

ORDER NO.: K60
CONTRACT ID. NO.: C0000111466C01

Form C-6a
Rev. 3-22-05

CNSP (F) 1-9-06

**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
BID PROPOSAL AND CONTRACT**

ROUTE NUMBER: 95

FHWA NUMBER: NHFP-095-1(364)

PROJECT NUMBER: 0095-020-818, B660, C501

COUNTY: CHESTERFIELD

DISTRICT: RICHMOND



DESCRIPTION: SMART SCALE I-95 AUXILIARY LANES & BRIDGE REHAB

FROM: 0.381 MI. N OF RTE. 10

TO: 1.469 MI. N OF RTE. 10

DATE BID SUBMITTED: 10:00 A.M., WEDNESDAY, MARCH 27, 2024

ORDER NO.: K60
CONTRACT ID. NO.: C0000111466C01

Form C-118
Rev. 7-6-05

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
NOTICE TO BIDDERS

As a matter of information, the bidder's attention is directed to the points noted herein. Every point enumerated below is fully covered by proposal documents that describe them in detail. Bidders should check their proposal against all requirements, as strict compliance with all provisions is mandatory.

1. Bids shall be filed electronically through Bidx (www.bidx.com/main/index.html) at the times designated in the Notice of Advertisement for Bids. For information see (<http://cabb.virginiadot.org/cabb/>)
2. Unless otherwise specified or permitted in the proposal, prices shall be submitted on all items shown in the proposal.
3. Proposals conditioned by proposed alternates, other than those specified or permitted, or by reserving the right to accept or reject an award or to enter into a contract pursuant to an award will not be considered.
4. A bid total shall be shown in each space provided.
5. Bid bonds shall conform to Section 102.07. The bid bond number shall be placed in the appropriate space in your electronic bid. As an alternative you may complete the bottom line of the Form C-24. This form may be mailed or faxed but must be received prior to the opening of the bids.
6. Joint venture proposals shall show the Firm Name of each party and shall be signed by an authorized representative of each Firm. A letter shall be filed with the prequalification office describing responsibility of each firm and the amount of maximum capacity pledge by each firm of a joint venture.

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Form C-24
Rev. 7-6-05

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
PROPOSAL GUARANTY

KNOW ALL MEN BY THESE PRESENTS, THAT WE _____ As principal, and _____ Surety, are held and firmly bound unto the Commonwealth of Virginia as obligee, in the amount of FIVE PERCENT OF THE DOLLAR VALUE OF THE BID, lawful money of the United States of America, for the payment of which, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally and firmly by these presents.

SIGNED, sealed and dated this _____ Day of _____, 20 _____

WHEREAS, the above said principal is herewith submitting its proposal for:

PROJECT NUMBER: 0095-020-818, B660, C501

NOW, THEREFORE, the condition of the above obligee is such, that if the aforesaid principal shall be awarded the contract upon said proposal and shall within the time specified in the Specifications after the notice of such award enter into a contract and give bond for the faithful performance of the contract, then this obligation shall be null and void; otherwise to remain in full force and effect and the principal and surety will pay unto the obligee the difference in money between the amount of the bid of the said principal and the amount for which the obligee may legally contract with another party to perform the said work if the latter amount be in excess of the former; but in no event shall the liability exceed the penal sum hereof.

| | |
|---|--|
| _____ (Principal*) | _____ (Surety Company) |
| By: _____ (Officer, Partner or Owner) (Seal) | By: _____ (Attorney-in-Fact**) (Seal) |
| _____ (Principal*) | _____ (Address) |
| By: _____ (Officer, Partner or Owner) (Seal) | By: _____ (Surety Company) |
| _____ (Principal*) | _____ (Attorney-in-Fact**) (Seal) |
| By: _____ (Officer, Partner or Owner) (Seal) | By: _____ (Address) |

*Note: If the principal is a *joint venture*, each party thereof must be named and execution made by same hereon. If there is more than one surety to the bid bond, each surety must be named and execution shall be made by same hereon.

Electronic Bid Only: In lieu of completing the above section of the Contract Performance Bond, the Principal shall file an Electronic Bid Bond when bidding electronically. By signing below the Principal is ensuring the identified electronic bid bond has been executed and the Principal and Surety are firmly bound unto the Commonwealth of Virginia under the same conditions of the bid bond as shown above.

| | | |
|----------------------------------|------------------------------|------------------------------|
| _____ Electronic Bid Bond ID# | _____ Company/Bidder Name | _____ Signature and Title |
|----------------------------------|------------------------------|------------------------------|

**Attach copy of Power of Attorney

ORDER NO.: K60
CONTRACT ID. NO.: C0000111466C01

Form C-48
Rev. 2-23-11

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
SUBCONTRACTOR/SUPPLIER SOLICITATION AND UTILIZATION FORM (ALL BIDDERS)

PROJECT NO.: 0095-020-818, B660, C501

CONTRACT ID. NO.: C0000111466C01

FHWA NO: NHFP-095-1(364)

DATE SUBMITTED _____

All bidders, including DBEs bidding as Prime Contractors, shall complete and submit the following information as requested in this form within ten (10) business days after the opening of bids.

The bidder certifies this form accurately represents its solicitation and utilization or non-utilization, as indicated, of the firms listed below for performance of work on this contract. The bidder also certifies he/she has had direct contact with the named firms regarding participation on this project.

BIDDER _____ SIGNATURE _____

TITLE _____

SUBCONTRACTOR/SUPPLIER SOLICITATION AND UTILIZATION (ALL)

| VENDOR NUMBER | NAME OF SUBCONTRACTOR/SUPPLIER | TELEPHONE NUMBER | DBE OR NON-DBE | UTILIZED (Y/N) |
|---------------|--------------------------------|------------------|----------------|----------------|
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NOTE: ATTACH ADDITIONAL PAGES, IF NECESSARY.

BIDDER MUST SIGN EACH ADDITIONAL SHEET TO CERTIFY ITS CONTENT AND COMPLETION OF FORM.

ORDER NO.: K60
CONTRACT ID. NO.: C0000111466C01

Form C-7
Rev. 1-19-12
PAGE 1 of

TERMS OF THE PROPOSAL\CONTRACT
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
SUBMITTED: 10:00 A.M., WEDNESDAY, MARCH 27, 2024

PROJECT NUMBER: 0095-020-818, B660, C501
ROUTE NUMBER: 95
FHWA NUMBER: NHFP-095-1(364)
DESCRIPTION: SMART SCALE I-95 AUXILIARY LANES & BRIDGE REHAB
FROM: 0.381 MI. N OF RTE. 10
TO: 1.469 MI. N OF RTE. 10

DISTRICT: RICHMOND COUNTY: CHESTERFIELD

I/we declare that no other person, firm or corporation is interested in this proposal; that I/we have carefully examined the plans, job specifications, current Road and Bridge specifications, and all other documents pertaining thereto and thoroughly understand the contents thereof; that I/we meet the prequalification requirements for bidding on this proposal; that I/we understand that the plans and current Road and Bridge specifications, are a part of this proposal; that all of the quantities shown herewith are a part of this proposal; that all the quantities shown herewith are approximate only; that I/we have examined the location of the proposed work and source of supply of materials; and that I/we agree to bind myself/ourselves upon award by the Commonwealth under this proposal to a contract with necessary surety bond to start work according to project specifications, and to complete all work in accordance with the plans, job specifications and current Road and Bridge Specifications within the time limit set forth in the contract.

COMPLETION DATE: NOVEMBER 2, 2026

BID TOTAL \$ _____

Attached is a bond conforming to the requirements of the current Road and Bridge Specifications, it being understood that such bond is to be forfeited as liquidated damages if, upon acceptance of the terms of this proposal, I/we fail to execute the contract and furnish bond as provided in the current Road and Bridge Specifications.

(Names of Individual(S), Firm(S) Or Corporation)

Street Address City State Zip Code Vendor#/Fin#

Print Name Signature Title

In consideration of the commitments made as shown herein, the Commonwealth of Virginia by The Commonwealth Transportation Commissioner agrees to pay for all items of work performed and materials furnished at the unit price(s) and under the conditions set forth in this proposal, in witnessed by the affixing of the name below.

Contract Execution Date _____ By _____

CHIEF ENGINEER
VIRGINIA DEPARTMENT OF TRANSPORTATION

Proposal ID: C0000111466C01 Oversight/State Project No.: 0095-020-818, B660, C501
 Order No.: K60 Federal Project No.: NHFP-095-1(364)

Contractor: _____

SECTION: 0001 REGULAR BID ITEMS

Cat Alt Set ID: Cat Alt Mbr ID:

| Proposal Line Number | Spec No. | Item ID Description | Approximate Quantity and Units | Unit Price | | Bid Amount | |
|----------------------|----------|--|--------------------------------|------------|-------|------------|-------|
| | | | | Dollars | Cents | Dollars | Cents |
| 0010 | ATTD | 108SP20-0001 BASELINE PROGRESS SCHEDULE | LUMP SUM | LUMP SUM | | | |
| 0020 | ATTD | 108SP20-0002 PROGRESS SCHEDULE UPDATES | 24.000 EA | | | | |
| 0030 | 301 | 301SD20-0001 CLEARING AND GRUBBING | LUMP SUM | LUMP SUM | | | |
| 0040 | ATTD | 302SD20-0002 BEDDING MATL. AGGR. NO. 57 | 3,301.500 TON | | | | |
| 0050 | 302, 406 | 302SD20-0005 REINF. STEEL | 1,280.000 LB | | | | |
| 0060 | 302 | 302SD20-0013 ENDWALL EW-12 | 33.000 EA | | | | |
| 0070 | 302 | 302SD20-0023 15" PIPE (CMP) | 28.000 LF | | | | |
| 0080 | 302 | 302SD20-0025 15" CONC. PIPE | 242.000 LF | | | | |
| 0090 | 302 | 302SD20-0028 18" PIPE (CMP) | 15.000 LF | | | | |
| 0100 | 302 | 302SD20-0030 18" CONC. PIPE | 41.000 LF | | | | |
| 0110 | 302 | 302SD20-0049 30" CONC. PIPE | 10.000 LF | | | | |
| 0120 | 302 | 302SD20-0057 36" PIPE | 30.000 LF | | | | |
| 0130 | 302 | 302SD20-0059 36" CONC. PIPE | 27.000 LF | | | | |
| 0140 | 302 | 302SD20-0069 48" CONC. PIPE | 63.000 LF | | | | |

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|----------------------|----------|--|--------------------------------|------------|-------|------------|-------|
| | | | | Dollars | Cents | Dollars | Cents |
| 0150 | 302 | 302SD20-0081 60" CONC. PIPE | 57.000 LF | _____ | _____ | _____ | _____ |
| 0160 | 302 | 302SD20-0198 15" END SECTION ES-1 OR 2 | 1.000 EA | _____ | _____ | _____ | _____ |
| 0170 | 302 | 302SD20-0208 30" END SECTION ES-1 OR 2 | 1.000 EA | _____ | _____ | _____ | _____ |
| 0180 | 302 | 302SD20-0214 48" END SECTION ES-1 OR 2 | 3.000 EA | _____ | _____ | _____ | _____ |
| 0190 | 302 | 302SD20-0242 DROP INLET DI-2B,L=6' | 2.000 EA | _____ | _____ | _____ | _____ |
| 0200 | 302 | 302SD20-0259 DROP INLET DI-2C,L=6' | 2.000 EA | _____ | _____ | _____ | _____ |
| 0210 | 302 | 302SD20-0662 MANHOLE MH-1 OR 2 | 9.400 LF | _____ | _____ | _____ | _____ |
| 0220 | 302 | 302SD20-0663 FRAME & COVER MH-1 | 1.000 EA | _____ | _____ | _____ | _____ |
| 0230 | 303 | 303SD20-0001 REGULAR EXCAVATION | 32,745.000 CY | _____ | _____ | _____ | _____ |
| 0240 | 303 | 303SD20-0013 GEOTEXTILE EMBANKMENT STAB. | 8,453.000 SY | _____ | _____ | _____ | _____ |
| 0250 | 303 | 303SD20-0016 MINOR STR. EXCAV. PIPE CULVERT | 201.000 CY | _____ | _____ | _____ | _____ |
| 0260 | 303 | 303SD20-0018 SLOPE DRAIN | 5.000 EA | _____ | _____ | _____ | _____ |
| 0270 | 303 | 303SD20-0019 EROSION CONTROL MULCH | 2,338.000 SY | _____ | _____ | _____ | _____ |
| 0280 | 303 | 303SD20-0021 TEMPORARY DIVERSION DIKE | 1,852.000 LF | _____ | _____ | _____ | _____ |

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| | | | | Dollars | Cents | Dollars | Cents |
| 0290 | 303 | 303SD20-0022 CHECK DAM ROCK TY. I | 17.000 EA | _____ | _____ | _____ | _____ |
| 0300 | 303 | 303SD20-0023 CHECK DAM ROCK TY. II | 67.000 EA | _____ | _____ | _____ | _____ |
| 0310 | 303 | 303SD20-0028 DEWATERING BASIN EC-8 | 21.000 EA | _____ | _____ | _____ | _____ |
| 0320 | 303 | 303SD20-0029 SILTATION CONTROL EXCAVATION | 1,041.000 CY | _____ | _____ | _____ | _____ |
| 0330 | 303 | 303SD20-0030 INLET PROTECTION TYPE A | 10.000 EA | _____ | _____ | _____ | _____ |
| 0340 | 303 | 303SD20-0031 INLET PROTECTION TYPE B | 4.000 EA | _____ | _____ | _____ | _____ |
| 0350 | 303 | 303SD20-0033 TEMP. SILT FENCE TYPE B | 619.000 LF | _____ | _____ | _____ | _____ |
| 0360 | 303 | 303SD20-0034 TEMP. SILT FENCE TYPE A | 1,980.000 LF | _____ | _____ | _____ | _____ |
| 0370 | 303 | 303SD20-0035 TEMP. SEDIMENT BASIN EXCAVATION | 561.000 CY | _____ | _____ | _____ | _____ |
| 0380 | ATTD | 303SX20-0024 TEMP.VEH.WATERCOURSE CROSSING | 1.000 EA | _____ | _____ | _____ | _____ |
| 0390 | 305 | 305SD20-0001 BORROW EXCAVATION | 19,369.000 CY | _____ | _____ | _____ | _____ |
| 0400 | 305 | 305SD20-0005 SELECT MATL. TY. I MIN. CBR-30 | 8,062.000 TON | _____ | _____ | _____ | _____ |
| 0410 | 305 | 305SD20-0009 GEOTEXTILE SUBGRADE STAB. | 6,031.000 SY | _____ | _____ | _____ | _____ |

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| | | | | Dollars | Cents | Dollars | Cents |
| 0420 | 306 | 306SD20-0001 LIME | 47.000 TON | _____ | _____ | _____ | _____ |
| 0430 | 307 | 307SD20-0001 HYDRAULIC CEMENT | 368.000 TON | _____ | _____ | _____ | _____ |
| 0440 | ATTD | 308SX20-0003 CRUSHER RUN AGGR. NO. 25 OR 26 | 66.000 TON | _____ | _____ | _____ | _____ |
| 0450 | 313 | 313SD20-0001 ASPH-STAB. OPEN-GRADED MATERIAL | 1,985.000 TON | _____ | _____ | _____ | _____ |
| 0460 | 315 | 315SD20-0002 ASPHALT CONCRETE TY. SM-12.5D CONST | 5,283.000 TON | _____ | _____ | _____ | _____ |
| 0470 | 315 | 315SD20-0005 ASPHALT CONCRETE TY. IM-19.0D CONST | 1,835.000 TON | _____ | _____ | _____ | _____ |
| 0480 | 315 | 315SD20-0011 ASPHALT CONCRETE TY. BM-25.0D CONST | 9,705.000 TON | _____ | _____ | _____ | _____ |
| 0490 | 315 | 315SD20-0015 RUMBLE STRIP CYLINDRICAL ASPHALT | 9,333.000 LF | _____ | _____ | _____ | _____ |
| 0500 | 315 | 315SD20-0018 ASPH.CONC.CURB BACKUP MATL. CONST | 7.300 TON | _____ | _____ | _____ | _____ |
| 0510 | 591 | 315SX20-0011 SAW-CUT ASPH CONC FULL DEPTH | 9,607.000 LF | _____ | _____ | _____ | _____ |
| 0520 | ATTD | 315SX20-0013 FULL DEPTH RECLAMATION | 22,058.000 SY | _____ | _____ | _____ | _____ |
| 0530 | 316 | 316SD20-0035 CONC. CL. A4 BRIDGE APPR. SLAB CONST. | 48.800 CY | _____ | _____ | _____ | _____ |

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|----------------------|-------------|---|--------------------------------|------------|-------|------------|-------|
| | | | | Dollars | Cents | Dollars | Cents |
| 0540 | 316 | 316SD20-0036 REINF. STEEL BRIDGE APPR. SLAB CONST. | 8,000.000 LB | _____ | _____ | _____ | _____ |
| 0550 | 317 ATTD | 317SP20-0004 STONE MATRIX ASPH. SMA-12.5 64E-22 | 7,755.000 TON | _____ | _____ | _____ | _____ |
| 0560 | 317 ATTD | 317SP20-0006 STONE MATRIX ASPH. SMA-19.0 64E-22 | 1,367.000 TON | _____ | _____ | _____ | _____ |
| 0570 | 401 | 401SD20-0001 STRUCTURE EXCAVATION CONST. | 921.000 CY | _____ | _____ | _____ | _____ |
| 0580 | 401 | 401SD20-0002 SELECT BACKFILL ABUTMENT ZONE | 2,712.000 TON | _____ | _____ | _____ | _____ |
| 0590 | 401 | 401SD20-0004 GEOCOMPOSITE WALL DRAIN | 259.000 SY | _____ | _____ | _____ | _____ |
| 0600 | 401 | 401SD20-0005 PIPE UNDERDRAIN 6" CONST. | 356.000 LF | _____ | _____ | _____ | _____ |
| 0610 | 403 | 403SD20-0006 STEEL PILES 12" | 2,593.000 LF | _____ | _____ | _____ | _____ |
| 0620 | 403 | 403SD20-0034 PILE POINT FOR 12" STEEL PILE | 83.000 EA | _____ | _____ | _____ | _____ |
| 0630 | 403 | 403SD20-0036 DRIVING TEST FOR 12" STEEL PILE | 359.000 LF | _____ | _____ | _____ | _____ |
| 0640 | ATTD | 403SX20-0001 DYNAMIC PILE TEST END BEARING PILES | 8.000 EA | _____ | _____ | _____ | _____ |
| 0650 | ATTD | 403SX20-0016 PREBORING PILE 12" | 220.000 LF | _____ | _____ | _____ | _____ |

