.
- vi. Completed manhole shall be inspected by the Project Manager before backfilling.

d. Backfilling:

- i. Backfill around all manholes shall consist of good compactable material such as ¾inch minus crushed rock or sand. No voids shall remain between the manhole walls and native soil excavation.
 - ii. Backfilling shall not be done until manholes are completely assembled, making certain to compact the backfill progressively from the bottom to the top surface.
- e. Grouting:
 - i. Grout risers, covers, and raceway entering manholes with non-shrink cement grout consisting of two parts sand and one part cement and sufficient water to form a heavy plastic slurry.
 - ii. Apply grout in a manner to ensure filling of all voids in the joint being sealed.

Y. MANHOLE GROUNDING

All manholes shall be grounded in accordance with the NEC and as shown on the Drawings.

In each manhole, except for covers and cover mounting frames, all metallic components, including entering metallic raceway grounding bushings, cable racks, and inserts shall be grounded. Provide a minimum of one driven ground rod. Connect the rod to all metallic parts using a copper bond conductor. Grounding conductor shall be exothermically welded to the ground rod. Connection to other metallic parts may be by exothermic welding, or bolting using stainless steel hardware. The exothermic welding kit manufacturer's recommendations shall govern the preparation and installation of the grounding connections.

Z. MANHOLE IDENTIFICATION

Identify each manhole lid with the inscription shown on the Drawings.

In addition, identify each manhole with the manhole number in 3 inch high letters stenciled with black paint on white paint background just below the cover on the inside wall and on the bottom of the cover. Identify each duct entering the manhole with two inch high letters with black paint on a white paint background. Paint shall be exterior latex masonry type.

AA. RACEWAY INSTALLATION REQUIREMENTS

- f. General
 - i. Raceway types for specific locations shall be as shown on the Drawings. Where conduit types are not called out on the Drawings, or specified elsewhere in this Section, the conduit type shall be as specified herein.
 - ii. For the purpose of this Specification, raceways are considered 'subject to damage' in all locations.
- g. All empty raceways shall have a nylon pull-cord installed and secured at each end.
- h. Install raceways with not more than 270° of bend, total, in each raceway run between boxes, manholes, handholes, and raceway terminations.

- i. Install manufactured end caps or plugs on all raceway ends immediately after installation to prevent the entrance of liquids or foreign materials.
- j. Route raceways to avoid structural obstructions and to minimize crossovers.
- k. Install PVC conduit in accordance with manufacturer's instructions. Cut the conduit ends square, deburr and apply an approved solvent to clean the joint. Apply an approved cement and allow to set 24 hours before mandrelling, brushing, and installing conductors. Joint cleaning solvent and cement shall be approved by the conduit manufacturer and the Project Manager.
- l. Install all ground bushings and incidentals.
- m. All PVC conduits entering concrete manholes or pullboxes shall be terminated with bell-end fittings.

BB. REQUIREMENTS FOR RACEWAYS IN DUCTBANKS

Ductbanks shall be as per various size, details and lengths as shown in the plans.

In concrete-encased ductbanks, use Schedule 40 PVC conduit.

Galvanized rigid steel conduit (GRS) shall be used for ells in PVC conduit runs where the bend radius is less than 6 feet. Minimum permissible bend radius is 36 inches.

Schedule 40 PVC conduit may be used for bends in concrete encased ductbanks if the bend radius is 6 feet or greater (90 degrees of bend in 9.5 feet of conduit length). Bends in PVC conduit may be factory ells or field bent. Field bends in PVC conduit with less than 100 foot radius shall be formed hot using only a heater recommended by the conduit manufacturer.

Use conduit plugs during bending for all conduits. Remove plugs only after conduit has cooled. Field bends with radius greater than 100 feet may be formed cold. When placing cold bends, maintain adequate spacing from the inside of the bend to excavation walls for the required 3 inches of concrete.

CC. RACEWAY IN DUCTBANK PLACEMENT

Raceways shall be arranged as shown on the Drawings.

Slope all raceway for drainage to manholes and away from buildings. The minimum slope is 3 inches per 100 feet.

Bending radii indicated on Drawings and specified herein are to be considered minimum unless noted otherwise.

Secure raceways to prevent displacement during concrete encasement or earth backfilling. Make minor changes in location or cross-section as necessary to avoid obstructions or conflicts. Where raceway runs cannot be installed as shown because of conditions not discoverable prior to trenching, refer the condition to the Project Manager for direction before further work is done.

When placing concrete around the raceways, adjust the delivery chute so the fall distance of the concrete into the trench is minimal. Concrete direct fall distance shall be two feet or less. Use a splash board to divert the flow of concrete away from the trench sides and avoid dislodging soil and stones.

All plastic raceways may expand or contract as concrete is placed and cured. Therefore, when placing concrete encasement, always encase from one end of the duct section

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toward the other end to allow the free end to move. Never encase from each end of the section toward the center.

Place concrete continuously between manholes, pullboxes and block-outs. If the placement stops for more than 2 hours, 8 foot lengths of No. 4 reinforcement steel shall be placed longitudinally around the perimeter of the concrete envelope on 12-inch centers and with 2 inches minimum cover. Half of each 8 foot length shall be in each pour.

Where concrete encased ductbanks are terminated for future extension, stub out and cap all conduits at least one foot beyond the end of ductbank concrete. With top row closest to the end of concrete, stagger ends of horizontal rows of conduits for ease in making future ductbank extensions. Extend reinforcement steel to a point beyond all conduit ends, leaving at least four feet of each rebar embedded in ductbank concrete. The exact location and burial depth shall be surveyed, recorded and submitted to the field office. The conduit end shall be marked with a white painted, treated wood post.

Mandrel raceways and provide seals where specified or indicated. Ductbanks containing PVC conduits shall be mandrelled after concrete encasement but before backfilling.

DD. RACEWAY LABELLING

Identify each exposed raceway at each end with tags inscribed or stamped with the raceway number shown on the Drawings or as directed. Attach the tag to the raceway with a sunlight-resistant nylon tie.

EE. CONDUIT MANDRELLING AND CLEANING

- n. A log shall be kept for all conduits mandrelled. The mandrel log shall contain the following information in tabular format for each conduit mandrelled:
 - i. Conduit designation
 - ii. Conduit endpoints
 - iii. Conduit size
 - iv. Date mandrelled
 - v. Pass/fail for specified mandrel.
- o. After final assembly is in place, all conduits shall be thoroughly cleaned and mandrelled prior to installing wires or pull cords. Each conduit shall be mandrelled by pulling a mandrel sized in accordance with these specifications through the conduits followed by a steel bristle brush to clean the conduit. At the completion of cleaning and mandrelling, and before final acceptance, a 1/4-inch "Nylon" pull cord shall be installed in each empty conduit. The pull cord shall remain accessible from each end at all times.

FF. DUCTBANK INSTALLATION

Where required to support trench, construct formwork in accordance with Section 207 of the District Standard Specifications for Highways and Structures.

Coordinate installation of underground raceways with other construction work. Maintain any existing utilities in operation unless otherwise directed by the Project Manager.

The Contractor shall be responsible for coordinating placement of the concrete with other work. If the ductbank conflicts with other work it shall be relocated by Contractor at no additional expense to Owner.

Raceway spacers shall be placed at a minimum of 4'-6" intervals or as indicated on drawings.

Concrete shall encase all conduits at sides by a minimum of 3 inches and on the top and bottom by a minimum of 4 inches.

Protect and maintain all new or existing benchmarks or other reference points necessary for the completion of the work.

All ducts will be installed empty with conductors to be installed later. All ducts shall have a nylon pull-cord installed and secured at each end. Identify each duct at each end with brass tags inscribed or stamped with the duct origin and destination or manhole number. Attach the tag to the raceway with a sunlight resistant nylon tie. All empty conduits shall be capped to keep foreign material out of the conduits.

GG. DUCTBANK INSPECTION

Ductbanks shall be inspected and approved by the Project Manager before placing concrete encasement. Notify the Project Manager seven days before placing concrete. Clean trenches, dewater, and adjust clearances as directed to obtain the minimum concrete dimensions shown on the Drawings.

Cleaning and mandrelling conduits may be witnessed by the Project Manager. Notify the Project Manager 2 days before cleaning and mandrelling.

Concrete shall be placed the same day as Project Manager's approval.