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|----------------------------|-------------|--|--------------------------------------|------------|-------|------------|-------|
| | | | | Dollars | Cents | Dollars | Cents |
| 0660 | 404 | 404SD20-0005 CONC. CL. A4 MOD. LOW SHRINK., SPR. STRUCT. CONST. | 57.000 CY | _____ | _____ | _____ | _____ |
| 0670 | 404 | 404SD20-0009 BRIDGE DECK GROOVING CONST. | 1,170.000 SY | _____ | _____ | _____ | _____ |
| 0680 | 404 | 404SD20-0010 COVER DEPTH SURVEY CONST. | 204.000 SY | _____ | _____ | _____ | _____ |
| 0690 | 404 | 404SD20-0011 CONCRETE CLASS A3, SUBSTRUCT. CONST. | 365.500 CY | _____ | _____ | _____ | _____ |
| 0700 | 406 | 406SD20-0005 CR REINF. STEEL CL. III SPR. STRUCT. CONST. | 16,210.000 LB | _____ | _____ | _____ | _____ |
| 0710 | 406 | 406SD20-0006 REINFORCING STEEL SUBSTRUCT. CONST. | 17,430.000 LB | _____ | _____ | _____ | _____ |
| 0720 | 406 | 406SD20-0008 CR REINF. STEEL CL. I SUBSTRUCT. CONST. | 18,490.000 LB | _____ | _____ | _____ | _____ |
| 0730 | 407 | 407SD20-0006 STR. STEEL PLATE GIRDER ASTM A709 GRADE50 | LUMP SUM | LUMP SUM | _____ | _____ | _____ |
| 0740 | 410 | 410SD20-0006 CONCRETE PARAPET 42" CONST. | 230.000 LF | _____ | _____ | _____ | _____ |
| 0750 | 411 | 411SX20-0002 ZONE COAT. EXISTING STRUCTURE | LUMP SUM | LUMP SUM | _____ | _____ | _____ |
| 0760 | 411 | 411SX20-0003 PRE. & OVERCOAT EXISTING STRUCTURE. | LUMP SUM | LUMP SUM | _____ | _____ | _____ |

Proposal ID: C0000111466C01 Oversight/State Project No.: 0095-020-818, B660, C501
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| | | | | Dollars | Cents | Dollars | Cents |
| 0770 | 411 | 411SX20-0005 ENVIROMENTAL PROT. & HEALTH & SAFETY | LUMP SUM | LUMP SUM | | | |
| 0780 | 411 | 411SX20-0006 DISPOSAL OF MATERIAL | LUMP SUM | LUMP SUM | | | |
| 0790 | 412 | 412SD20-0034 H.E.S. PATCHING TYPE B | 18.000 SY | | | | |
| 0800 | 412 | 412SD20-0036 H.E.S. PATCHING TYPE C | 18.000 SY | | | | |
| 0810 | 412 | 412SD20-0040 RECONSTR. EXPANSION JOINT RECONSTRUCTION VES | 26.000 LF | | | | |
| 0820 | 412 | 412SD20-0042 EXPANSION JOINT RECONSTRUCTION HES | 225.000 LF | | | | |
| 0830 | 412 | 412SD20-0046 BACK WALL RECONSTRUCTION HES | 226.000 LF | | | | |
| 0840 | 412 | 412SX20-0001 CONC. SURF. COLOR COATING | 714.000 SY | | | | |
| 0850 | ATTD | 412SX20-0015 SUPERSTR. WID./REPAIR V.E.S. PATCHING TYPE B | 2.000 SY | | | | |
| 0860 | ATTD | 412SX20-0015 SUPERSTR. WID./REPAIR V.E.S. PATCHING TYPE C | 2.000 SY | | | | |

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|----------------------------|-------------|--|--------------------------------------|------------|-------|------------|-------|
| | | | | Dollars | Cents | Dollars | Cents |
| 0870 | ATTD | 412SX20-0017 BR. SUBSTR. WID./REPAIR RECONSTRUCT BACK WALL VES. | 26.000 LF | _____ | _____ | _____ | _____ |
| 0880 | 413 | 413SX20-0005 REMOVE PORT.OF EX.STR. | LUMP SUM | LUMP SUM | _____ | _____ | _____ |
| 0890 | 414 | 414SD20-0003 EROSION CTRL. STONE CL. I, EC-1 | 451.000 TON | _____ | _____ | _____ | _____ |
| 0900 | 414 | 414SD20-0008 DRY RIPRAP CL. AI | 50.000 TON | _____ | _____ | _____ | _____ |
| 0910 | 414 | 414SX20-0007 RIPRAP DRY RIPRAP CL. I HAND PLACED | 991.000 TON | _____ | _____ | _____ | _____ |
| 0920 | 415 | 415SD20-0002 CONCRETE SLAB SLOPE PROTECTION 4" | 114.000 SY | _____ | _____ | _____ | _____ |
| 0930 | 420 | 420SD20-0005 ADHESIVE BASED JT. SEALER CL. I, 3" CONST. | 313.000 LF | _____ | _____ | _____ | _____ |
| 0940 | 425 | 425SD20-0001 REMOVE ASPHALT CONCRETE OVERLAY | 966.000 SY | _____ | _____ | _____ | _____ |
| 0950 | 425 | 425SD20-0002 TYPE A MILLING 1/2" | 989.000 SY | _____ | _____ | _____ | _____ |
| 0960 | 425 | 425SD20-0014 PLC.HIGH EARLY MOD.CONC.OVERLAY | 895.000 SY | _____ | _____ | _____ | _____ |
| 0970 | 425 | 425SD20-0015 PLACE VERY EARLY MOD.CONC.OVERLAY | 95.000 SY | _____ | _____ | _____ | _____ |
| 0980 | 425 | 425SD20-0022 TYPE A HYDRO-DEMOLITION 1/2" | 989.000 SY | _____ | _____ | _____ | _____ |

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|----------------------|----------|--|--------------------------------|------------|-------|------------|-------|
| | | | | Dollars | Cents | Dollars | Cents |
| 0990 | 425 | 425SX20-0003 FURN. HIGH EARLY LATEX MOD.CONC. 425 425 | 99.500 CY | _____ | _____ | _____ | _____ |
| 1000 | 425 | 425SX20-0004 FURN VERY EARLY LATEX MOD CONC. 425 425 | 10.600 CY | _____ | _____ | _____ | _____ |
| 1010 | 430 | 430SX20-0001 NBIS ACCESS, UNDER BRIDGE (STR. NO. 2003) | 1.000 DAY | _____ | _____ | _____ | _____ |
| 1020 | 501 | 501SD20-0004 UNDERDRAIN UD-4 | 8,344.000 LF | _____ | _____ | _____ | _____ |
| 1030 | 501 | 501SD20-0006 CROSSDRAIN CD-1 | 481.480 LF | _____ | _____ | _____ | _____ |
| 1040 | 501 | 501SD20-0009 OUTLET PIPE | 332.000 LF | _____ | _____ | _____ | _____ |
| 1050 | 502 | 502SD20-0003 PAVED DITCH PG-2A | 105.000 SY | _____ | _____ | _____ | _____ |
| 1060 | 502 | 502SD20-0004 PAVED DITCH PG-5 | 38.000 SY | _____ | _____ | _____ | _____ |
| 1070 | 502 | 502SD20-0020 CURB, ASPHALT MC-3B | 175.000 LF | _____ | _____ | _____ | _____ |
| 1080 | 502 | 502SD20-0036 MEDIAN BARRIER MB-7D | 40.000 LF | _____ | _____ | _____ | _____ |
| 1090 | 302, 504 | 504SD20-0001 CONCRETE CLASS A3 MISC. | 69.180 CY | _____ | _____ | _____ | _____ |
| 1100 | 504 | 504SD20-0005 GEOTEXTILE DRAINAGE FABRIC | 2,000.000 SY | _____ | _____ | _____ | _____ |
| 1110 | 505 | 505SD20-0011 GUARDRAIL GR-MGS1 | 5,285.000 LF | _____ | _____ | _____ | _____ |

Proposal ID: C0000111466C01

Oversight/State Project No.: 0095-020-818, B660, C501

Order No.: K60

Federal Project No.: NHFP-095-1(364)

Contractor: _____

SECTION: 0001

REGULAR BID ITEMS

Cat Alt Set ID:

Cat Alt Mbr ID:

| Proposal Line Number | Spec No. | Item ID Description | Approximate Quantity and Units | Unit Price | | Bid Amount | |
|----------------------------|-------------|--|--------------------------------------|------------|-------|------------|-------|
| | | | | Dollars | Cents | Dollars | Cents |
| 1120 | 505 | 505SD20-0013 GUARDRAIL GR-MGS1, 9' POST | 2,708.000 LF | _____ | _____ | _____ | _____ |
| 1130 | 505 | 505SD20-0017 GUARDRAIL TERMINAL GR- MGS2 | 1.000 EA | _____ | _____ | _____ | _____ |
| 1140 | 505 | 505SD20-0018 GUARDRAIL END ANCHORAGE GR-MGS3 | 2.000 EA | _____ | _____ | _____ | _____ |
| 1150 | 505 | 505SD20-0019 GUARDRAIL HEIGHT TRANSITION GR-MGS4 | 4.000 EA | _____ | _____ | _____ | _____ |
| 1160 | 505 | 505SD20-0040 GUARDRAIL GR-10 | 129.000 LF | _____ | _____ | _____ | _____ |
| 1170 | 505 | 505SD20-0053 FIXED OBJECT ATTACH. GR- FOA-2 TY. I | 2.000 EA | _____ | _____ | _____ | _____ |
| 1180 | 505 | 505SD20-0054 FIXED OBJECT ATTACH. GR- FOA-2 TY. II | 2.000 EA | _____ | _____ | _____ | _____ |
| 1190 | 505 | 505SD20-0073 REMOVE EXISTING GUARDRAIL | 6,813.000 LF | _____ | _____ | _____ | _____ |
| 1200 | ATTD | 506SX20-0004 WALL ANCHOR WALL | 296.000 LF | _____ | _____ | _____ | _____ |
| 1210 | 507 | 507SD20-0002 FENCE FE-W2 | 6,779.000 LF | _____ | _____ | _____ | _____ |
| 1220 | 507 | 507SD20-0016 LINE BRACE UNIT FE-B | 19.000 EA | _____ | _____ | _____ | _____ |
| 1230 | 507 | 507SD20-0017 CORNER BRACE UNIT FE-B | 22.000 EA | _____ | _____ | _____ | _____ |
| 1240 | 507 | 507SD20-0024 WATER GATE FE-4 TY.I | 4.000 EA | _____ | _____ | _____ | _____ |

Proposal ID: C0000111466C01 Oversight/State Project No.: 0095-020-818, B660, C501
 Order No.: K60 Federal Project No.: NHFP-095-1(364)

Contractor: _____

SECTION: 0001 REGULAR BID ITEMS

Cat Alt Set ID: Cat Alt Mbr ID:

| Proposal Line Number | Spec No. | Item ID Description | Approximate Quantity and Units | Unit Price | | Bid Amount | |
|----------------------|----------|---|--------------------------------|------------|-------|------------|-------|
| | | | | Dollars | Cents | Dollars | Cents |
| 1250 | 507 | 507SD20-0025 WATER GATE FE-4 TY.II | 1.000 EA | _____ | _____ | _____ | _____ |
| 1260 | 507 | 507SD20-0026 WATER GATE FE-4 TY.III | 14.000 LF | _____ | _____ | _____ | _____ |
| 1270 | 507 | 507SD20-0027 HIGH VISIBILITY FENCE, 4 FEET | 465.000 LF | _____ | _____ | _____ | _____ |
| 1280 | 508 | 508SD20-0004 DEMO. OF PAVEMENT FLEXIBLE | 12,564.000 SY | _____ | _____ | _____ | _____ |
| 1290 | 510 | 510SX20-0016 REMOVE EXIST. FENCE BARBED & WOVEN WIRE FENCE | 7,015.000 LF | _____ | _____ | _____ | _____ |
| 1300 | 510 | 510SX20-0022 RESET EXIST. REMOVE FIBER OPTIC CABLE | 1,650.000 LF | _____ | _____ | _____ | _____ |
| 1310 | 510 | 510SX20-0042 RELOCATE POWER/ CABLE POLE LINES | 1.000 EA | _____ | _____ | _____ | _____ |
| 1320 | 511 | 511SD20-0001 ALLAYING DUST | 200.000 HR | _____ | _____ | _____ | _____ |
| 1330 | 512 | 512SD20-0003 TRAFFIC BARRIER SERVICE MB-11A | 17,810.000 LF | _____ | _____ | _____ | _____ |
| 1340 | 512 | 512SD20-0007 IMPACT ATTEN.SER. TY. 1 TL-3, >=40 MPH | 9.000 EA | _____ | _____ | _____ | _____ |
| 1350 | 512 | 512SD20-0012 TYPE 3 BARRICADE 4' | 16.000 EA | _____ | _____ | _____ | _____ |
| 1360 | 512 | 512SD20-0013 TYPE 3 BARRICADE 8' | 10.000 EA | _____ | _____ | _____ | _____ |

Proposal ID: C0000111466C01 Oversight/State Project No.: 0095-020-818, B660, C501
 Order No.: K60 Federal Project No.: NHFP-095-1(364)

Contractor: _____

SECTION: 0001 REGULAR BID ITEMS

Cat Alt Set ID: Cat Alt Mbr ID:

| Proposal Line Number | Spec No. | Item ID Description | Approximate Quantity and Units | Unit Price | | Bid Amount | |
|----------------------|----------|--|--------------------------------|------------|-------|------------|-------|
| | | | | Dollars | Cents | Dollars | Cents |
| 1370 | 512 | 512SD20-0014 TEMPORARY SIGN | 3,932.000 SF | _____ | _____ | _____ | _____ |
| 1380 | 512 | 512SD20-0023 TRUCK MOUNTED ATTENUATOR | 1,824.000 HR | _____ | _____ | _____ | _____ |
| 1390 | 512 | 512SD20-0024 GROUP 2 CHANNELIZING DEVICES | 13,190.000 DAY | _____ | _____ | _____ | _____ |
| 1400 | 512 | 512SD20-0025 PORT.CHANGEABLE MESS. SIGN | 2,240.000 HR | _____ | _____ | _____ | _____ |
| 1410 | 512 | 512SD20-0026 ELECTRONIC ARROW BOARD | 2,688.000 HR | _____ | _____ | _____ | _____ |
| 1420 | 512 | 512SD20-0029 WARNING LIGHT TY. B | 1,672.000 DAY | _____ | _____ | _____ | _____ |
| 1430 | 512 | 512SD20-0042 ERADICATE LINEAR PVMT MRKG | 84,927.000 LF | _____ | _____ | _____ | _____ |
| 1440 | 512 | 512SD20-0044 TEMP. PAVE. MARKER 1 WAY | 2,950.000 EA | _____ | _____ | _____ | _____ |
| 1450 | 512 | 512SD20-0062 TEMP. PVMT MRKG TY. D, CL. III, 6" | 9,940.000 LF | _____ | _____ | _____ | _____ |
| 1460 | 512 | 512SD20-0063 TEMP. PVMT MRKG TY. D, CL. III, 8" | 93,242.000 LF | _____ | _____ | _____ | _____ |
| 1470 | ATTD | 512SX20-0019 TRAFFIC CONTROL TRUCKS ENTERING HIGHWAY SYSTEM | 18.000 EA | _____ | _____ | _____ | _____ |
| 1480 | 513 | 513SD20-0001 MOBILIZATION | LUMP SUM | LUMP SUM | _____ | _____ | _____ |
| 1490 | 514 | 514SD20-0001 FIELD OFFICE TY.I | 24.000 MO | _____ | _____ | _____ | _____ |

Proposal ID: C0000111466C01 Oversight/State Project No.: 0095-020-818, B660, C501
 Order No.: K60 Federal Project No.: NHFP-095-1(364)