HH. GROUNDING INSTALLATION

- a) **General** - Make underground grounding connections by exothermic welding. Connections located outdoors, or above ground in damp, or wet locations shall be by exothermic welding. Grounding connections shall not be soldered.

Use oxide-inhibiting compound for mechanical connections where copper to aluminum or copper to steel connections are made. Apply compound to copper, aluminum, and steel parts. Abrade aluminum contact surfaces after application of the inhibiting compound and before attachment of the bolted connection.

Grounding conductors and ground bonds shall not be spliced.

- b) **Ground Rods** – Ground rods shall be UL listed, steel copper-clad by the molten weld casting process. Rods shall be 3/4inch diameter minimum by 10 feet long.
- c) **Exothermic Welding** - Perform exothermic welding in accordance with the manufacturer's recommendations. Use welding cartridges and molds for the type of weld shown on the Drawings. Worn or damaged molds shall not be used.

Exothermically weld buried or embedded grounding connections; underground cable to cable splices; cable tees; cable crosses; grounding connections to rail, reinforcement steel, or structural steel, etc.; cable connections to ground rods; ground rod splices; and underground cable lug terminations.

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Surfaces to be welded shall be clean and dry. Prepare surfaces using a wire brush or file to expose bare metal prior to welding. After the welds have cooled, brush slag from the weld area and thoroughly clean joint. Where exothermic grounding connections are direct buried, coat connection with coal tar epoxy before backfilling.

Test welds by striking each weld hard with a heavy steel hammer. Replace defective or loose welds. When requested by the Project Manager, test welds for electrical resistance. Exothermic welds shall have a resistance equal to or less than a length of cable equal to the length of weld and the current carrying capacity of the weld shall be equal to or greater than the cable itself.

II. TRENCH EXCAVATION AND BACKFILL

Follow the requirements of Section 207 of the District Standard Specifications for Highways and Structures. Provide a minimum cover of three feet over all underground ductbanks unless otherwise indicated.

When trench walls are stable, use the walls of the trench as forms for concrete encasement. The trench shall be made no wider than necessary to provide the nominal concrete encased ductbank.

Excavations shall be dewatered and the excavation cleaned prior to raceway and concrete placement.

Provide a compacted base under concrete encased duct banks. Provide a base of 2 inches minimum sharp sand under direct buried ductbanks. Install yellow warning tape 12 inches above ductbanks.

Direct buried ductbanks may be backfilled with native soil when approved by the Project Manager. Remove rocks and foreign material prior to backfilling.

Restore surface pavement, sidewalk or earth as appropriate, in accordance with the District Standard Specifications for Highways and Structures.

JJ. MEASUREMENT AND PAYMENT

- a) There will be no measurement of work performed under this section.
- b) Payment for accepted manholes will be made at the lump sum price for each manhole, which price will be payment in full for furnishing all labor, material, top soil, landscape, concrete, sidewalk, road work, trench restoration, saw cutting, bedding, tools, equipment, incidentals, and performing all work necessary to complete the installation of the manholes as shown and as specified; and to repair the disrupted area to its preconstruction condition.

All work and material within the manholes shall be considered incidental and no separate or additional payment will be made. Incidental items for each manhole include grounding, cable supports, cable pulling provisions, raceway labeling, and drainage system. Excavation, base fill material, and backfill are considered incidental.

Payment will be made under:

Pay Item

Pay Unit

- c) Payment for the accepted ductbanks will be made at the lump sum price, which price will be payment in full for furnishing all labor, trench excavation,
- d) bedding, backfill, concrete, sidewalk restoration, road work, trench restoration, saw cutting, raceways and other materials, tools, equipment, incidentals, and performing all work necessary to complete the ductbanks as shown and as specified. Raceway terminations and fittings in manholes are considered incidental to underground ductbanks and no separate or additional payment will be made.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Furnish & Install Ductbank (various size)	(Item No. 618991) Lump Sum

(B) 7. TRACK ELECTRICAL TESTING (Item No 618993)

(C)

A. DESCRIPTION

The work includes the testing requirements for track-to-earth resistance.

B. GENERAL

The Contractor shall test individual sections of track as soon as all major construction work is completed. When only minor work remains to be completed, schedule this work early so that testing is not delayed. Since the purpose of this testing is to verify the electrical resistance quality of the track as the work proceeds, the Contractor will not be permitted to defer testing to consolidate the testing effort.

The trackwork shall be visually examined to ensure that there is no appreciable degree of debris, water, dirt, or other conductive material in electrical contact with the track or track components which could result in lowering of the effective track-to-earth resistance, thus producing incorrect data. The condition of the track section to be tested shall be recorded on the data sheet.

Notify the Project Manager at least two weeks prior to testing any track section. Final acceptance of tests for track-to-earth and rail-to-rail resistances will be made by the Project Manager subsequent to the completion of the in-progress tests specified in this Section.

C. SUBMITTALS

The following submittals shall be made:

- a. Detailed written procedure for the testing.
- b. List of instruments to be used. List shall include the manufacturer's name, model number, serial number and calibration certificate for each instrument.
- c. Test data sheet showing the proposed format for the test data documentation.

- d. Test report for each section shall be submitted within 14 days after completion of each test section.

D. TESTING INSTRUMENTATION AND EQUIPMENT

Voltmeter, dc - Multi-scale, center zero, analog, minimum input impedance of 50,000 ohms/volt, accurate to within two percent full scale. Full scale response time shall be no more than 0.5 second. Full scale ranges shall be as follows:

- 0 to 10 millivolts
- 0 to 100 millivolts
- 0 to 1 volt
- 0 to 10 volts
- 0 to 100 volts

Ammeter, dc - Multi-scale, maximum shunt voltage drop of 20 millivolts per ampere, accurate to within two percent of full scale, with the following full scale ranges:

- 0 to 1 ampere
- 0 to 10 amperes
- 0 to 100 amperes

Millammeter, dc - Multi-scale, maximum shunt voltage drop of 20 millivolts per ampere, accurate to within two percent of full scale, with the following full scale ranges:

- 0 to 10 milliamperes
- 0 to 100 milliamperes

Shunts - An alternative to the ammeter and milliammeter is a millivolt meter and external shunts covering the listed current ranges. Meter and shunt combinations, if used shall be accurate to within two percent of full scale, covering the full scale ranges listed above. Maximum shunt voltage drop shall be 20 millivolts per ampere.

Ohmmeter - Multi-scale, accurate to within two percent of full scale, with a resolution of 0.1 ohm to 20 megohms.

Power Source - Six or twelve volt automotive type wet cell battery. For circuits having a high internal resistance, two or more batteries may be required.

Test Wires - Single conductor cable, stranded copper. Wires shall have minimum 600 volt neoprene insulation in perfect condition. Provide sufficient length(s) as required to establish test circuits with appropriate terminal lugs and clamp or clip terminations.

Reference Electrode - Saturated copper-copper sulfate reference half-cell with a length of 5 inches and a ceramic porous plug, diameter of 1-3/8 or 3 inches.

Electrical Contact Locator - Tinker and Razor, Model PD, Pearson Detector or approved equal.

E. TRACKWORK ELECTRICAL TESTS

Electrical track-to-earth resistance tests will be required for all trackwork including special trackwork areas. There are two basic methods for determining the resistance-to-earth characteristics of a given track section. One method, described below, shall be used for discrete, electrically separate sections of track where track sections adjacent to the

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From 14th & H Street to Oklahoma Avenue

particular section under test have not yet been installed. The second method shall be used for testing track sections, which are electrically and physically interconnected to adjacent track sections. The purpose of this Section is to establish the basic electrical test connections for the track-to-earth resistance measurements and present the appropriate resistance formulae. Note that variations in actual track configurations to be tested will occur.

Electrically Separate Track Sections: Modify as required based on actual field conditions.

- e. Ensure electrical continuity between the rails of the track section being tested by the use of existing cables, or by installing temporary wire connections between the rails at both ends of the track section under test.
- f. At one end of the track section under test establish a current circuit (I) between the rails and a low resistance ground contact to earth and a rail-to-earth voltage measuring circuit (V_{g1}) using a low resistance ground contact to earth. The ground contact used for the voltage measuring circuit shall not be the same as the contact for the current circuit.
- g. With the current circuit (I) closed, reduce the meter ranges of both the current and voltage circuits until the lowest readable scales are reached. Read and record the current “on” values for current and voltage circuits.
- h. Open the current circuit (I) and immediately read and record the “off” values for the current and voltage circuits. Repeat a minimum of three times for accuracy.
- i. Calculate the change in potential, ΔV_{g1} , and the change in current, ΔI , for each reading ($\Delta I = I_{on} - I_{off}$ etc.).
- j. Calculate the effective track-to-earth resistance (R_{g1}) by dividing the summation of the change in potential, $\Sigma \Delta V_{g1}$, by the summation of the change in current, $\Sigma \Delta I$.