Contractor: _____

SECTION: 0001 REGULAR BID ITEMS

Cat Alt Set ID: Cat Alt Mbr ID:

| Proposal Line Number | Spec No. | Item ID Description | Approximate Quantity and Units | Unit Price | | Bid Amount | |
|----------------------|----------|--|--------------------------------|------------|-------|------------|-------|
| | | | | Dollars | Cents | Dollars | Cents |
| 1500 | 515 | 515SD20-0004 FLEXIBLE PAVE.PLANING 0"-2" | 57,808.000 SY | _____ | _____ | _____ | _____ |
| 1510 | 515 | 515SD20-0005 FLEXIBLE PAVE. PLANING ABOVE 2"-4" | 11,267.000 SY | _____ | _____ | _____ | _____ |
| 1520 | 517 | 517SD20-0001 CONSTRUCTION SURVEYING CONSTR. | LUMP SUM | LUMP SUM | | _____ | _____ |
| 1530 | 521 | 521SD20-0001 MAILBOX POST, SINGLE | 1.000 EA | _____ | _____ | _____ | _____ |
| 1540 | 602 | 602SD20-0004 TOPSOIL CLASS B | 3,345.000 CY | _____ | _____ | _____ | _____ |
| 1550 | 603 | 603SD20-0002 TEMPORARY SEED | 1,255.000 LB | _____ | _____ | _____ | _____ |
| 1560 | 603 | 603SD20-0003 REGULAR SEED | 2,519.000 LB | _____ | _____ | _____ | _____ |
| 1570 | 603 | 603SD20-0004 OVERSEEDING | 2,015.000 LB | _____ | _____ | _____ | _____ |
| 1580 | 603 | 603SD20-0005 LEGUME SEED | 11.000 LB | _____ | _____ | _____ | _____ |
| 1590 | 603 | 603SD20-0006 LEGUME OVERSEEDING | 9.000 LB | _____ | _____ | _____ | _____ |
| 1600 | 603 | 603SD20-0008 HYDRAULIC EROSION CONTROL PRODUCT TYPE 2 | 3,557.000 SY | _____ | _____ | _____ | _____ |
| 1610 | 603 | 603SD20-0009 HYDRAULIC EROSION CONTROL PRODUCT TYPE 3 | 94,804.000 SY | _____ | _____ | _____ | _____ |
| 1620 | 603 | 603SD20-0014 FERTILIZER NITROGEN - N | 748.000 LB | _____ | _____ | _____ | _____ |

Proposal ID: C0000111466C01 Oversight/State Project No.: 0095-020-818, B660, C501
 Order No.: K60 Federal Project No.: NHFP-095-1(364)

Contractor: _____

SECTION: 0001 REGULAR BID ITEMS

Cat Alt Set ID: Cat Alt Mbr ID:

| Proposal Line Number | Spec No. | Item ID Description | Approximate Quantity and Units | Unit Price | | Bid Amount | |
|----------------------|----------|--|--------------------------------|------------|-------|------------|-------|
| | | | | Dollars | Cents | Dollars | Cents |
| 1630 | 603 | 603SD20-0015 FERTILIZER PHOSPHOROUS - P | 562.000 LB | _____ | _____ | _____ | _____ |
| 1640 | 603 | 603SD20-0016 FERTILIZER POTASSIUM - K | 562.000 LB | _____ | _____ | _____ | _____ |
| 1650 | 606 | 606SD20-0003 ROLLED EROSION CTRL PRODUCT EC-2 TYPE 3 | 3,684.000 SY | _____ | _____ | _____ | _____ |
| 1660 | 606 | 606SD20-0005 ROLLED EROSION CTRL PRODUCT EC-3 TYPE 1 | 690.000 SY | _____ | _____ | _____ | _____ |
| 1670 | 606 | 606SD20-0006 ROLLED EROSION CTRL PRODUCT EC-3 TYPE 2 | 1,340.000 SY | _____ | _____ | _____ | _____ |
| 1680 | 606 | 606SD20-0007 ROLLED EROSION CTRL PRODUCT EC-3 TYPE 3 | 16.000 SY | _____ | _____ | _____ | _____ |
| 1690 | 700 | 700SD20-0003 REMOVE EXISTING 1 POST SIGN STRUCTURE | 8.000 EA | _____ | _____ | _____ | _____ |
| 1700 | 700 | 700SD20-0004 REMOVE EXISTING 2 POST SIGN STRUCTURE | 2.000 EA | _____ | _____ | _____ | _____ |
| 1710 | 700 | 700SD20-0007 REMOVE EXISTING 1 POST SIGN PANEL | 10.000 EA | _____ | _____ | _____ | _____ |
| 1720 | 700 | 700SD20-0008 REMOVE EXISTING 2 POST SIGN PANEL | 3.000 EA | _____ | _____ | _____ | _____ |
| 1730 | 700 | 700SD20-0012 RELOCATE EX. 1 POST GRND MOUNT SGN PANEL | 2.000 EA | _____ | _____ | _____ | _____ |
| 1740 | 700 | 700SD20-0018 VA SIGN POST W4 X 13 | 64.000 LF | _____ | _____ | _____ | _____ |

Proposal ID: C0000111466C01 Oversight/State Project No.: 0095-020-818, B660, C501
 Order No.: K60 Federal Project No.: NHFP-095-1(364)

Contractor: _____

SECTION: 0001 REGULAR BID ITEMS

Cat Alt Set ID: Cat Alt Mbr ID:

| Proposal Line Number | Spec No. | Item ID Description | Approximate Quantity and Units | Unit Price | | Bid Amount | |
|----------------------|----------|--|--------------------------------|------------|-------|------------|-------|
| | | | | Dollars | Cents | Dollars | Cents |
| 1750 | 700 | 700SD20-0031 VIA SIGN POST W12 X 22 | 37.000 LF | _____ | _____ | _____ | _____ |
| 1760 | 700 | 700SD20-0035 SIGN POST STP-1, 2 3/16", 10 GAUGE | 6.000 LF | _____ | _____ | _____ | _____ |
| 1770 | 700 | 700SD20-0036 SIGN POST STP-1, 2 1/2", 10 GAUGE | 15.000 LF | _____ | _____ | _____ | _____ |
| 1780 | 700 | 700SD20-0037 SIGN POST STP-1, 2 1/2", 12 GAUGE | 32.000 LF | _____ | _____ | _____ | _____ |
| 1790 | 700 | 700SD20-0038 CONC. FOUND. STP-1, TY. A | 2.000 EA | _____ | _____ | _____ | _____ |
| 1800 | 700 | 700SD20-0039 CONC. FOUND. STP-1, TY. B | 1.000 EA | _____ | _____ | _____ | _____ |
| 1810 | 700 | 700SD20-0046 CONC. FOUND. SSP-VA, 1'9" DIA. X 4'6" DEEP | 4.000 EA | _____ | _____ | _____ | _____ |
| 1820 | 700 | 700SD20-0049 CONC. FOUND. SSP-VIA, 3' DIA. X 7' DEEP | 2.000 EA | _____ | _____ | _____ | _____ |
| 1830 | 700 | 700SD20-0056 CONC. FOUND. O/H SIGN STRUCTURE | 140.000 CY | _____ | _____ | _____ | _____ |
| 1840 | 700 | 700SD20-0199 TEST BORE | 7.000 EA | _____ | _____ | _____ | _____ |
| 1850 | 700 | 700SX20-0003 SIGN STRUCTURE, OVERHEAD CANT. | 7.000 EA | _____ | _____ | _____ | _____ |

Proposal ID: C0000111466C01 Oversight/State Project No.: 0095-020-818, B660, C501
 Order No.: K60 Federal Project No.: NHFP-095-1(364)

Contractor: _____

SECTION: 0001 REGULAR BID ITEMS

Cat Alt Set ID: Cat Alt Mbr ID:

| Proposal Line Number | Spec No. | Item ID Description | Approximate Quantity and Units | Unit Price | | Bid Amount | |
|----------------------|----------|--|--------------------------------|------------|-------|------------|-------|
| | | | | Dollars | Cents | Dollars | Cents |
| 1860 | 700 | 700SX20-0016 RELOCATE EXISTING OVERHEAD SIGN STRUCTURE SIGN PANEL | 1.000 EA | _____ | _____ | _____ | _____ |
| 1870 | 700 | 700SX20-0019 TRAFFIC SIGN U-CHANNEL SIGN POST | 10.000 LF | _____ | _____ | _____ | _____ |
| 1880 | 700 | 700SX20-0021 REMOVE AND DISPOSE CANTILEVER SIGN STRUCTURE AND SIGN PANEL | 5.000 EA | _____ | _____ | _____ | _____ |
| 1890 | 700 | 700SX20-0021 REMOVE AND DISPOSE OVERHEAD SIGN STRUCTURE AND SIGN PANEL | 1.000 EA | _____ | _____ | _____ | _____ |
| 1900 | 701 | 701SD20-0001 SIGN PANEL | 2,228.000 SF | _____ | _____ | _____ | _____ |
| 1910 | 701 | 701SD20-0002 OVERLAY SIGN PANEL | 75.000 SF | _____ | _____ | _____ | _____ |
| 1920 | 704 | 704SD20-0027 TYPE B CLASS VI PVMT LINE MRKG 6" | 26,715.000 LF | _____ | _____ | _____ | _____ |
| 1930 | 704 | 704SD20-0028 TYPE B CLASS VI PVMT LINE MRKG 8" | 3,225.000 LF | _____ | _____ | _____ | _____ |
| 1940 | 704 | 704SD20-0029 TYPE B CLASS VI PVMT LINE MRKG 12" | 320.000 LF | _____ | _____ | _____ | _____ |
| 1950 | 704 | 704SD20-0031 TYPE B CLASS VI CONTRAST PVMT LINE MRKG 6" | 760.000 LF | _____ | _____ | _____ | _____ |

Proposal ID: C0000111466C01 Oversight/State Project No.: 0095-020-818, B660, C501
 Order No.: K60 Federal Project No.: NHFP-095-1(364)

Contractor: _____

SECTION: 0001 REGULAR BID ITEMS

Cat Alt Set ID: Cat Alt Mbr ID:

| Proposal Line Number | Spec No. | Item ID Description | Approximate Quantity and Units | Unit Price | | Bid Amount | |
|----------------------|----------|--|--------------------------------|------------|-------|------------|-------|
| | | | | Dollars | Cents | Dollars | Cents |
| 1960 | ATTD | 704SD20-0032 INLAID PAVEMENT MARKER ASPHALT | 3,460.000 EA | _____ | _____ | _____ | _____ |
| 1970 | 704 | 704SX20-0001 PAVEMENT MARKING TYPE B CLASS VI PAVEMENT LINE MARKING 8" CONTRAST | 80.000 LF | _____ | _____ | _____ | _____ |
| Section: 0001 | | | | Total: | | _____ | _____ |
| | | | | Total Bid: | | _____ | _____ |

Bid Items Eligible For Fuel Adjustment

Instructions: This form shall be completed in accordance with the Special Provision for Optional Adjustment for Fuel. If you choose to have Fuel Adjustment applied to any of the items listed below, write the word "Yes" in the "OPTION" column beside the item. The form must be signed, dated, and submitted to the Contract Engineer within the timeframe required in the Special Provision.

SECTION: 0001

REGULAR BID ITEMS

| Item Number | Item Description | Fuel Factor gal/unit | Option |
|--------------|--|----------------------|--------|
| 302SD20-0002 | BEDDING MATL. AGGR. NO. 57 | 0.400 | _____ |
| 303SD20-0001 | REGULAR EXCAVATION | 0.290 | _____ |
| 303SD20-0016 | MINOR STR. EXCAV. PIPE CULVERT | 0.290 | _____ |
| 303SD20-0029 | SILTATION CONTROL EXCAVATION | 0.290 | _____ |
| 305SD20-0001 | BORROW EXCAVATION | 0.290 | _____ |
| 305SD20-0005 | SELECT MATL. TY. I MIN. CBR-30 | 0.600 | _____ |
| 307SD20-0001 | HYDRAULIC CEMENT | 0.200 | _____ |
| 308SX20-0003 | CRUSHER RUN AGGR. NO. 25 OR 26 | 0.400 | _____ |
| 313SD20-0001 | ASPH-STAB. OPEN-GRADED MATERIAL | 3.000 | _____ |
| 315SD20-0002 | ASPHALT CONCRETE TY. SM-12.5D CONST | 3.500 | _____ |
| 315SD20-0005 | ASPHALT CONCRETE TY. IM-19.0D CONST | 3.500 | _____ |
| 315SD20-0011 | ASPHALT CONCRETE TY. BM-25.0D CONST | 3.500 | _____ |
| 317SP20-0004 | STONE MATRIX ASPH. SMA-12.5 64E-22 | 4.000 | _____ |
| 317SP20-0006 | STONE MATRIX ASPH. SMA-19.0 64E-22 | 4.000 | _____ |
| 401SD20-0001 | STRUCTURE EXCAVATION CONST. | 0.290 | _____ |
| 404SD20-0005 | CONC. CL. A4 MOD. LOW SHRINK., SPR. STRUCT. CONST. | 1.892 | _____ |
| 404SD20-0011 | CONCRETE CLASS A3, SUBSTRUCT. CONST. | 1.892 | _____ |

Bid Items Eligible For Fuel Adjustment

Instructions: This form shall be completed in accordance with the Special Provision for Optional Adjustment for Fuel. If you choose to have Fuel Adjustment applied to any of the items listed below, write the word "Yes" in the "OPTION" column beside the item. The form must be signed, dated, and submitted to the Contract Engineer within the timeframe required in the Special Provision.

| SECTION: 0001 | REGULAR BID ITEMS | | |
|---------------|------------------------------------|-------|-------|
| 414SD20-0003 | EROSION CTRL. STONE CL. I, EC-1 | 0.600 | _____ |
| 414SD20-0008 | DRY RIPRAP CL. AI | 0.400 | _____ |
| 504SD20-0001 | CONCRETE CLASS A3 MISC. | 1.892 | _____ |
| 508SD20-0004 | DEMO. OF PAVEMENT FLEXIBLE | 0.200 | _____ |
| 515SD20-0004 | FLEXIBLE PAVE.PLANING 0"-2" | 0.071 | _____ |
| 515SD20-0005 | FLEXIBLE PAVE. PLANING ABOVE 2"-4" | 0.160 | _____ |

Date: _____

Signature: _____

(Firm or Corporation)

(Vendor No.)

Bid Items Eligible For Steel Price Adjustment

Instructions: This form shall be completed in accordance with the Special Provision. If you choose to have Steel Price Adjustment applied to any of the items listed below, write the word "Yes" in the "OPTION" column beside the item. The form must be signed, dated, and submitted to the Contract Engineer within the timeframe required in the Special Provision.

SECTION: 0001

REGULAR BID ITEMS

| Item Number | Item Description | Option |
|--------------|---|--------|
| 302SD20-0005 | REINF. STEEL | _____ |
| 316SD20-0036 | REINF. STEEL BRIDGE APPR. SLAB CONST. | _____ |
| 403SD20-0006 | STEEL PILES 12" | _____ |
| 403SD20-0036 | DRIVING TEST FOR 12" STEEL PILE | _____ |
| 406SD20-0005 | CR REINF. STEEL CL. III SPR. STRUCT. CONST. | _____ |
| 406SD20-0006 | REINFORCING STEEL SUBSTRUCT. CONST. | _____ |
| 406SD20-0008 | CR REINF. STEEL CL. I SUBSTRUCT. CONST. | _____ |
| 407SD20-0006 | STR.STEEL PLATE GIRDER ASTM A709 GRADE50 | _____ |
| 505SD20-0011 | GUARDRAIL GR-MGS1 | _____ |
| 505SD20-0013 | GUARDRAIL GR-MGS1, 9' POST | _____ |
| 505SD20-0017 | GUARDRAIL TERMINAL GR-MGS2 | _____ |
| 505SD20-0018 | GUARDRAIL END ANCHORAGE GR-MGS3 | _____ |
| 505SD20-0019 | GUARDRAIL HEIGHT TRANSITION GR-MGS4 | _____ |
| 505SD20-0040 | GUARDRAIL GR-10 | _____ |
| 507SD20-0026 | WATER GATE FE-4 TY.III | _____ |
| 700SD20-0018 | VA SIGN POST W4 X 13 | _____ |
| 700SD20-0031 | VIA SIGN POST W12 X 22 | _____ |
| 700SD20-0035 | SIGN POST STP-1, 2 3/16", 10 GAUGE | _____ |

Bid Items Eligible For Steel Price Adjustment

Instructions: This form shall be completed in accordance with the Special Provision. If you choose to have Steel Price Adjustment applied to any of the items listed below, write the word "Yes" in the "OPTION" column beside the item. The form must be signed, dated, and submitted to the Contract Engineer within the timeframe required in the Special Provision.

| SECTION: 0001 | REGULAR BID ITEMS | |
|---------------|--|-------|
| 700SD20-0036 | SIGN POST STP-1, 2 1/2", 10 GAUGE | _____ |
| 700SD20-0037 | SIGN POST STP-1, 2 1/2", 12 GAUGE | _____ |
| 700SX20-0021 | TRAFFIC SIGN REMOVE AND DISPOSE CANTILEVER SIGN STRUCTURE AND SIGN PANEL | _____ |
| 700SX20-0021 | TRAFFIC SIGN REMOVE AND DISPOSE OVERHEAD SIGN STRUCTURE AND SIGN PANEL | _____ |

Date: _____

Signature: _____

(Firm or Corporation)

(Vendor No.)