$$R_{g1} = \Sigma \Delta V_{g1} / \Sigma \Delta I = \text{volt/ampere}$$

- k. In a similar manner obtain track-to-earth data at the opposite end of the track section under test using the current circuit established in (b) above.

$$R_{g2} = \Sigma \Delta V_{g2} / \Sigma \Delta I = \text{volt/ampere}$$

Compare R_{g1} with R_{g2} . A difference between these two values of greater than five percent could indicate attenuation resulting from the relationship of the track section’s longitudinal resistance and the track-to-earth resistance. A significant variation between R_{g1} and R_{g2} can be expected in the event that the track-to-earth resistance falls below acceptable levels.

- l. Determine the effectiveness of the rail insulating joints (if applicable) at both ends of the track section by obtaining the effective resistance across the joints by using a test method similar to that described above and using the current circuit established in (b) above.

$$R_{1A} = V_{1A} / I = \text{volt/ampere}$$

and

$$R_{2A} = V_{2A} / I = \text{volt/ampere}$$

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Compare R_{1A} with R_{g1} and R_{2A} with R_{g2} . Measured values should be within plus/minus five (5) percent of R_{g1} , or R_{g2} . Deviations of greater than five percent are most likely indicative of a defective rail insulating joint at the specific location(s) where the measurement was made and will require further investigation

- m. Calculate average resistance to earth of the test section;

$$R_{AVG} = (R_{g1} + R_{g2})/2 = \text{ohms}$$

and multiply by the length of the test section in thousands (1000s) of meters.

$$R_T = R_{AVG} \times L = \text{ohms}/1000 \text{ feet}$$

where: L = Length of test section in 1000s of feet

Electrically Interconnected Track Sections: Modify test procedures as required to suit actual field conditions.

- n. Establish a current circuit (I) between the track system and a low resistance earth contact and a track-to-earth voltage measuring circuit (V_{g1}) using a low resistance earth contact. The voltage circuit earth contact shall not be the same as the earth contact used in the current circuit.
- o. With the current circuit (I) closed, reduce the meter ranges of both circuits until the lowest readable scales are reached. Read and record the “on” values for current and voltage.
- p. Open the current circuit (I) and immediately read and record the “off” values for current and voltage. Repeat a minimum of three times for accuracy.
- q. Calculate the change in potential, ΔV_{g1} , and the change in current, ΔI , for each reading ($\Delta I = I_{on} - I_{off}$ etc.).
- r. Calculate the effective track-to-earth resistance by dividing the summation of change in voltage, $\Sigma \Delta V_{g1}$, by the summation of change in current, $\Sigma \Delta I$.

$$R_{g1} = \Sigma \Delta V_{g1} / \Sigma \Delta I = \text{volt/ampere}$$

This resistance value represents the apparent resistance of the track section under test in parallel with the adjacent track sections. Usually the composite resistance to earth of the adjacent track sections will be lower than that of the test section because of the greater amount of trackage involved.

- s. Obtain additional track-to-earth couplings at other locations as required.

$$R_{g2} = \Sigma \Delta V_{g2} / \Sigma \Delta I = \text{volt/ampere}$$

$$R_{g3} = \Sigma \Delta V_{g3} / \Sigma \Delta I = \text{volt/ampere}$$

- t. Maintaining the current circuit (I), measure the percentage of change in current flow on the rail at the locations specified using a maximum of 50 feet of rail as a current measuring shunt. The current percentage shall be calculated as follows:

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$$\% I_A = (S \sum V_A \times K_R \times 100) / S \sum I$$

where:

$\% I_A$ = percentage of I at location "A"

$S \sum V_A$ = summation of change in V_A caused by I, for the total number of readings taken (millivolts).

$S \sum I$ = summation of change in I for the total number of readings taken (amperes)

K_R = conversion factor for the millivolt shunt circuit (amperes/millivolt)

$K_R = 1 / (L \times R_R \times 1000 \text{ mV/V})$ where:

L = length of rail used for the millivolt shunt circuit (feet)

R_R = longitudinal resistance of running rail per one foot length (ohms/foot)

Note: Using theoretical resistance values of 8.68×10^{-6} ohm/foot for RI - 52 rail, theoretical K_R values, for a 50 of single rail are:

$$K_R = 2.30 \text{ amperes/millivolt (RI-52 and 115 lb. rail)}$$

A sufficient sampling of actual longitudinal resistance factors must be measured to establish a statistical mean value for K_R used in the preceding calculations.

u. Similar to step (f) above, obtain current flow percentages at the locations specified. Calculate the following:

$$\% I_B = (S \sum V_B \times K_R \times 100) / S \sum I$$

$$\% I_C = (S \sum V_C \times K_R \times 100) / S \sum I$$

$$\% I_D = (S \sum V_D \times K_R \times 100) / S \sum I$$

$$\% I_E = (S \sum V_E \times K_R \times 100) / S \sum I$$

$$\% I_F = (S \sum V_F \times K_R \times 100) / S \sum I$$

$$\% I_G = (S \sum V_G \times K_R \times 100) / S \sum I$$

$$\% I_H = (S \sum V_H \times K_R \times 100) / S \sum I \quad \text{and}$$

$$\% I_S = \% I_A + \% I_B + \% I_C + \% I_D$$

$$\% I_R = \% I_E + \% I_F + \% I_G + \% I_H$$

A significant difference between the values obtained for $\% I_A$ through $\% I_D$ and/or between the values obtained for $\% I_E$ through $\% I_H$ may indicate that the electrical conductance-to-earth is not uniform over the entire track section being evaluated.

v. Calculate the average resistance-to-earth of the test section

$$R_{AVG} = (R_{g1} + R_{g2} + R_{g3}) / 3 (\% I_S - \% I_R)$$

where:

$\% I_S$ and $\% I_R$ must be expressed as decimals

w. Calculate the average track-to-earth resistance for the test section on a 1000 feet of track basis (2 rails).

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$$R_T = R_{AVG} \times L \times 2 = \text{ohms/1000 feet of track (2 rails)}$$

where:

L = Length of track in multiples of 1000 feet

Rail-to-rail resistance tests shall be done on individual track segments, including special trackwork, forming track circuits and bounded by insulated rail joints. For test purposes all made electrical connections to these track segments, except turnout fouling jumpers and other turnout and crossing bonds, shall be disconnected. The following procedures shall be modified as required based on actual field conditions:

- x. Establish a current circuit (I) between the two rails of the track segment under test, and a rail-to-rail voltage measuring circuit (VR). The rail contacts for the voltage measuring circuit shall not be the same as the rail contacts for the current circuit.
- y. With the current circuit (I) closed, reduce the meter ranges of both the current and voltage circuit until the lowest readable scales are reached and record the current “on” values for current and voltage circuits.
- z. Open the current circuit (I) and immediately read and record the “off” values for the current and voltage circuits. Repeat a minimum of three times for accuracy.
- aa. Calculate the change in potential (ΔVR), and the change in current, (ΔI), for each reading ($\Delta I = I_{on} - I_{off}$ etc.).
- bb. Calculate the effective rail-to-rail resistance R_R by dividing the summation of the change in potential, ($\Sigma \Delta VR$), by the summation of the change in current, ($\Sigma \Delta I$).

$$R_R = \Sigma \Delta VR / \Sigma \Delta I$$

- cc. Multiply the effective rail-to-rail resistance R_R by the length of the track segment under test in thousands (1000s) of feet.

$$R_{R-R} = R_R \times L = \text{ohms/1000 feet}$$

where:

L = length of test segment in 1000s of feet.

F. MINIMUM ACCEPTABLE RESISTANCE VALUES

The minimum acceptable new construction track-to-earth resistance is 250 ohms for 1000 feet of single track (two rails).