Contract ID: C0000111466C01

Order No.: K60

Bid Items Eligible For Asphalt Adjustment within this Project

SECTION: 0001

REGULAR BID ITEMS

| Item Number | Item Description |
|--------------|-------------------------------------|
| 313SD20-0001 | ASPH-STAB. OPEN-GRADED MATERIAL |
| 315SD20-0002 | ASPHALT CONCRETE TY. SM-12.5D CONST |
| 315SD20-0005 | ASPHALT CONCRETE TY. IM-19.0D CONST |
| 315SD20-0011 | ASPHALT CONCRETE TY. BM-25.0D CONST |
| 315SD20-0018 | ASPH.CONC.CURB BACKUP MATL. CONST |
| 317SP20-0004 | STONE MATRIX ASPH. SMA-12.5 64E-22 |
| 317SP20-0006 | STONE MATRIX ASPH. SMA-19.0 64E-22 |

Determination of Major Items

| Item Number | Item Description |
|--------------|--|
| 317SP20-0004 | STONE MATRIX ASPH. SMA-12.5 64E-22 |
| 315SD20-0011 | ASPHALT CONCRETE TY. BM-25.0D CONST |
| 303SD20-0001 | REGULAR EXCAVATION |
| 700SX20-0003 | SIGN STRUCTURE, OVERHEAD CANT. OVERHEAD SIGN STRUCTURE |
| 315SD20-0002 | ASPHALT CONCRETE TY. SM-12.5D CONST |
| 602SD20-0004 | TOPSOIL CLASS B |
| 506SX20-0004 | WALL ANCHOR WALL |
| 305SD20-0001 | BORROW EXCAVATION |

ORDER NO.: K60
CONTRACT ID. NO.: C0000111466C01

Form C-111
 Rev. 2-15-11

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
MINIMUM DBE REQUIREMENTS

PROJECT NO: 0095-020-818, B660, C501

FHWA NO: NHFP-095-1(364)

***** INSTRUCTIONS *****

THIS FORM CAN BE USED BY THE CONTRACTOR TO SUBMIT THE NAMES OF DBE FIRMS TO BE UTILIZED ON THE PROJECT. THE CONTRACTOR SHALL INDICATE THE DESCRIPTION OF THE CATEGORY (S, M, SP or H) AND THE TYPE OF WORK THAT EACH DBE WILL PERFORM AND THE ALLOWABLE CREDIT PER ITEM(S). ADDITIONAL SHEETS TO SHOW THE ALLOWABLE CREDIT PER ITEM MAY BE ATTACHED IF NECESSARY. PLEASE NOTE: THE AMOUNT OF ALLOWABLE CREDIT FOR A DBE SUPPLIER IS 60% OF THE TOTAL COST OF THE MATERIALS OR SUPPLIES OBTAINED AND 100% FOR A DBE MANUFACTURER OF THE MATERIALS AND SUPPLIES OBTAINED. A CONTRACTOR MAY COUNT 100% OF THE FEES PAID TO A DBE HAULER FOR THE DELIVERY OF MATERIALS AND SUPPLIES TO THE PROJECT SITE, BUT NOT FOR THE COST OF THE MATERIALS AND SUPPLIES THEMSELVES.

SECTION I:

DBE REQUIREMENT 12.00%

SECTION II:

PERCENT ATTAINED BY BIDDER %

| NAME(s) AND CERTIFICATION NO. OF DBE(s) TO BE USED | USED AS SUBCONTR. (S) MFG. (M) SUPPLIER (SP) HAULER (H) | TYPE OF WORK & ITEM NO(s) | AMT. OF ALLOWABLE CREDIT PER ITEM |
|---|---|------------------------------|--|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

TOTAL: \$ _____

Total Contract Value \$ _____ X Required DBE _____ % = \$ _____

I/WE CERTIFY THAT THE PROPOSED DBE (S) SUBMITTED WILL BE USED ON THIS CONTRACT AS STATED HEREON AND ASSURE THAT DURING THE LIFE OF THE CONTRACT, I/WE WILL MEET OR EXCEED THE PARTICIPATION ESTABLISHED HEREON BY THE DEPARTMENT.

_____ By _____
 BIDDER SIGNATURE

_____ By _____
 TITLE DATE

ORDER NO.: K60
CONTRACT ID. NO.: C0000111466C01

Form C-112
Rev. 3-1-11
Page 1 of 2

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
CERTIFICATION OF BINDING AGREEMENT WITH
DISADVANTAGED BUSINESS ENTERPRISE FIRMS

Project No.: 0095-020-818, B660, C501

FHWA NO: NHFP-095-1(364)

This form is to be submitted in accordance with the Department's Special Provision for Section 107.15.

It is hereby certified by the below signed Contractors that there exists a written quote, acceptable to the parties involved preliminary to a binding subcontract agreement stating the details concerning the work to be performed and the price which will be paid for the aforementioned work. This document is not intended to, nor should it be construed to, contain the entire text of the agreement between the contracting parties. This document does not take the place of, nor may it be substituted for, an official subcontracting agreement in those situations that may require such an agreement. A copy of the fully executed *subcontract agreement* shall be submitted to the Engineer within fourteen (14) working days after contract execution.

It is further certified that the aforementioned mutually acceptable quote and fully executed subcontract agreement represent the entire agreement between the two parties involved and that no conversations, verbal agreements, or other forms of non-written representations shall serve to add to, delete, or modify the terms as stated.

The prime Contractor further represents that the aforementioned mutually acceptable quote and fully executed subcontract agreement shall remain on file for a period of not less than one year following completion of the prime's contract with the Department or for such longer period as provisions of governing Federal or State law or regulations may require. For purposes of this form, the term Prime Contractor shall refer to any Contractor utilizing a DBE subcontractor, regardless of tier, in which they are claiming DBE credit toward the contract goal. Contractors further jointly and severally represent that said binding agreement is for the performance of a "commercially useful function" as that term is employed in 49 C.F.R. Part 26.55 (c), (d).

TO BE SIGNED BY THE SUBCONTRACTOR TO THE PRIME CONTRACTOR, AND ANY LOWER TIER
SUBCONTRACTORS HAVING A CONTRACT WITH THE BELOW NAMED DBE FIRM

Prime Contractor: _____

By: _____
Signature Title

Date: _____

First Tier
Subcontractor
If Applicable:

By: _____
Signature Title

Date: _____

ORDER NO.: K60
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Form C-112
Rev. 3-1-11
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Second Tier
Subcontractor
If Applicable:

By: _____
Signature Title
Date: _____

Third Tier
Subcontractor
If Applicable

By: _____
Signature Title
Date: _____

DBE Contractor

By: _____
Signature Title
Date: _____

ORDER NO.: K60
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cn100-000026-08

GENERAL PROJECT REQUIREMENTS, SUPPLEMENTAL SPECIFICATIONS (SSs), SPECIAL PROVISIONS (SPs) AND SPECIAL PROVISION COPIED NOTES (SPCNs)

This project shall be constructed according to: the plans; the *Virginia Department of Transportation Road and Bridge Specifications*, dated 2020 and the Supplement thereto, dated 2022; the *Virginia Department of Transportation Road and Bridge Standards*, dated 2016, with revisions issued online as of the advertisement date for this project incorporated; the 2011 edition of the *Virginia Work Area Protection Manual with Revision Number 2.1* incorporated, dated November 1, 2020; the 2009 edition of the *MUTCD with Revision Numbers 1 and 2* incorporated, dated May 2012; and the 2011 edition of the *Virginia Supplement to the MUTCD with Revision Number 1* dated September 30, 2013; and the Supplemental Specifications, Special Provisions and Special Provision Copied Notes in this contract. The status in the Contract of each of these documents will be according to Section 105.12 of the Specifications.

Special Provision Copied Notes in this contract are designated with "(SPCN)" after the date.

The information at the top and left of each Special Provision Copied Note in this contract is file reference information for Department use only. The information in the upper left corner above the title of each Supplemental Specification and Special Provision in this contract is file reference information for Department use only.

4-4-22 (SPCN)

[cn105-000110-00](#)

SECTION 105.01—NOTICE TO PROCEED — The Notice to Proceed date for this contract will be May 6, 2024.

7-12-16 (SPCN) [\[formerly cn105-010100-00\]](#)

[cn512-000120-00](#)

SECTION 512—MAINTAINING TRAFFIC of the Specifications is amended as follows:

Section 512.03(i)—Impact Attenuator Service is amended to replace the second paragraph with the following:

Only Type 1 re-directive low-maintenance impact attenuators in accordance with Section 505 shall be used on highways with posted speed limits greater than 50 mph or with an ADT greater than 25,000 vehicles per day.

7-13-16_(SPCN)

ORDER NO.: K60
CONTRACT ID. NO.: C0000111466C01

[cn512-000310-00](#)

POLICE PATROLS — The Contractor is advised that the Department will use Police patrols in construction work zones when traffic flow problems are anticipated, to enhance the safety of both the public and construction personnel, during the life of this contract.

4-25-88c; Reissued 7-12-16 (SPCN) [\[formerly cn512-030100-00\]](#)

[cn704-000200-00](#)

INLAID PAVEMENT MARKER LOCATION AND SPACING — The Contractor shall not install markers on existing bridge decks. Inlaid Pavement Markers shall be installed on new bridge decks where required by the Plans. Inlaid Pavement Markers shall be placed in relation to pavement joints and cracks as follows:

- In existing Asphalt Concrete pavement, new or existing Hydraulic Cement Concrete pavement, and bridge decks, the edge of the groove shall be at least 2 inches from pavement joints and cracks, ensuring that the finished line of markers is straight in accordance with the tolerance for pavement markings specified in Section 704.03 of the Specifications. Offset from the longitudinal joint shall take precedence over straightness of the line of markers.
- In new Hydraulic Cement Concrete pavement or when installed in conjunction with new latex modified microsurfacing or slurry seal treatments, the edge of the groove shall be 2 inches minimum from the surface course pavement joint and 1 inch maximum off alignment from the corresponding pavement marking line. The finished line of markers shall be straight in accordance with the tolerance for pavement markings specified in Section 704.03 of the Specifications. Straightness of the line of markers and alignment with the corresponding pavement marking line takes precedence over offset from the surface course joint.

8-11-21

DRUG-FREE WORKPLACE— The Contractor shall:

- Provide a Drug-Free Workplace for the Contractor's employees.
- Post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition.
- State in all solicitations or advertisements for employees placed by or on behalf of the Contractor that the Contractor maintains a Drug-Free Workplace.
- Include the provisions of the foregoing clauses in every Subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each Subcontractor or vendor.

For the purposes of this provision, "Drug-Free Workplace" means a site for the performance of work done in connection with the Contract. The Contractor's employees, and those of his Subcontractors, shall be prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession, or use of any controlled substance or marijuana during the performance of the Work.

7-3-19 (SPCN)

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cq107-000150-00

EQUAL EMPLOYMENT OPPORTUNITY

Section 107.14(a)1 – Required by §2.2-4201 and §2.2-4311 of the Code of Virginia is replaced with the following:

1. **Required by §2.2-4201 and §2.2-4311 of the Code of Virginia:** During the performance of this Contract, the Contractor agrees as follows:
 - a. The Contractor shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, or national origin, age, disability, or other basis prohibited by state law relating to discrimination in employment, except where religion, sex, or national origin is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause, including the names of all contracting agencies with which the Contractor has contracts of over \$10,000.
 - b. The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that such contractor is an equal opportunity employer. However, notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this chapter.
 - c. If the Contractor employs more than five employees, the Contractor shall (i) provide annual training on the Contractor's sexual harassment policy to all supervisors and employees providing services in the Commonwealth, except such supervisors or employees that are required to complete sexual harassment training provided by the Department of Human Resource Management, and (ii) post the Contractor's sexual harassment policy in (a) a conspicuous public place in each building located in the Commonwealth that the Contractor owns or leases for business purposes and (b) the Contractor's employee handbook.

The Contractor shall include the provisions of subdivisions a, b, and c in every subcontract or purchase order of over \$10,000, so that such provisions shall be binding upon each subcontractor or vendor.

Nothing contained in this chapter shall be deemed to empower any agency to require any contractor to grant preferential treatment to, or discriminate against, any individual or any group because of race, color, religion, sex, or national origin on account of an imbalance that may exist with respect to the total number or percentage of persons of any race, color, religion, sex, or national origin employed by such contractor in comparison with the total number or percentage of persons of such race, color, religion, sex, or national origin in any community or in the Commonwealth.

5-11-22 (SPCN)

ORDER NO.: K60
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SECTION 317—STONE MATRIX ASPHALT CONCRETE PLACEMENT of the Specifications is amended as follows:

317.08—Compaction is amended to replace the second paragraph with the following:

The Contractor shall approach the use of vibratory rollers on SMA with caution to minimize coarse aggregate fracture/breakage in the aggregate skeleton of SMA mixes. If the Contractor elects to use a vibratory roller, the mat should receive not more than three vibratory passes. The Contractor shall use the roller only on the highest frequency and lowest amplitude setting.

9-17-18 (SPCN)

CONTRACTOR MAINTENANCE OF TEMPORARY MARKINGS – The second, third, and fourth paragraphs of Section 512.03(k)3 of the Specifications will also apply to Sections 512.03(k)1 and 512.03(k)2 of the Specifications.

6-13-17 (SPCN)

PROTECTION OF BAT SPECIES — If bats are observed roosting on a structure, the Contractor shall immediately notify the Engineer and suspend work in the immediate vicinity of the bats until authorized to continue.

1-17-18 (SPCN)

ORDER NO.: K60
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[cn108-000413-02](#)

SUBSTANTIAL COMPLETION INCENTIVE/DISINCENTIVE

The following terms are defined:

- **Substantial Completion** is defined as completing the project to a point such that it can be safely and effectively used by the public or the Department for the purposes intended. Work not required for Substantial Completion includes establishment of vegetation and the removal of temporary erosion and sediment control items.
- **Substantial Completion Date** is the date on or before which all work required for Substantial Completion must be completed. This date will not change except for an extension of the Contract time limit for a Compensable Delay as defined by Section 109.05(e) of the Specifications.

The Substantial Completion Date for this project is June 3, 2026

If the Substantial Completion requirements are not met on or before the Substantial Completion Date as adjusted by the Engineer for Compensable Delay, the Department will assess a disincentive of \$3,100 per Calendar Day after the Substantial Completion Date as adjusted by the Engineer for Compensable Delay that the Contractor does not achieve Substantial Completion

The disincentive will be assessed, not as a penalty, but as agreed compensation for damages resulting from the Contractor's delay. The disincentive amount is calculated based on Department related traffic control and maintenance costs, detour costs, or daily road user costs, as applicable.

The Contractor waives any defense as to the validity of any disincentives stated in the Contract, the Specifications, or this Special Provision, and assessed by the Department against the Contractor on the grounds that such disincentives are void as penalties or are not reasonably related to actual damages.

12-14-23 (SPCN)

RECONSTRUCTING EXISTING MEDIAN BARRIER –The cost for reconstructing existing median barrier as shown in the Plans; and all related work and materials shall be incidental to other appropriate Contract items of work.

10-13-23 (SPCN)

V.E.S PATCHING TYPE B AND TYPE C – shall be in accordance with Section 412 of the Specifications, except that the concrete used shall be Latex Modified Concrete Very Early Strength (LMCVES) in accordance with Section 217.13 of the Specifications.

10-13-23 (SPCN)

BACKWALL RECONSTRUCTION (VES) – shall be in accordance with Section 412 of the specifications for back wall reconstruction (HES), except that the work will be done on the substructure as described in the Plans and the concrete used shall be Latex Modified Concrete Very Early Strength (LMCVES) in accordance with Section 217.13 of the Specifications.

10-13-23 (SPCN)

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EXPANSION JOINT RECONSTRUCTION (VES) – shall be in accordance with Section 412 of the Specifications for expansion joint reconstruction (HES), except that the concrete used shall be Latex Modified Concrete Very Early Strength (LMCVES) in accordance with section 217.13 of the Specifications.

10-13-23 (SPCN)

CRUSHER RUN AGGREGATE NO. 25 OR 26 shall conform to Section 205 of the Specifications and shall be placed at locations shown on the Plans or as directed by the Engineer. Crusher run aggregate No. 25 or 26 will be measured in tons and will be paid for at the Contract ton price. This price shall include furnishing, placing, and compacting.

Payment will be made under:

| Pay Item | Pay Unit |
|------------------------------------|-----------------|
| Crusher run aggregate No. 25 or 26 | Ton |

10-13-23 (SPCN)

BEDDING MATERIAL AGGREGATE NO. 57 shall conform to Section 203 of the Specifications and shall be placed in accordance with Section 302 of the Specifications except as modified herein. The aggregate shall be placed at locations shown on the Plans or as directed by the Engineer. Bedding material aggregate No. 57 will be measured in tons and will be paid for at the Contract ton price. This price shall include furnishing, placing, and compacting.

Payment will be made under:

| Pay Item | Pay Unit |
|-------------------------------|-----------------|
| Bedding material aggr. No. 57 | Ton |

4-10-20 (SPCN)

ORDER NO.: K60
CONTRACT ID. NO.: C0000111466C01

SP0F0-000100-00

Reissued July 12, 2016

PREDETERMINED MINIMUM WAGE RATES

"General Decision Number: VA20230111 01/06/2023

Superseded General Decision Number: VA20220111

State: Virginia

Construction Type: Highway

Counties: Chesterfield and Colonial Heights* Counties in Virginia.