If the test results show that any section of trackwork fails to meet the acceptance criteria, the Contractor’s testing agency shall check all instrumentation setups; verify that the equipment is operating properly; inspect the section under test for installation deficiencies and correct any problems detected including cleaning of the trackwork as may be required to assure proper data collection. Following this the tests shall be repeated as soon as possible. If the retest results in failure to meet acceptance criteria the Contractor shall notify the Project Manager and may be required to provide manpower and equipment, at no added cost to the project, to locate and correct the cause for failure if so directed the Project Manager.

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G. MEASUREMENT AND PAYMENT

There will be no measurement of work performed under this section.

Payment for the accepted Track Electrical Testing will be made at the lump sum price, which will payment in full for furnishing all labor and materials, tools, equipment, reports and incidentals, and performing all work necessary to complete the track Electrical Testing as specified.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Track Electrical Testing (Item No. 618993)	LS

General Decision Number: DC070001 07/06/2007 DC1

Superseded General Decision Number: DC20030001

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	02/09/2007
1	05/04/2007
2	05/11/2007
3	05/18/2007
4	06/08/2007
5	06/15/2007
6	06/22/2007
7	06/29/2007
8	07/06/2007

ASBE0024-001 10/01/2006

	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.....	\$ 27.13	13.13

ASBE0024-002 10/01/2006

	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.....	\$ 18.00	6.45

ASBE0024-005 10/01/2006

	Rates	Fringes
Fire Stop Technician Includes the application of materials or devices within or around penetrations and openings in all rated wall or floor assemblies, in order to prevent the passage of fire, smoke or other gases. The application includes all components involved in creating the rated barrier at perimeter slab edges and exterior cavities, the head of gypsum board or concrete walls, joints between rated wall or floor components, sealing of penetrating items and blank openings.....	\$ 22.00	6.24

BOIL0193-001 10/01/2006		
	Rates	Fringes
BOILERMAKER.....	\$ 32.06	16.46

BRDC0001-001 04/30/2007		
	Rates	Fringes
Bricklayer.....	\$ 25.90	6.19

CARP0132-001 05/01/2007		
	Rates	Fringes
Carpenter/Lather.....	\$ 24.37	6.15
Piledriver.....	\$ 22.87	6.85

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

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

ELEC0026-001 06/04/2007		

	Rates	Fringes
Electrician.....	\$ 33.45	11.35+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.

 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 01/01/2006

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

 ENGI0077-001 05/01/2007

	Rates	Fringes
Power equipment operators: (HEAVY AND HIGHWAY CONSTRUCTION)		
GROUP 1.....	\$ 27.64	6.82+a
GROUP 2.....	\$ 27.18	6.82+a
GROUP 3.....	\$ 26.47	6.82+a
GROUP 4.....	\$ 24.44	6.82+a
GROUP 5.....	\$ 19.90	6.82+a
GROUP 6.....	\$ 29.01	6.82+a

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

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

GROUP 2: Backhoes, cableways, cranes, cherry pickers,

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

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

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

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

GROUP 6: Master mechanic.

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

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

 * ENGI0077-002 06/01/2007

	Rates	Fringes
Power equipment operators: (PAVING AND INCIDENTAL GRADING)		
GROUP 1.....	\$ 23.00	5.50
GROUP 2.....	\$ 20.05	5.50
GROUP 3.....	\$ 17.19	5.50
GROUP 4.....	\$ 15.85	5.50
GROUP 5.....	\$ 23.50	5.30

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 07/01/2006

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

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

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

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

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

GROUP 4. Trenching machines above 83 inches.

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

GROUP 6: Air Compressors (Tunnel).

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

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

GROUP 9: Mechanics.

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

GROUP 11: Rollers.

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

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

IRON0005-001 06/01/2006

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

IRON0201-001 05/01/2007

	Rates	Fringes
Ironworkers:		
Reinforcing.....	\$ 24.80	12.08

LABO0456-006 06/01/2006

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

LABO0657-003 06/01/2006

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

LABORERS CLASSIFICATIONS:

GROUP 1: Carloaders, choker setter, concrete crewman, crushed feeder, demolition laborers, including salvaging all material, loading, cleaning up, wrecking, dumpmen, flagmen, fence erector and installer (other than chain link), including installation and erection of fence, guard rails, medial rails,

reference posts, guide posts and right-of-way markers, form strippers, general laborers, railroad track laborers, riprap man, scale man, stake jumper, structure mover, includes foundation, separation, preparation, cribbing, shoring, jacking and unloading of structures, water nozzleman, timber buckler 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 nozzlelemen and potman.

GROUP 6: Powderman, master form setters.

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

GROUP 8: Licensed powdermen.

LABO0657-004 06/01/2006

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

Skilled Toxic and
 Hazardous Waste Removal
 Laborers.....\$ 18.61 3.84

 LABO0657-005 06/01/2006

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

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

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

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

GROUP 4: Mucking Machine Operator (Air).

 LABO0657-006 06/01/2006

	Rates	Fringes
Laborers: (TUNNEL, RAISE AND SHAFT (COMPRESSED AIR) FOR HEAVY CONSTRUCTION ONLY		
Gauge Pressure Work Period		
(Pounds)	(Hours)	
1-14	7.....	\$ 24.16 3.84
14-18	6.....	\$ 28.43 3.84

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

 LABO0657-007 06/01/2006

	Rates	Fringes
Laborers: (PAVING AND INCIDENTAL GRADING) Asphalt Raker & Concrete		

Saw Operator.....	\$ 16.76	4.10
Asphalt Shoveler.....	\$ 16.23	4.10
Asphalt Tammer & Concrete Shoveler.....	\$ 16.47	4.10
Jack Hammer.....	\$ 16.66	4.10
Laborer.....	\$ 16.12	4.10
Sand Setter & Form Setter...	\$ 17.37	4.10

MARB0002-003 05/01/2007

	Rates	Fringes
Marble & Stone Mason Includes Pointing, Caulking and Cleaning of All Types of Masonry, Brick, Stone and Cement Structures.....	\$ 31.00	11.52

MARB0003-001 05/01/2007

	Rates	Fringes
Mosaic & Terrazzo Worker, Tile Layer Marble Mason and Tile Layer.\$	24.67	8.78
Terrazzo Worker.....	\$ 25.42	8.78

MARB0003-004 05/01/2007

	Rates	Fringes
Marble, Tile & Terrazzo Finisher.....	\$ 19.84	7.90

* PAIN0051-001 06/01/2007

	Rates	Fringes
Painters: All Industrial Work.....	\$ 24.73	7.31
Bridges, Heavy Highway, Lead Abatement and Flame/Thermal Spray.....	\$ 27.87	7.31
Commercial and Mold Remediation, Painters, Wallcovers and Drywall Finishers.....	\$ 23.31	7.31
Metal Polishing and Refinishing.....	\$ 24.31	7.31

PLAS0891-001 05/01/2007

	Rates	Fringes
Cement Masons: HEAVY CONSTRUCTION ONLY.....	\$ 26.15	6.01

PLAS0891-002 06/01/2007

	Rates	Fringes
Cement Masons: (PAVING & INCIDENTAL GRADING)		
Cement Masons.....	\$ 17.35	4.35
Concrete Saw Operators.....	\$ 17.35	4.35
Form Setters.....	\$ 17.35	4.35

PLUM0005-001 08/01/2006

	Rates	Fringes
Plumber.....	\$ 31.52	12.59+a
a. PAID HOLIDAYS: Labor Day, Veterans' Day, Thanksgiving Day and the day after Thanksgiving, Christmas Day, New Year's Day, Martin Luther King's Birthday, Memorial Day and the Fourth of July.		

PLUM0602-005 08/01/2006

	Rates	Fringes
Steamfitter, Refrigeration & Air Conditioning Mechanic.....	\$ 31.27	12.82+a
a. PAID HOLIDAYS: New Year's Day, Martin Luther King's Birthday, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day and the day after Thanksgiving and Christmas Day.		

* SHEE0100-001 07/01/2007

	Rates	Fringes
Sheet Metal Worker.....	\$ 31.54	11.65

TEAM0639-001 03/07/2004

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

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

TEAM0639-002 06/01/2005

Rates	Fringes
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Truck drivers: (HEAVY & HIGHWAY CONSTRUCTION)

Concrete Mixer Drivers.....\$ 17.40 5.82+a+b

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

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

TEAM0639-005 09/01/2006

Rates Fringes

Truck drivers: (PAVING & INCIDENTAL GRADING)

All paving projects where the grading is incidental to the paving.....\$ 14.05 3.69

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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

WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

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

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

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

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

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

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

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

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END OF GENERAL DECISION