*including the independent city of Colonial Heights

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

| | | |
|-------------------------------|----------------------------|--|
| If the contract is entered | . Executive Order 14026 | |
| into on or after January 30, | generally applies to the | |
| 2022, or the contract is | contract. | |
| renewed or extended (e.g., an | . The contractor must pay | |
| option is exercised) on or | all covered workers at | |
| after January 30, 2022: | least \$16.20 per hour (or | |
| | the applicable wage rate | |
| | listed on this wage | |
| | determination, if it is | |
| | higher) for all hours | |
| | spent performing on the | |
| | contract in 2023. | |
| | | |

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| | |
|---|--|
| If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022: | . Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023. |
|---|--|

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

| | |
|---------------------|------------------|
| Modification Number | Publication Date |
| 0 | 01/06/2023 |

ELEC0080-011 12/01/2021

| | Rates | Fringes |
|---|----------|---------|
| ELECTRICIAN, Includes Traffic Signalization..... | \$ 30.55 | 11.51 |

 SUVA2016-047 07/02/2018

| | Rates | Fringes |
|------------------------------------|-------------|---------|
| CARPENTER, Includes Form Work.... | \$ 19.22 | 0.00 |
| CEMENT MASON/CONCRETE FINISHER.... | \$ 16.03 ** | 2.47 |
| IRONWORKER, REINFORCING..... | \$ 20.80 | 0.00 |
| IRONWORKER, STRUCTURAL..... | \$ 27.38 | 0.00 |

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| | | | |
|---|-------------|--|------|
| LABORER: Asphalt, Includes Raker, Shoveler, Spreader and Distributor..... | \$ 19.71 | | 3.56 |
| LABORER: Common or General..... | \$ 15.51 ** | | 0.00 |
| LABORER: Grade Checker..... | \$ 14.88 ** | | 0.00 |
| LABORER: Pipelayer..... | \$ 17.76 | | 0.00 |
| LABORER: Power Tool Operator.... | \$ 15.69 ** | | 0.00 |
| OPERATOR: Backhoe/Excavator/Trackhoe..... | \$ 18.14 | | 0.00 |
| OPERATOR: Bobcat/Skid Steer/Skid Loader..... | \$ 19.16 | | 4.45 |
| OPERATOR: Broom/Sweeper..... | \$ 17.40 | | 2.01 |
| OPERATOR: Crane..... | \$ 24.42 | | 4.69 |
| OPERATOR: Drill..... | \$ 24.66 | | 0.00 |
| OPERATOR: Gradall..... | \$ 19.26 | | 0.00 |
| OPERATOR: Grader/Blade..... | \$ 23.21 | | 0.00 |
| OPERATOR: Hydroseeder..... | \$ 16.64 | | 0.00 |
| OPERATOR: Loader..... | \$ 17.17 | | 0.00 |
| OPERATOR: Mechanic..... | \$ 21.43 | | 0.00 |
| OPERATOR: Milling Machine..... | \$ 23.12 | | 3.60 |
| OPERATOR: Paver (Asphalt, Aggregate, and Concrete)..... | \$ 21.05 | | 0.00 |
| OPERATOR: Piledriver..... | \$ 21.83 | | 4.08 |
| OPERATOR: Roller (Finishing).... | \$ 19.05 | | 1.29 |
| OPERATOR: Roller..... | \$ 22.10 | | 0.00 |

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| | | |
|--|-------------|------|
| OPERATOR: Screed..... | \$ 22.13 | 4.89 |
| OPERATOR: Asphalt Spreader and Distributor..... | \$ 19.09 | 1.81 |
| OPERATOR: Bulldozer, Including Utility..... | \$ 18.22 | 2.69 |
| TRAFFIC CONTROL: Flagger..... | \$ 12.89 ** | 0.00 |
| TRUCK DRIVER : HEAVY 7CY & UNDER..... | \$ 15.53 ** | 0.00 |
| TRUCK DRIVER: Fuel and Lubricant Service..... | \$ 18.25 | 0.00 |
| TRUCK DRIVER: HEAVY OVER 7 CY..... | \$ 16.98 | 0.00 |
| TRUCK DRIVER: Single & Multi Axle..... | \$ 19.23 | 0.00 |

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

=====

** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$16.20) or 13658 (\$12.15). Please see the Note at the top of the wage determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is

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like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

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

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

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Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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U.S. DEPARTMENT OF LABOR
OFFICE OF THE SECRETARY
WASHINGTON
DECISION OF THE SECRETARY

This case is before the Department of Labor pursuant to a request for a wage predetermination as required by law applicable to the work described.

A study has been made of wage conditions in the locality and based on information available to the Department of Labor the wage rates and fringe payments listed are hereby determined by the Secretary of Labor as prevailing for the described classes for labor in accordance with applicable law.

This wage determination decision and any modifications thereof during the period prior to the stated expiration date shall be made a part of every contract for performance of the described work as provided by applicable law and regulations of the Secretary of Labor, and the wage rates and fringe payments contained in this decision, including modifications, shall be the minimums to be paid under any such contract and subcontractors on the work.

The Contracting Officer shall require that any class of laborers and mechanics which is not listed in the wage determination and which is to be employed under the Contract, shall be classified or reclassified conformably to the wage determination, and a report of the action taken shall be sent by the Federal agency to the Secretary of Labor. In the event the interested parties cannot agree on the proper classification or reclassification of a particular class of laborers and mechanics to be used, the question accompanied by the recommendation of the Contracting Officer shall be referred to the Secretary for determination.

Before using apprentices on the job the contractor shall present to the Contracting Officer written evidence of registration of such employees in a program of a State apprenticeship and training agency approved and recognized by the U.S. Bureau of Apprenticeship and Training. In the absence of such a State agency, the Contractor shall submit evidence of approval and registration by the U.S. Bureau of Apprenticeship and Training.

The Contractor shall submit to the Contracting Officer written evidence of the established apprentice-journeyman ratios and wage in the project area, which will be the basis for establishing such ratios and rates for the project under the applicable contract provisions.

Fringe payments include medical and hospital care, compensation for injuries or illness resulting from occupational activity, unemployment benefits, life insurance, disability and sickness insurance, accident insurance (all designated as health and welfare), pensions, vacation and holiday pay, apprenticeship or other similar programs and other bona fide fringe benefits.

By direction of the Secretary of Labor



E. Irving Manger, Associate Administrator
Division of Wage Determinations
Wage and Labor Standards Administration

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[SP0F0-000130-01](#)

July 20, 2022
FHWA-1273 (Electronic Version)

The following Form **FHWA-1273** titled **REQUIRED CONTRACT PROVISIONS, FEDERAL-AID CONSTRUCTION CONTRACTS** shall apply to this contract:

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FHWA-1273 -- Revised July 5, 2022

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Non-segregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
- XI. Certification Regarding Use of Contract Funds for Lobbying
- XII. Use of United States-Flag Vessels:

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all

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contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (see 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

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a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

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

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

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

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

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

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

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

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

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

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

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

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- b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.
- c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

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

- a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
- b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
- c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
- d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

- a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.
- b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).
- c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.
- d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

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7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

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

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

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

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the

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contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (1) Withholding monthly progress payments;
- (2) Assessing sanctions;
- (3) Liquidated damages; and/or
- (4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

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

- (1) The number and work hours of minority and nonminority group members and women employed in each work classification on the project;
- (2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and
- (3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and nonminority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than \$10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas,

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transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

- a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

- b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:
 - (i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

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(ii) The classification is utilized in the area by the construction industry; and

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

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

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

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

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

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

2. Withholding (29 CFR 5.5)

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

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3. Payrolls and basic records (29 CFR 5.5)

- a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.
- b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency.
- (2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
- (i) That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;
 - (ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR part 3;
 - (iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

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(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

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

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees (29 CFR 5.5)

a. Apprentices (programs of the USDOL).

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

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

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

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

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b. Trainees (programs of the USDOL).

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

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

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

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

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8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility (29 CFR 5.5)

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1 of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph 1 of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1 of this section. 29 CFR 5.5.

* \$27 as of January 23, 2019 (See 84 FR 213-01, 218) as may be adjusted annually by the Department of Labor; pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990).

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3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 2 of this section. 29 CFR 5.5.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs 1 through 4 of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1 through 4 of this section. 29 CFR 5.5.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;
- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

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3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on longstanding interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a

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violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

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

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

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

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT
(42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of \$150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.326.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.326.

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

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1. Instructions for Certification – First Tier Participants:

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

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- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.
- c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.
- d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.
- e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).
- f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.
- g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 180.300.
- h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>). 2 CFR 180.300, 180.320, and 180.325.
- i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and

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information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

3. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

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

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

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200.

You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov>), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

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

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is

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suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

* * * * *

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

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals: (a) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(b) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(c) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

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

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000. 49 CFR Part 20, App. A.

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

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

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

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or

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entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

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

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

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CONTRACT ID. NO.: C0000111466C01

[SP0F0-000150-01](#)

July 17, 2017

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE
EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)**

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals for female and minority participation, expressed in percentage terms of the Contractor's aggregate work force in each trade on all construction works in the covered area, are as follows:

Females- 6.9%
Minorities - See Attachment "A"

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

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

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days the award of any construction subcontract in excess of \$10,000 at any tier for construction works under this contract. The notification shall list the name, address and telephone number of the subcontractor, employer identification number, estimated dollar amount of the subcontract, estimated starting and completion dates of the subcontract and the geographical area in which the Contract is to be performed.

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

1. As, used in this provision:
 - a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
 - b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
 - c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U. S. Treasury Department Form 941;

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- d. "Minority" includes:
- (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation.
3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U. S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors and Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7 a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction Contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.
5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.
6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U. S. Department of Labor.
7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to

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achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

- a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, shall assign two or more women to each construction project. The Contractor shall specifically ensure that all foreman, superintendents and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites in such facilities.
- b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
- c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off the street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union, or if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.
- d. Provide immediate written notification to the Director when the union or unions which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or women sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
- e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.
- f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper or annual report; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents and General Foremen prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed and disposition of the subject matter.
- h. Disseminate the Contractor's EEO policy externally by including in any news media advertisement that the Contractor is "An Equal Opportunity Employer" for minority and female, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.
- i. Directs its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and recruitment and training

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organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures and tests to be used in the selection process.

- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of Contractor's workforce.
 - k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
 - l. Conduct, at least annually, an inventory and evaluation of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for such opportunities through appropriate training or other means.
 - m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
 - n. Ensure that all facilities and company activities are nonsegregated, except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
 - o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
 - p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
9. Goals for women have been established. However, the Contractor IS required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner, that is even though the Contractor has achieved its goals for women, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized.
10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, sexual orientation, gender identity, or national origin.

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11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
13. The Contractor, in fulfilling its obligations under these specifications shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director will proceed in accordance with 41 CFR 60-4.8.
14. The Contractor shall designate and make known to the Department a responsible official as the EEO Officer to monitor all employment related activity, to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, Contractors will not be required to maintain separate records.
15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

ATTACHMENT A

| <u>Economic Area</u> | <u>Goal (Percent)</u> |
|---|-----------------------|
| Virginia: | |
| 021 Roanoke-Lynchburg, VA | |
| SMSA Counties: | |
| 4640 Lynchburg, VA | 19.3 |
| VA Amherst; VA Appomattox; VA Campbell; VA Lynchburg | |
| 6800 Roanoke, VA | 10.2 |
| VA Botetourt; VA Craig; VA Roanoke; VA Roanoke City; VA Salem | |
| Non-SMSA Counties | 12.0 |
| VA Alleghany; VA Augusta; VA Bath; VA Bedford; VA Bland; VA Carroll; | |
| VA Floyd; VA Franklin; VA Giles; VA Grayson; VA Henry; VA Highland; | |
| VA Montgomery; VA Nelson; VA Patrick; VA Pittsylvania; VA Pulaski; | |
| VA Rockbridge; VA Rockingham; VA Wythe; VA Bedford City; VA Buena | |
| Vista: | |
| VA Clifton Forge; VA Covington; VA Danville; VA Galax; VA Harrisonburg; | |
| VA Lexington; VA Martinsville; VA Radford; VA Staunton; VA Waynesboro; | |
| WV Pendleton. | |
| 022 Richmond, VA | |
| SMSA Counties: | |

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| | |
|---|------|
| 6140 Petersburg - Colonial Heights - Hopewell, VA | 30.6 |
| VA Dinwiddie; VA Prince George; VA Colonial Heights; VA Hopewell; VA Petersburg. | |
| 6760 Richmond, VA | 24.9 |
| VA Charles City; VA Chesterfield; VA Goochland, VA Hanover; VA Henrico; VA New Kent; VA Powhatan; VA Richmond. | |
| Non-SMSA Counties | 27.9 |
| VA Albemarle; VA Amelia; VA Brunswick; VA Buckingham, VA Caroline; VA Charlotte; VA Cumberland; VA Essex; VA Fluvanna; VA Greene; VA Greensville; VA Halifax; VA King and Queen; VA King William; VA Lancaster; VA Louisa; VA Lunenburg; VA Madison; VA Mecklenburg; VA Northumberland; VA Nottoway; VA Orange; VA Prince Edward; VA Richmond VA Sussex; VA Charlottesville; VA Emporia; VA South Boston | |
| 023 Norfolk - Virginia Beach - Newport News VA: | |
| SMSA Counties: | |
| 5680 Newport News- Hampton, VA | 27.1 |
| VA Gloucester; VA James City; VA York; VA Hampton; VA Newport News; VA Williamsburg. | |
| 5720 Norfolk - Virginia Beach - Portsmouth, VA - NC | 26.6 |
| NC Currituck; VA Chesapeake; VA Norfolk; VA Portsmouth; VA Suffolk; VA Virginia Beach. | |
| Non-SMSA Counties | 29.7 |
| NC Bertie; NC Camden; NC Chowan; NC Gates; NC Hertford; NC Pasquotank; NC Perquimans; VA Isle of Wight; VA Matthews; VA Middlesex; VA Southampton; VA Surry; VA Franklin. | |
| Washington, DC: | |
| 020 Washington, DC. | |
| SMSA Counties: | |
| 8840 Washington, DC - MD - VA | 28.0 |
| DC District of Columbia; MD Charles; MD Montgomery MD Prince Georges; VA Arlington; VA Fairfax; VA Loudoun; VA Prince William VA Alexandria; VA Fairfax City; VA Falls Church. | |
| Non- SMSA Counties | 25.2 |
| MD Calvert; MD Frederick; MD St. Marys; MD Washington; VA Clarke; VA Culpeper; VA Fauquier; VA Frederick; VA King George; VA Page; VA Rappahannock; VA Shenandoah; VA Spotsylvania; VA Stafford; VA Warren; VA Westmoreland; VA Fredericksburg; VA Winchester WV Berkeley; WV Grant; WV Hampshire; WV Hardy; WV Jefferson; WV Morgan. | |
| Tennessee: | |
| 052 Johnson City - Kingsport - Bristol, TN - VA | |
| SMSA Counties: | |
| 3630 Johnson City - Kingsport -Bristol, TN-VA | 2.6 |
| TN Carter; TN Hawkins; TN Sullivan; TN Washington; VA Scott: VA Washington; VA Bristol. | |
| Non-SMSA Counties | 3.2 |
| TN Greene; TN Johnson; VA Buchanan; VA Dickenson; VA Lee; VA Russell; VA Smyth; VA Tazewell; VA Wise; VA Norton; WV McDowell; WV Mercer. | |
| Maryland: | |
| 019 Baltimore MD | |
| Non-SMSA Counties | 23.6 |
| MD Caroline; MD Dorchester; MD Kent; MD Queen Annes; MD Somerset; MD Talbot; MD Wicomico; MD Worchester; VA Accomack; VA Northampton. | |

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[SP102-000120-00 \[formerly SP102-010100-00\]](#)

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
NON-DISCRIMINATION IN EMPLOYMENT AND CONTRACTING PRACTICES

January 10, 2017

I. Description

This Special Provision implements Executive Order 61, ensuring equal opportunity and access for all Virginians in state contracting and public services.

II. Non-Discrimination

The Contractor shall maintain a non-discrimination policy, which prohibits discrimination by the Contractor on the basis of race, sex, color, national origin, religion, sexual orientation, gender identity, age, political affiliation, disability, or veteran status. This policy shall be followed in all employment practices, subcontracting practices, and delivery of goods or services. The Contractor shall also include this requirement in all subcontracts valued over \$10,000.

III. Measurement and Payment

Conformance with this Special Provision will not be measured for individual payment, and will be considered incidental to the Work.

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[SP102-000510-02](#)

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
USE OF DOMESTIC MATERIAL

December 19, 2018

SECTION 102.05 PREPARATION OF BID of the Specifications is amended to include the following:

In accordance with the provisions of Section 635.410(b) of Title 23 CFR, hereinafter referred to as "Buy America", except as otherwise specified, all iron and steel (including miscellaneous items such as fasteners, nuts, bolts and washers) to be permanently incorporated for use on federal aid projects shall be produced in the United States of America. This applies to any iron or steel item brought onto the project, regardless of the percentage of iron or steel that exists in the pay item or in the final form they take; however, electrical components (i.e., combination products such as signal controllers and similar products which are only sold as a unit) are not subject to Buy America provisions if the product as purchased by the Contractor is less than 50% steel and iron. "Produced in the United States of America" means all manufacturing processes occur in one of the 50 United States, the District of Columbia, Puerto Rico or in the territories and possessions of the United States. "Manufacturing processes" are defined as any process which alters or modifies the chemical content, physical size or shape, or final finish of iron or steel material (such as rolling, extruding, bending, machining, fabrication, grinding, drilling, finishing, or coating). For the purposes of satisfying this requirement "coating" is defined as the application of epoxy, galvanizing, painting or any other such process that protects or enhances the value of the material to which the coating is applied. Non-iron and non-steel materials used in the coating process do not need to be produced in the United States as long as the application of the coating occurred in the United States. The manufacturing process is considered complete when the resultant product is ready for use as an item in the project (e.g. fencing, posts, girders, pipe, manhole covers, etc.) or is incorporated as a component of a more complex product by means of further manufacturing. Final assembly of a product may occur outside of the United States of America provided no further manufacturing processes take place.

For the purposes of this provision, all steel or iron material meeting the criteria as produced in the United States of America will be considered as "Domestic Material." All iron and steel items not meeting the criteria as produced in the United States of America will be considered "Non-Domestic Material."

A minimal amount of "Non-Domestic" steel or iron material may be incorporated in the permanent work on a federal-aid contract provided that the cost of such materials or products does not exceed one-tenth of one percent of the Contract amount or \$2500, whichever is greater. The cost of the "Non-Domestic Material" is defined as its monetary value delivered to the job site and supported by invoices or bill of sale to the Contractor. This delivered-to-site cost must include transportation, assembly, installation and testing.

Buy America provisions do not apply to iron or steel products used temporarily in the construction of a project such as temporary sheet piling, temporary bridges, steel scaffolding, falsework or such temporary material or product or material that remains in place for the Contractor's convenience.

Raw materials such as iron ore, pig iron, processed, pelletized and reduced iron ore, waste products (including scrap, that is, steel or iron no longer useful in its present form from old automobiles, machinery, pipe, railroad rail, or the like and steel trimmings from mills or product manufacturing) and other raw materials used in the production of steel and/or iron products may, however, be imported. Extracting, handling, or crushing the raw materials which are inherent to the transporting the materials for later use in the manufacturing process are exempt from Buy America.

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Any items containing foreign source steel or iron billet shall be considered “Non-Domestic Materials.” Additionally, iron or steel ingots or billets produced in the United States, but shipped outside the United States of America for any manufacturing process and returned for permanent use in a project shall be considered “Non-Domestic Materials.”

Waivers:

The process for receiving a waiver for Buy America provisions is identified in 23 CFR 635.410(c). The Contractor shall not anticipate that any Buy America provisions will be waived.

Certification of Compliance:

The Contractor is required to submit a Certificate of Compliance prior to incorporating any items containing iron or steel items into the project. This shall be accomplished by the Contractor submitting the Form C-76 Certificate of Compliance to the Department when the items are delivered to the project site. The Certification of Compliance will certify whether the items are considered “Domestic Material” or “Non-Domestic Material” as referenced in this Special Provision. The certificate must be signed and dated by the Prime Contractor’s Superintendent and include a Buy America Submittal Number. The Buy America Submittal Number is simply the Contractor’s project specific sequential numbering system that will allow the Contractor and Department to track the total number of certificates provided and the individual items containing iron or steel associated with each certificate.

Supporting Documentation:

Supporting documentation to demonstrate compliance with Buy America provisions (such as mill test reports manufacturer/supplier certifications, etc.) shall be organized by Buy America Submittal Number and maintained by the Contractor from the date of delivery until three years after project acceptance. The Contractor may maintain this documentation electronically or in paper format.

The Department or FHWA may review the Contractor’s supporting documentation to verify compliance with the Buy America provisions at any time. Supporting documentation shall be provided within five business days of the request. The burden of proof to meet the Buy America provisions rests with the Contractor. If the supporting documentation does not undeniably demonstrate to FHWA or the Department that the “Domestic Materials” identified in the Certificates of Compliance were produced in the United States of America, then the Department may deduct payment from moneys due the Contractor for the value of the iron and steel that did not meet the Buy America provisions.

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SP107-000110-00

C-45

Rev. 10-9-14; Reissued 10-27-16

VIRGINIA DEPARTMENT OF TRANSPORTATION

STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND THE VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM (VPDES) GENERAL PERMIT FOR THE DISCHARGE OF STORMWATER FROM CONSTRUCTION ACTIVITIES

CONTRACTOR CERTIFICATION STATEMENT

Order No.: K60 Project Number: 0095-020-818, B660, C501
Route: 95 Contract ID. #: C0000111466C01

I certify under penalty of law that I understand the terms and conditions of the project contract, plans, permits, specifications and standards related to the erosion and sediment control, stormwater management and stormwater pollution prevention plan requirements for the affected activities associated with this project, and the requirements of the VPDES General Permit for the Discharge of Stormwater from Construction Activities (the VPDES Construction Permit) , if applicable to this project, issued by the Virginia Department of Environmental Quality. The VPDES Construction Permit authorizes the storm water discharges associated with the construction activities from the project site identified and described in the bid documents and subsequent contract including any onsite or off-site support facility areas located within VDOT right of way or easement and required for the complete fulfillment of the work therein.

Signature: _____

Name: _____

Title: _____

Contracting Firm: _____

Address: _____

Phone Number: _____

* Project Address/Location: _____

Certified on this date: _____

* Include any off-site support facility areas located within VDOT right of way or easement.
(Note: This form must be returned with performance and payment bonds)

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SP107-000120-00

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
**ELECTRONIC SUBMISSION OF PAYROLLS AND
DBE SUBCONTRACTOR PAYMENT FOR FEDERALLY FUNDED PROJECTS**

January 21, 2020

I. GENERAL REQUIREMENTS

The Contractor and all Subcontractors shall submit all certified payrolls and subcontractor payments, including those made to Disadvantaged Business Enterprises (DBEs), using the AASHTOWare Project Civil Rights and Labor (CRL) system in accordance with this specification. The term "subcontractor" shall include all vendors subject to FHWA-1273.

The electronic payroll submission and subcontractor payments through the CRL system replaces the paper submission of the C-57 and C-63 forms otherwise required by Sections 107.14(m) and 107.15 of the Specifications.

II. SYSTEM REQUIREMENTS

The CRL system is web based. The Contractor shall ensure compatibility with the CRL system as necessary to successfully execute the Work. The CRL system works with Internet Explorer 11 or Google Chrome and requires the ability to read, create, and edit spreadsheets in the .xlsx file format.

The Contractor and Subcontractors will be granted access after submitting forms ITD-35 and ITD-36 for each individual user who requires an account. Only those firms with a required contract in the system should submit the Request Access form. The software is configured so that each firm will only be able see their specific contract information. There will only be one single sign-on process for multiple application access within the Department.

VDOT will provide access and link and a log-in identification (ID) for the CRL system to designated employees of the Contractor and approved subcontractors entered into the system for the contract. The log-in ID and password are unique to the designated employee and must not be shared with other employees. There are no fees associated with accessing the system or to receive a login ID.

The low bidders on Contract awards will be contacted by the State Civil Rights Manager after letting to begin the process for accessing the CRL system for them and their subcontractors. The State Civil Rights Manager will provide all training for entry of certified payrolls and DBE subcontractor payments in CRL.

The CRL website is located at:

https://www.virginiadot.org/business/aashtoware_project_civil_rights_and_labor%E2%84%A2_crl_management_system.asp.

III. PROCEDURES

1. CERTIFIED PAYROLL & SUBCONTRACTOR DATA SUBMISSION FOR FEDERALLY FUNDED PROJECTS

The Contractor and all subcontractors shall use the CRL system to provide VDOT electronic certified payrolls. The Contractor shall ensure that all subcontractors submit their certified payrolls into the system electronically.

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Electronic submittal of certified payrolls can be submitted using the following methods:

- Manually add, copy, or modify data into CRL;
- Import payroll data with the CRL payroll spreadsheet XML converter tool available at <https://xml.cloverleaf.net/spreadsheet/>;
- Convert payroll system program data to Payroll XML and import it into the CRL system. Information on how to convert to payroll program data to an XML file can be located at <https://xml.cloverleaf.net/resourcekit/>;
- The Contractor may send, on behalf of a subcontractor, payroll payment information based on a signed, certified paper payroll through the Electronica Proxy Payroll Process. Import payroll data with the CRL payroll spreadsheet XML converter tool available at <https://xml.cloverleaf.net/spreadsheet/>.

The District Civil Rights Manager or Engineer may require at any time, in writing, certified paper copies of the payrolls conforming to FHWA 1273 from any or all contractors working on the project.

2. DBE PAYMENT SUBMISSION REQUIREMENTS FOR FEDERALLY FUNDED PROJECTS

The Contractor shall post payment to DBE firms listed on their C-111 towards meeting their contract DBE goal per Federal DBE regulations. The Contractor shall submit, and shall require each Subcontractor to provide, payment amounts relative to all DBE involvement on the project during the life of the Contract in which participation occurs, and verification is available. The Contractor shall post payments to DBEs in CRL within 7 days after receipt of payment from the Department. Subcontractors shall post payments to DBEs in CRL within 7 days after receipt of payment from the Contractor.

The District Civil Rights Manager may require at any time, in writing, proof of payments from any or all subcontractors working on the project related to contractor DBE payments. The Contractor shall enter all payments made to all subcontractors into the Payment area of CRL for each estimate.

DBE Payments shall be entered only for those business entities that are being utilized in conjunction with performing a Commercial Useful Function (CUF).

More information about the CRL system can be located at <https://www.aashtowareproject.org/index.php>.

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
DBE REQUIREMENTS

August 18, 2017

SECTION 107 – LEGAL RESPONSIBILITIES of the Specifications is revised as follows:

Section 107.15 – Use of Small, Women-Owned, and Minority-Owned Business is renamed **Use of Disadvantaged Business Enterprises (DBEs)** and replaced with the following:

(a) **Disadvantaged Business Enterprise (DBE) Program Requirements**

Any Contractor, subcontractor, supplier, DBE firm, and contract surety involved in the performance of work on a federal-aid contract shall comply with the terms and conditions of the United States Department of Transportation (USDOT) DBE Program as the terms appear in Part 26 of the Code of Federal Regulations (49 CFR as amended), the USDOT DBE Program regulations; and the Virginia Department of Transportation's (VDOT or the Department) Road and Bridge Specifications and DBE Program rules and regulations.

For the purposes of this provision, Contractor is defined as the Prime Contractor of the Contract; and sub-contractor is defined as any DBE supplier, manufacturer, or subcontractor performing work or furnishing material, supplies or services to the Contract. The Contractor shall physically include this same contract provision in every supply or work/service subcontract that it makes or executes with a subcontractor having work for which it intends to claim credit.

In accordance with 49 CFR Part 26 and VDOT's DBE Program requirements, the Contractor, for itself and for its subcontractors and suppliers, whether certified DBE firms or not, shall commit to complying fully with the auditing, record keeping, confidentiality, cooperation, and anti-intimidation or retaliation provisions contained in those federal and state DBE Program regulations. By bidding on this contract, and by accepting and executing this contract, the Contractor agrees to assume these contractual obligations and to bind the Contractor's subcontractors contractually to the same at the Contractor's expense.

The Contractor or subcontractor shall not discriminate on the basis of race, color, sex, sexual orientation, gender identity, or national origin in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award, administration, and performance of this contract. Failure by the Contractor to carry out these requirements is a material breach of this contract, which will result in the termination of this contract or other such remedy, as VDOT deems appropriate.

All administrative remedies noted in this provision are automatic unless the Contractor exercises the right of appeal within the required timeframe(s) specified herein. Appeal requirements, processes, and procedures shall be in accordance with guidelines stated herein and current at the time of the proceedings. Where applicable, the Department will notify the Contractor of any changes to the appeal requirements, processes, and procedures after receiving notification of the Contractor's desire to appeal.

All time frames referenced in this provision are expressed in business days unless otherwise indicated. Should the expiration of any deadline fall on a weekend or holiday, such deadline will automatically be extended to the next normal business day.

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(b) DBE Certification

The only DBE firms eligible to perform work on a federal-aid contract for DBE contract goal credit are firms certified as Disadvantaged Business Enterprises by the Virginia Department of Small Business and Supplier Diversity (DSBSD) or the Metropolitan Washington Airports Authority (MWAA) in accordance with federal and VDOT guidelines. DBE firms must be certified in the specific work listed for DBE contract goal credit. A directory listing of certified DBE firms can be obtained from the Virginia Department of [Small Business and Supplier Diversity website: www.sbsd.virginia.gov](http://www.sbsd.virginia.gov).

(c) Bank Services

The Contractor and each subcontractor are encouraged to use the services of banks owned and controlled by socially and economically disadvantaged individuals. Such banking services and the fees charged for services typically will not be eligible for DBE Program contract goal credit. Such information is available from the VDOT's Internet Civil Rights Division website: http://www.virginiadot.org/business/resources/Civil_Rights/VDOT_DB_E_Program_Plan.pdf

(d) DBE Program-Related Certifications Made by Bidders\Contractors

By submitting a bid and by entering into any contract on the basis of that bid, the bidder/Contractor certifies to each of the following DBE Program-related conditions and assurances:

1. That the management and bidding officers of its firm agree to comply with the bidding and project construction and administration obligations of the USDOT DBE Program requirements and regulations of 49 CFR Part 26 as amended, and VDOT's Road and Bridge Specifications and DBE Program requirements and regulations.
2. Under penalty of perjury and other applicable penal law that it has complied with the DBE Program requirements in submitting the bid, and shall comply fully with these requirements in the bidding, award, and execution of the Contract.
3. To ensure that DBE firms have been given full and fair opportunity to participate in the performance of the Contract. The bidder certifies that all reasonable steps were, and will be, taken to ensure that DBE firms had, and will have, an opportunity to compete for and perform work on the Contract. The bidder further certifies that the bidder shall not discriminate on the basis of race, color, age, sex, sexual orientation, gender identity, or national origin in the performance of the Contract or in the award of any subcontract. Any agreement between a bidder and a DBE whereby the DBE promises not to provide quotations for performance of work to other bidders is prohibited.
4. As a bidder, good faith efforts were made to obtain DBE participation in the proposed contract at or above the goal for DBE participation established by VDOT. It has submitted as a part of its bid true, accurate, complete, and detailed documentation of the good faith efforts it performed to meet the Contract goal for DBE participation. The bidder, by signing and submitting its bid, certifies the DBE participation information submitted within the stated time thereafter is true, correct, and complete, and that the information provided includes the names of all DBE firms that will participate in the Contract, the specific line item(s) that each listed DBE firm will perform, and the creditable dollar amounts of the participation of each listed DBE. The specific line item must reference the VDOT line number and item number contained in the proposal.
5. The bidder further certifies, by signing its bid, it has committed to use each DBE firm listed for the specific work item shown to meet the Contract goal for DBE participation. Award of the

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Contract will be conditioned upon meeting these and other listed requirements of 49 CFR Part 26.53 and the contract documents. By signing the bid, the bidder certifies on work that it proposes to sublet; it has made good faith efforts to seek out and consider DBEs as potential subcontractors. The bidder shall contact DBEs to solicit their interest, capability, and prices in sufficient time to allow them to respond effectively, and shall retain on file proper documentation to substantiate its good faith efforts. Award of the Contract will be conditioned upon meeting these and other listed requirements of 49 CFR Part 26.53 and the contract documents.

6. Once awarded the Contract, the Contractor shall make good faith efforts to utilize DBE firms to perform work designated to be performed by DBEs at or above the amount or percentage of the dollar value specified in the bidding documents. Further, the Contractor understands it shall not unilaterally terminate, substitute for, or replace any DBE firm that was designated in the executed contract in whole or in part with another DBE, any non-DBE firm, or with the Contractor's own forces or those of an affiliate of the Contractor without the prior written consent of VDOT as set out within the requirements of this provision.
7. Once awarded the contract, the Contractor shall designate and make known to the Department a liaison officer who is assigned the responsibility of administering and promoting an active and inclusive DBE program as required by 49 CFR Part 26 for DBEs. The designation and identity of this officer need be submitted only once by the Contractor during any twelve (12) month period at the preconstruction conference for the first contract the Contractor has been awarded during that reporting period. The Department will post such information for informational and administrative purposes at VDOT's Internet Civil Rights Division website.
8. Once awarded the Contract, the Contractor shall comply fully with all regulatory and contractual requirements of the USDOT DBE Program, and that each DBE firm participating in the Contract shall fully perform the designated work items with the DBE's own forces and equipment under the DBE's direct supervision, control, and management. Where a contract exists and where the Contractor, DBE firm, or any other firm retained by the Contractor has failed to comply with federal or VDOT DBE Program regulations and/or their requirements on that contract, VDOT has the authority and discretion to determine the extent to which the DBE contract regulations and/or requirements have not been met, and will assess against the Contractor any remedies available at law or provided in the Contract in the event of such a contract breach.
9. In the event a bond surety assumes the completion of work, if for any reason VDOT has terminated the prime Contractor, the surety shall be obligated to meet the same DBE contract terms and requirements as were required of the original prime Contractor in accordance with the requirements of this specification.

(e) Disqualification of Bidder

Bidders may be disqualified from bidding for failure to comply with the requirements of this Special Provision, the Contract specifications, and VDOT Road and Bridge Specifications.

(f) Bidding Procedures

The following bidding procedures shall apply to the Contract for DBE Program compliance purposes:

1. **Contract Goal, Good Faith Efforts Specified:** All bidders evidencing the attainment of DBE goal commitment equal to or greater than the required DBE goal established for the project

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must submit completed Form C-111, Minimum DBE Requirements, and Form C-48, Subcontractor/Supplier Solicitation and Utilization, as a part of the bid documents.

Form C-111 may be submitted electronically or may be faxed to the Department, but in no case shall the bidder's Form C-111 be received later than 10:00 a.m. the next business day after the time stated in the bid proposal for the receipt of bids. Form C-48 must be received within ten (10) business days after the bid opening.

If, at the time of submitting its bid, the bidder knowingly cannot meet or exceed the required DBE contract goal, it shall submit Form C-111 exhibiting the DBE participation it commits to attain as a part of its bid documents. The bidder shall then submit Form C-49, DBE Good Faith Efforts Documentation, within two (2) business days after the bid opening.

The lowest responsive and responsible bidder must submit its properly executed Form C-112, Certification of Binding Agreement, within three (3) business days after the bids are received. DBEs bidding as prime contractors are not required to submit Form C-112 unless they are utilizing other DBEs as subcontractors.

If, after review of the apparent lowest bid, VDOT determines the DBE requirements have not been met, the apparent lowest successful bidder must submit Form C-49, DBE Good Faith Efforts Documentation, which must be received by the Contract Engineer within two (2) business days after official notification of such failure to meet the aforementioned DBE requirements.

Forms C-48, C-49, C-111, and C-112 can be obtained from the VDOT website at:
<http://vdotforms.vdot.virginia.gov/>

Instructions for submitting Form C-111 can be obtained from the VDOT website at:
http://www.virginiadot.org/business/resources/const/Exp_DBE_Commitments.pdf

2. **Bid Rejection:** The failure of a bidder to submit the required documentation within the timeframes specified in the **Contract Goal, Good Faith Efforts Specified** section of this Special Provision may be cause for rejection of that bidder's bid.

If the lowest bidder is rejected for failure to submit the required documentation in the specified time frames, the Department may award the work to the next lowest bidder, or re-advertise the proposed work at a later date or proceed otherwise as determined by the Commonwealth.

3. **Good Faith Efforts Described:** In order to award a contract to a bidder that has failed to meet DBE contract goal requirements, VDOT will determine if the bidder's efforts were adequate good faith efforts, and if given all relevant circumstances, those efforts were made actively and aggressively to meet the DBE requirements. Efforts to obtain DBE participation are not good faith efforts if they could not reasonably be expected to produce a level of DBE participation sufficient to meet the DBE Program and contract goal requirements.

Good faith efforts may be determined through use of the following list of the types of actions the bidder may make to obtain DBE participation. This is not intended to be a mandatory checklist, nor is it intended to be exclusive or exhaustive. Other factors or types of efforts of similar intent may be relevant in appropriate cases:

- a. Soliciting through reasonable and available means, such as but not limited to, attendance at pre-bid meetings, advertising, and written notices to DBEs who have the capability to perform the work of the Contract. Examples include: advertising in at least one daily/weekly/monthly newspaper of general circulation, as applicable; phone contact with

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a completely documented telephone log, including the date and time called, contact person, or voice mail status; and internet contacts with supporting documentation, including dates advertised. The bidder shall solicit this interest no less than five (5) business days before the bids are due so that the solicited DBEs have enough time to reasonably respond to the solicitation. The bidder shall determine with certainty if the DBEs are interested by taking reasonable steps to follow up initial solicitations as evidenced by documenting such efforts as requested on Form C-49, DBE Good Faith Efforts Documentation.

- b. Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Contractor might otherwise prefer to completely perform all portions of this work in its entirety or use its own forces;
- c. Providing interested DBEs with adequate information about the plans, specifications, and requirements of the Contract in a timely manner, which will assist the DBEs in responding to a solicitation;
- d. Negotiating for participation in good faith with interested DBEs;
 - (1) Evidence of such negotiation shall include the names, addresses, and telephone numbers of DBEs that were considered; dates DBEs were contacted; a description of the information provided regarding the plans, specifications, and requirements of the Contract for the work selected for subcontracting; and, if insufficient DBE participation seems likely, evidence as to why additional agreements could not be reached for DBEs to perform the work;
 - (2) A bidder using good business judgment should consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and should take a firm's price, qualifications, and capabilities, as well as contract goals, into consideration. However, the fact that there may be some additional costs involved in finding and using DBEs is not sufficient reason for a bidder's failure to meet the Contract goal for DBE participation, as long as such costs are reasonable and comparable to costs customarily appropriate to the type of work under consideration. Also, the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make diligent good faith efforts. Bidders are not, however, required to accept higher quotes from DBEs if the price difference can be shown by the bidder to be excessive, unreasonable, or greater than would normally be expected by industry standards;
- e. A bidder cannot reject a DBE as being unqualified without sound reasons based on a thorough investigation of the DBE's capabilities. The DBE's standing within its industry, membership in specific groups, organizations, associations, and political or social affiliations, and union vs. non-union employee status are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal for DBE participation;
- f. Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by VDOT or by the bidder/Contractor;
- g. Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services subject to the restrictions contained in these provisions;

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- h. Effectively using the services of appropriate personnel from VDOT and from DMBE; available minority/women community or minority organizations; contractors' groups; local, state, and Federal minority/ women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and utilization of qualified DBEs.

(g) Documentation and Administrative Reconsideration of Good Faith Efforts

During Bidding: As described in the **Contract Goal, Good Faith Efforts Specified** section of this Special Provision, the bidder must provide Form C-49, DBE Good Faith Efforts Documentation, of its efforts made to meet the DBE contract goal as proposed by VDOT within the time frame specified in this provision. The means of transmittal and the risk for timely receipt of this information shall be the responsibility of the bidder. The bidder shall attach additional pages to the certification, if necessary, in order to fully detail specific good faith efforts made to obtain the DBE firms participation in the proposed contract work.

However, regardless of the DBE contract goal participation level proposed by the bidder or the extent of good faith efforts shown, all bidders shall timely and separately file their completed and executed forms C-111, C-112, C-48, and C-49, as aforementioned, or face potential bid rejection.

If a bidder does not submit its completed and executed forms C-111, or C-112, when required by this Special Provision, the bidder's bid will be considered non-responsive and may be rejected.

Where the Department upon initial review of the bid results determines the apparent low bidder has failed or appears to have failed to meet the requirements of the **Contract Goal, Good Faith Efforts Specified** section of this Special Provision and has failed to adequately document that it made a good faith effort to achieve sufficient DBE participation as specified in the bid proposal, that firm upon notification of the Department's initial determination will be offered the opportunity for administrative reconsideration before VDOT rejects that bid as non-responsive. The bidder shall address such request for reconsideration in writing to the Contract Engineer within five (5) business days of receipt of notification by the Department and shall be given the opportunity to discuss the issue and present its evidence in person to the Administrative Reconsideration Panel. The Administrative Reconsideration Panel will be made up of VDOT Division Administrators or their designees, none of who took part in the initial determination that the bidder failed to make the goal or make adequate good faith efforts to do so. After reconsideration, VDOT shall notify the bidder in writing of its decision and explain the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so.

If, after reconsideration, the Department determines the bidder has failed to meet the requirements of the Contract goal and has failed to make adequate good faith efforts to achieve the level of DBE participation as specified in the bid proposal, the bidder's bid will be rejected.

If sufficient documented evidence is presented to demonstrate that the apparent low bidder made reasonable good faith efforts, the Department will award the Contract and reduce the DBE requirement to the actual commitment identified by the lowest successful bidder at the time of its bid. The Contractor is still encouraged to seek additional DBE participation during the life of the Contract.

However, such action will not relieve the Contractor of its responsibility for complying with the reduced DBE requirement during the life of the Contract or any administrative sanctions as may be appropriate.

During the Contract: If a DBE, through no fault of the Contractor, is unable or unwilling to fulfill his agreement with the Contractor, the Contractor shall immediately notify the Department and provide all relevant facts. If a Contractor relieves a DBE subcontractor of the responsibility to

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perform work under their subcontract, the Contractor is encouraged to take the appropriate steps to obtain a DBE to perform an equal dollar value of the remaining subcontracted work. In such instances, the Contractor is expected to seek DBE participation towards meeting the goal during the performance of the Contract.

If the Contractor fails to conform to the schedule of DBE participation as shown on the progress schedule, or at any point at which it is clearly evident that the remaining dollar value of allowable credit for performing work is insufficient to obtain the scheduled participation, and the Contractor has not taken the preceding actions, the Contractor and any aforementioned affiliates may be subject to disallowance of DBE credit until such time as conformance with the schedule of DBE participation is achieved.

Project Completion: If the Contractor fails upon completion of the project to meet the required participation, the Contractor and any prime contractual affiliates, as in the case of a joint venture, may be enjoined from bidding as a prime Contractor, or participating as a subcontractor on VDOT projects for a period of 90 days.

Prior to enjoinder from bidding or denial to participate as a subcontractor for failure to comply with participation requirements, as provided hereinbefore, the Contractor may submit documentation to the State Construction Engineer to substantiate that failure was due solely to quantitative underrun(s), elimination of items subcontracted to DBEs, or to circumstances beyond their control, and that all feasible means have been used to obtain the required participation. The State Construction Engineer upon verification of such documentation shall make a determination whether or not the Contractor has met the requirements of the Contract.

If it is determined that the aforementioned documentation is insufficient or the failure to meet required participation is due to other reasons, the Contractor may request an appearance before the Administrative Reconsideration Panel to establish that all feasible means were used to meet such participation requirements. The decision of the Administrative Reconsideration Panel shall be administratively final. If the decision is made to enjoin the Contractor from bidding on other VDOT work as described herein, the enjoinder period will begin upon the Contractor's failure to request a hearing within the designated time frame or upon the Administrative Reconsideration Panel's decision to enjoin, as applicable.

(h) DBE Participation for Contract Goal Credit

1. Cost-plus subcontracts will not be considered to be in accordance with normal industry practice and will not normally be allowed for credit.
2. The applicable percentage of the total dollar value of the Contract or Subcontract awarded to the DBE will be counted toward meeting the Contract goal for DBE participation in accordance with the **DBE Program-Related Certifications Made by Bidders\Contractors** section of this Special Provision for the value of the work, goods, or services that are actually performed or provided by the DBE firm itself or subcontracted by the DBE to other DBE firms.
3. When a DBE performs work as a participant in a joint venture with a non-DBE firm, the Contractor may count toward the DBE goal only that portion of the total dollar value of the Contract equal to the distinctly defined portion of the Contract work that the DBE has performed with the DBE's own forces or in accordance with the provisions of this Section. The Department shall be contacted in advance regarding any joint venture involving both a DBE firm and a non-DBE firm to coordinate Department review and approval of the joint venture's organizational structure and proposed operation where the Contractor seeks to claim the DBE's credit toward the DBE contract goal.

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4. When a DBE subcontracts part of the work of the Contract to another firm, the value of that subcontracted work may be counted toward the DBE contract goal only if the DBE's subcontractor at a lower tier is a certified DBE. Work that a DBE subcontracts to either a non-DBE firm or to a non-certified DBE firm will not count toward the DBE contract goal. The cost of supplies and equipment a DBE subcontractor purchases or leases from the prime Contractor or the prime's affiliated firms will not count toward the Contract goal for DBE participation.
5. The Contractor may count expenditures to a DBE subcontractor toward the DBE contract goal only if the DBE performs a Commercially Useful Function (CUF) on that contract.
6. A Contractor may not count the participation of a DBE subcontractor toward the Contractor's final compliance with the DBE contract goal obligations until the amount being counted has actually been paid to the DBE. A Contractor may count sixty (60) percent of its expenditures actually paid for materials and supplies obtained from a DBE certified as a regular dealer, and one hundred (100) percent of such expenditures actually paid for materials and supplies obtained from a certified DBE manufacturer.
 - a. For the purposes of this Special Provision, a regular dealer is defined as a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles, or equipment required and used under the Contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. To be a regular dealer, the DBE firm shall be an established business that regularly engages, as its principal business and under its own name, in the purchase and sale or lease of the products or equipment in question. Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions will not be considered regular dealers.
 - b. A DBE firm may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone, or asphalt without owning, operating, or maintaining a place of business where it keeps such items in stock if the DBE both owns and operates distribution equipment for the products it sells and provides for the Contract work. Any supplementation of a regular dealer's own distribution equipment shall be by a long-term lease agreement and not on an *ad hoc* or contract-by-contract basis to be eligible for credit to meet the DBE contract goal.
 - c. If a DBE regular dealer is used for DBE contract goal credit, no additional credit will be given for hauling or delivery to the project site goods or materials sold by that DBE regular dealer. Those delivery costs shall be deemed included in the price charged for the goods or materials by the DBE regular dealer, who shall be responsible for their distribution.
 - d. For the purposes of this Special Provision, a manufacturer will be defined as a firm that operates or maintains a factory or establishment that produces on the premises the materials, supplies, articles, or equipment required under the Contract and of the general character described by the project specifications. A manufacturer shall include firms that produce finished goods or products from raw or unfinished material, or purchase and substantially alter goods and materials to make them suitable for construction use before reselling them.
 - e. A Contractor may count toward the DBE contract goal the following expenditures to DBE firms that are not regular dealers or manufacturers for DBE program purposes:
 - (1) The entire amount of fees or commissions charged by a DBE firm for providing a bona fide service, such as professional, technical, consultant or managerial services,

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or for providing bonds or insurance specifically required for the performance of the federal-aid contract, if the fee is reasonable and not excessive or greater than would normally be expected by industry standards for the same or similar services.

(2) The entire amount of that portion of the construction contract that is performed by the DBE's own forces and equipment under the DBE's supervision. This includes the cost of supplies and materials ordered and paid for by the DBE for contract work, including supplies purchased or equipment leased by the DBE, except supplies and equipment a DBE subcontractor purchases or leases from the prime Contractor or its affiliates.

f. A Contractor may count toward the DBE contract goal one hundred (100) percent of the fees paid to a DBE trucker or hauler for the delivery of material and supplies required on the project job site, but not for the cost of those materials or supplies themselves, provided that the trucking or hauling fee is determined by VDOT to be reasonable, as compared with fees customarily charged by non-DBE firms for similar services. A Contractor shall not count costs for the removal or relocation of excess material from or on the job site when the DBE trucking company is not the manufacturer of or a regular dealer in those materials and supplies. The DBE trucking firm shall also perform a Commercially Useful Function (CUF) on the project and not operate merely as a pass through for the purposes of gaining credit toward the DBE contract goal. Prior to submitting a bid, the Contractor shall determine, or contact the VDOT Civil Rights Division or its district Offices for assistance in determining, whether a DBE trucking firm will meet the criteria for performing a CUF on the project. See section on **Miscellaneous DBE Program Requirements; Factors used to Determine if a DBE Trucking Firm is Performing a CUF.**

g. The Contractor will receive DBE contract goal credit for the fees or commissions charged by and paid to a DBE broker who arranges or expedites sales, leases, or other project work or service arrangements provided that those fees are determined by VDOT to be reasonable and not excessive as compared with fees customarily charged by non-DBE firms for similar services. For the purposes of this Special Provision, a broker is defined as a person or firm that regularly engages in arranging for delivery of material, supplies, and equipment, or regularly arranges for the providing of project services as a course of routine business but does not own or operate the delivery equipment necessary to transport materials, supplies, or equipment to or from a job site.

(i) Performing a Commercially Useful Function (CUF)

No credit toward the DBE contract goal will be allowed for contract payments or expenditures to a DBE firm if that DBE firm does not perform a CUF on that contract. A DBE performs a CUF when the DBE is solely responsible for execution of a distinct element of the Contract work and the DBE actually performs, manages, and supervises the work involved with the firm's own forces or in accordance with the provisions of the **DBE Participation for Contract Goal Credit** section of this Special Provision. To perform a CUF the DBE alone shall be responsible and bear the risk for the material and supplies used on the Contract, selecting a supplier or dealer from those available, negotiating price, determining quality and quantity, ordering the material and supplies, installing those materials with the DBE's own forces and equipment, and paying for those materials and supplies. The amount the DBE firm is to be paid under the Contract shall be commensurate with the work the DBE actually performs and the DBE credit claimed for the DBE's performance.

Monitoring CUF Performance: It shall be the Contractor's responsibility to ensure that all DBE firms selected for subcontract work on the Contract, for which he seeks to claim credit toward the Contract goal, perform a CUF. Further, the Contractor is responsible for and shall ensure that

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each DBE firm fully performs the DBE's designated tasks with the DBE's own forces and equipment under the DBE's own direct supervision and management or in accordance with the provisions of the **DBE Participation for Contract Goal Credit** section of this Special Provision. For the purposes of this provision the DBE's equipment will mean either equipment directly owned by the DBE as evidenced by title, bill of sale or other such documentation, or leased by the DBE, and over which the DBE has control as evidenced by the leasing agreement from a firm not owned in whole or part by the prime Contractor or an affiliate of the Contractor under this contract.

VDOT will monitor the Contractor's DBE involvement during the performance of the Contract. However, VDOT is under no obligation to warn the Contractor that a DBE's participation will not count toward the goal.

DBEs Must Perform a Useful and Necessary Role in Contract Completion: A DBE does not perform a commercially useful function if the DBE's role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of DBE participation.

DBEs Must Perform The Contract Work With Their Own Workforces: If a DBE does not perform and exercise responsibility for at least thirty (30) percent of the total cost of the DBE's contract with the DBE's own work force, or the DBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involve, VDOT will presume that the DBE is not performing a CUF and such participation will not be counted toward the Contract goal.

VDOT Makes Final Determination On Whether a CUF Is Performed: VDOT has the final authority to determine whether a DBE firm has performed a CUF on a federal-aid contract. To determine whether a DBE is performing or has performed a CUF, VDOT will evaluate the amount of work subcontracted by that DBE firm or performed by other firms and the extent of the involvement of other firms' forces and equipment. Any DBE work performed by the Contractor or by employees or equipment of the Contractor shall be subject to disallowance under the DBE Program, unless the independent validity and need for such an arrangement and work is demonstrated.

(j) **Verification of DBE Participation and Imposed Damages**

Within fourteen days after contract execution, the Contractor shall submit to the Responsible Engineer, with a copy to the District Civil Rights Office (DCRO), a fully executed subcontract agreement for each DBE used to claim credit in accordance with the requirements stated on Form C-112. The subcontract agreement shall be executed by both parties stating the work to be performed, the details or specifics concerning such work, and the price which will be paid to the DBE subcontractor. Because of the commercial damage that the Contractor and its DBE subcontractor could suffer if their subcontract pricing, terms, and conditions were known to competitors, the Department staff will treat subcontract agreements as proprietary Contractor trade secrets with regard to Freedom of Information Act requests. In lieu of subcontract agreements, purchase orders may be submitted for haulers, suppliers, and manufacturers. These too, will be treated confidentially and protected. Such purchase orders must contain, as a minimum, the following information: authorized signatures of both parties; description of the scope of work to include contract item numbers, quantities, and prices; and required federal contract provisions.

The Contractor shall also furnish, and shall require each subcontractor to furnish, information relative to all DBE involvement on the project for each quarter during the life of the Contract in which participation occurs and verification is available. The information shall be indicated on Form C-63, DBE and SWAM Payment Compliance Report. The department reserves the right to

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request proof of payment via copies of cancelled checks with appropriate identifying notations. Failure to provide Form C-63 to the District Civil Rights Office (DCRO) within five (5) business days after the reporting period may result in delay of approval of the Contractor's monthly progress estimate for payment. The names and certification numbers of DBE firms provided by the Contractor on the various forms indicated in this Special Provision shall be exactly as shown on the DMBE's or MWAA's latest list of certified DBEs. Signatures on all forms indicated herein shall be those of authorized representatives of the Contractor as shown on the Prequalification Application, Form C-32 or the Prequalification/Certification Renewal Application, Form C-32A, or authorized by letter from the Contractor. If DBE firms are used which have not been previously documented with the Contractor's bid and for which the Contractor now desires to claim credit toward the project goal, the Contractor shall be responsible for submitting necessary documentation in accordance with the procedures stipulated in this Special Provision to cover such work prior to the DBE beginning work.

Form C-63 can be obtained from the VDOT website at: <http://vdotforms.vdot.virginia.gov/>

The Contractor shall submit to the Responsible Engineer its progress schedule with a copy to the DCRO, as required by Section 108.03 of the Specifications or other such specific contract scheduling specification that may include contractual milestones, i.e., monthly or VDOT requested updates. The Contractor shall include a narrative of applicable DBE activities relative to work activities of the Contractor's progress schedule, including the approximate start times and durations of all DBE participation to be claimed for credit that shall result in full achievement of the DBE goal required in the Contract.

On contracts awarded on the basis of good faith efforts, narratives or other agreeable format of schedule information requirements and subsequent progress determination shall be based on the commitment information shown on the latest Form C-111 as compared with the appropriate Form C-63.

Prior to beginning any major component or quarter of the work, as applicable, in which DBE work is to be performed, the Contractor shall furnish a revised Form C-111 showing the name(s) and certification number(s) of any current DBEs not previously submitted who will perform the work during that major component or quarter for which the Contractor seeks to claim credit toward the Contract DBE goal. The Contractor shall obtain the prior approval of the Department for any assistance it may provide to the DBE beyond its existing resources in executing its commitment to the work in accordance with the requirements listed in the **Good Faith Efforts Described** section of this Special Provision. If the Contractor is aware of any assistance beyond a DBE's existing resources that the Contractor, or another subcontractor, may be contemplating or may deem necessary and that have not been previously approved, the Contractor shall submit a new or revised narrative statement for VDOT's approval prior to assistance being rendered.

If the Contractor fails to comply with correctly completing and submitting any of the required documentation requested by this provision within the specified time frames, the Department will withhold payment of the monthly progress estimate until such time as the required submissions are received VDOT. Where such failures to provide required submittals or documentation are repeated the Department will move to enjoin the Contractor and any prime contractual affiliates, as in the case of a joint venture, from bidding as a prime Contractor, or participating as a subcontractor on VDOT projects until such submissions are received.

(k) Documentation Required for Semi-final Payment

On those projects nearing completion, the Contractor must submit Form C-63 marked "Semi-Final" within twenty (20) days after the submission of the last regular monthly progress estimate to the DCRO. The form must include each DBE used on the Contract work and the work performed by each DBE. The form shall include the actual dollar amount paid to each DBE for

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the accepted creditable work on the Contract. The form shall be certified under penalty of perjury, or other applicable law, to be accurate and complete. VDOT will use this certification and other information available to determine applicable DBE credit allowed to date by VDOT and the extent to which the DBEs were fully paid for that work. The Contractor shall acknowledge by the act of filing the form that the information is supplied to obtain payment regarding a federal participation contract. A letter of certification, signed by both the prime Contractor and appropriate DBEs, will accompany the form, indicating the amount, including any retainage, if present, that remains to be paid to the DBE(s).

(l) Documentation Required for Final Payment

On those projects that are complete, the Contractor shall submit a final Form C-63 marked "Final" to the DCRO, within thirty (30) days of the final estimate. The form must include each DBE used on the Contract and the work performed by each DBE. The form shall include the actual dollar amount paid to each DBE for the creditable work on the Contract. VDOT will use this form and other information available to determine if the Contractor and DBEs have satisfied the DBE contract goal percentage specified in the Contract and the extent to which credit was allowed. The Contractor shall acknowledge by the act of signing and filing the form that the information is supplied to obtain payment regarding a federal participation contract.

(m) Prompt Payment Requirements

The Contractor shall make prompt and full payment to the subcontractor(s) of any retainage held by the prime Contractor after the subcontractor's work is satisfactorily completed.

For purposes of this Special Provision, a subcontractor's work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished, documented, and accepted as required by the contract documents by VDOT. When VDOT has made partial acceptance of a portion of the prime contract, the Department will consider the work of any subcontractor covered by that partial acceptance to be satisfactorily completed. Payment will be made in accordance with the requirements of Section 107.01, Section 109.08, and Section 109.09 of the Specifications.

Upon VDOT's payment of the subcontractor's portion of the work as shown on the monthly progress estimate and the receipt of payment by the Contractor for such work, the Contractor shall make compensation in full to the subcontractor for that portion of the work satisfactorily completed and accepted by the Department. For the purposes of this Special Provision, payment of the subcontractor's portion of the work shall mean the Contractor has issued payment in full, less agreed upon retainage, if any, to the subcontractor for that portion of the subcontractor's work that VDOT paid to the Contractor on the monthly progress estimate.

The Contractor shall make payment of the subcontractor's portion of the work within seven (7) days of the receipt of payment from VDOT in accordance with the requirements of Section 107.01, Section 109.08, and Section 109.09 of the Specifications.

If the Contractor fails to make payment for the subcontractor's portion of the work within the time frame specified herein, the subcontractor shall contact the Responsible Engineer and the Contractor's bonding company in writing. The bonding company and VDOT will investigate the cause for non-payment and, barring mitigating circumstances that would make the subcontractor ineligible for payment, ensure payment in accordance with the requirements of Section 107.01, Section 109.08, and Section 109.09 of the Specifications.

By bidding on this contract, and by accepting and executing this contract, the Contractor agrees to assume these contractual obligations, and to bind the Contractor's subcontractors contractually to those prompt payment requirements.

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Nothing contained herein shall preclude the Contractor from withholding payment to the subcontractor in accordance with the terms of the subcontract in order to protect the Contractor from loss or cost of damage due to a breach of agreement by the subcontractor.

(n) **Miscellaneous DBE Program Requirements**

1. **Loss of DBE Eligibility:** When a DBE firm has been removed from eligibility as a certified DBE firm, the following actions will be taken:
 - a. When a Bidder/Contractor has made a commitment to use a DBE firm that is not currently certified, thereby making the Contractor ineligible to receive DBE participation credit for work performed, and a subcontract has not been executed, the ineligible DBE firm does not count toward either the Contract goal or overall goal. The Contractor shall meet the Contract goal with a DBE firm that is eligible to receive DBE credit for work performed, or must demonstrate to the Contract Engineer that it has made good faith efforts to do so.
 - b. When a Bidder/Contractor has executed a subcontract with a certified DBE firm prior to official notification of the DBE firm's loss of eligibility, the Contractor may continue to use the firm on the Contract and shall continue to receive DBE credit toward its DBE goal for the subcontractor's work.
 - c. When VDOT has executed a prime contract with a DBE firm that is certified at the time of contract execution but that is later ruled ineligible, the portion of the ineligible firm's performance on the Contract before VDOT has issued the notice of its ineligibility shall count toward the Contract goal.
2. **Termination of DBE:** If a certified DBE subcontractor is terminated, or fails, refuses, or is unable to complete the work on the Contract for any reason, the Contractor must promptly request approval to substitute or replace that firm in accordance with this section of this Special Provision.

The Contractor, as aforementioned in **DBE Program-Related Certifications Made by Bidders/Contractors**, shall notify VDOT in writing before terminating and/or replacing the DBE that was committed as a condition of contract award or that is otherwise being used or represented to fulfill DBE contract obligations during the Contract performance period. Written consent from the Department for terminating the performance of any DBE shall be granted only when the Contractor can demonstrate that the DBE is unable, unwilling, or ineligible to perform its obligations for which the Contractor sought credit toward the Contract DBE goal. Such written consent by the Department to terminate any DBE shall concurrently constitute written consent to substitute or replace the terminated DBE with another DBE. Consent to terminate a DBE shall not be based on the Contractor's ability to negotiate a more advantageous contract with another subcontractor whether that subcontractor is, or is not, a certified DBE.

- a. All Contractor requests to terminate, substitute, or replace a certified DBE shall be in writing, and shall include the following information:
 - (1) The date the Contractor determined the DBE to be unwilling, unable, or ineligible to perform.
 - (2) The projected date that the Contractor shall require a substitution or replacement DBE to commence work if consent is granted to the request.

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- (3) A brief statement of facts describing and citing specific actions or inaction by the DBE giving rise to the Contractor's assertion that the DBE is unwilling, unable, or ineligible to perform;
 - (4) A brief statement of the affected DBE's capacity and ability to perform the work as determined by the Contractor;
 - (5) A brief statement of facts regarding actions taken by the Contractor which are believed to constitute good faith efforts toward enabling the DBE to perform;
 - (6) The current percentage of work completed on each bid item by the DBE;
 - (7) The total dollar amount currently paid per bid item for work performed by the DBE;
 - (8) The total dollar amount per bid item remaining to be paid to the DBE for work completed, but for which the DBE has not received payment, and with which the Contractor has no dispute;
 - (9) The total dollar amount per bid item remaining to be paid to the DBE for work completed, but for which the DBE has not received payment, and over which the Contractor and/or the DBE have a dispute.
- b. Contractor's Written Notice to DBE of Pending Request to Terminate and Substitute with another DBE.

The Contractor shall send a copy of the "request to terminate and substitute" letter to the affected committed DBE firm, in conjunction with submitting the request to the DCRO. The affected DBE firm may submit a response letter to the Department within two (2) business days of receiving the notice to terminate from the Contractor. The affected DBE firm shall explain its position concerning performance on the committed work. The Department will consider both the Contractor's request and the DBE's response and explanation before approving the Contractor's termination and substitution request, or determining if any action should be taken against the Contractor.

If, after making its best efforts to deliver a copy of the "request to terminate and substitute" letter, the Contractor is unsuccessful in notifying the affected DBE firm, the Department will verify that the affected, committed DBE firm is unable or unwilling to continue the Contract. The Department will immediately approve the Contractor's request for a substitution.

- c. Proposed Substitution of Another Certified DBE

Upon termination of a DBE, the Contractor shall use reasonable good faith efforts to replace the terminated DBE. The termination of such DBE shall not relieve the Contractor of its obligations pursuant to this section, and the unpaid portion of the terminated DBE's contract will not be counted toward the Contract goal.

When a DBE substitution is necessary, the Contractor shall submit an amended Form C-111 with the name of another DBE firm, the proposed work to be performed by that firm, and the dollar amount of the work to replace the unfulfilled portion of the work of the originally committed DBE firm. The Contractor shall furnish all pertinent information including the Contract I.D. number, project number, bid item, item description, bid unit and bid quantity, unit price, and total price. In addition, the Contractor shall submit documentation for the requested substitute DBE as described in this section of this Special Provision.

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Should the Contractor be unable to commit the remaining required dollar value to the substitute DBE, the Contractor shall provide written evidence of good faith efforts made to obtain the substitute value requirement. The Department will review the quality, thoroughness, and intensity of those efforts. Efforts that are viewed by VDOT as merely superficial or pro-forma will not be considered good faith efforts to meet the Contract goal for DBE participation. The Contractor must document the steps taken that demonstrated its good faith efforts to obtain participation as set forth in the **Good Faith Efforts Described** section of this Special Provision.

3. Factors Used to determine if a DBE Trucking Firm is performing a CUF:

The following factors will be used to determine whether a DBE trucking company is performing a CUF:

- a. To perform a CUF the DBE trucking firm shall be completely responsible for the management and supervision of the entire trucking operation for which the DBE is responsible by subcontract on a particular contract. There shall not be a contrived arrangement, including, but not limited to, any arrangement that would not customarily and legally exist under regular construction project subcontracting practices for the purpose of meeting the DBE contract goal;
- b. The DBE must own and operate at least one fully licensed, insured, and operational truck used in the performance of the Contract work. This does not include a supervisor's pickup truck or a similar vehicle that is not suitable for and customarily used in hauling the necessary materials or supplies;
- c. The DBE receives full contract goal credit for the total reasonable amount the DBE is paid for the transportation services provided on the Contract using trucks the DBE owns, insures, and operates using drivers that the DBE employs and manages;
- d. The DBE may lease trucks from another certified DBE firm, including from an owner-operator who is certified as a DBE. The DBE firm that leases trucks from another DBE will receive credit for the total fair market value actually paid for transportation services the lessee DBE firm provides on the Contract;
- e. The DBE may also lease trucks from a non-DBE firm, including an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit for the total value of the transportation services provided by non-DBE lessees, *not to exceed the value of transportation services provided by DBE-owned trucks on the Contract*. For additional participation by non-DBE lessees, the DBE will only receive credit for the fee or commission it receives as a result of the lease arrangement.

EXAMPLE

DBE Firm X uses two (2) of its own trucks on a contract. The firm leases two (2) trucks from DBE Firm Y and six (6) trucks from non-DBE Firm Z.

| <u>Firm X</u> | | Value of Trans. Serv. |
|----------------------|--------------|----------------------------------|
| | | (For Illustrative Purposes Only) |
| Truck 1 | Owned by DBE | \$100 per day |
| Truck 2 | Owned by DBE | \$100 per day |

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Firm Y

| | | |
|---------|-----------------|---------------|
| Truck 1 | Leased from DBE | \$110 per day |
| Truck 2 | Leased from DBE | \$110 per day |

Firm Z

| | | |
|---------|----------------------|---------------|
| Truck 1 | Leased from Non DBE | \$125 per day |
| Truck 2 | Leased from Non DBE | \$125 per day |
| Truck 3 | Leased from Non DBE | \$125 per day |
| Truck 4 | Leased from Non DBE | \$125 per day |
| <hr/> | | |
| Truck 5 | Leased from Non DBE* | \$125 per day |
| Truck 6 | Leased from Non DBE* | \$125 per day |

DBE credit would be awarded for the total transportation services provided by DBE Firm X and DBE Firm Y, and may also be awarded for the total value of transportation services by four (4) of the six (6) trucks provided by non-DBE Firm Z (not to exceed the value of transportation services provided by DBE-owned trucks).

Credit = 8 Trucks
Total Value of Transportation Services = \$820

In all, full DBE credit would be allowed for the participation of eight (8) trucks (twice the number of DBE trucks owned and leased) and the dollar value attributable to the Value of Transportation Services provided by the 8 trucks.

* With respect to the other two trucks provided by non-DBE Firm Z, DBE credit could be awarded only for the fees or commissions pertaining to those trucks that DBE Firm X receives as a result of the lease with non-DBE Firm Z.

- f. For purposes of this section, the lease must indicate that the DBE firm leasing the truck has exclusive use of and control over the truck. This will not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, provided the lease gives the DBE absolute priority for and control over the use of the leased truck. Leased trucks must display the name and identification number of the DBE firm that has leased the truck at all times during the life of the lease.
4. **Data Collection:** In accordance with 49CFR Section 26.11, all firms bidding on prime contracts and bidding or quoting subcontracts on federal-aid projects shall provide the following information to the Contract Engineer annually.
- Firm name
 - Firm address
 - Firm's status as a DBE or non-DBE
 - The age of the firm and

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- The annual gross receipts of the firm

The means of transmittal and the risk for timely receipt of this information shall be the responsibility of the bidder. However, the above information can be submitted by means of the Annual Gross Receipts Survey as required in the Prequalification/Certification application.

All bidders, including DBE prime Contractor bidders, shall complete and submit to the Contract Engineer the Subcontractor/Supplier Solicitation and Utilization Form C-48 for each bid submitted; to be received within ten (10) business days after the bid opening. Failure of bidders to submit this form in the time frame specified may be cause for disqualification of the bidder and rejection of their bid in accordance with the requirements of this Special Provision, the Contract specifications, and VDOT Road and Bridge specifications.

(o) Suspect Evidence of Criminal Behavior

Failure of a bidder, Contractor, or subcontractor to comply with the Virginia Department of Transportation Road and Bridge Specifications and these Special Provisions wherein there appears to be evidence of criminal conduct shall be referred to the Attorney General for the Commonwealth of Virginia and/or the FHWA Inspector General for criminal investigation and, if warranted, prosecution.

Suspected DBE Fraud

In appropriate cases, VDOT will bring to the attention of the U. S. Department of Transportation (USDOT) any appearance of false, fraudulent, or dishonest conduct in connection with the DBE program, so that USDOT can take the steps, e.g., referral to the Department of Justice for criminal prosecution, referral to the USDOT Inspector General, action under suspension and debarment or Program Fraud and Civil Penalties rules provided in 49CFR Part 31.

(p) Summary of Remedies for Non-Compliance with DBE Program Requirements

Failure of any bidder\Contractor to comply with the requirements of this Special Provision for Section 107.15 of the Virginia Road and Bridge Specifications, which is deemed to be a condition of bidding, or where a contract exists, is deemed to constitute a breach of contract shall be remedied in accordance with the following:

1. Disadvantaged Business Enterprise (DBE) Program Requirements

The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award, administration, and performance of this contract. Failure by the Contractor to carry out these requirements is a material breach of this contract, which will result in the termination of this contract or other such remedy, as VDOT deems appropriate.

All administrative remedies noted in this provision are automatic unless the Contractor exercises the right of appeal within the required timeframe(s) specified herein.

2. DBE Program-Related Certifications Made by Bidders\Contractors

Once awarded the contract, the Contractor shall comply fully with all regulatory and contractual requirements of the USDOT DBE Program, and that each certified DBE firm participating in the Contract shall fully perform the designated work items with the DBE's own forces and equipment under the DBE's direct supervision, control, and management. Where a contract exists and where the Contractor, DBE firm, or any other firm retained by the Contractor has failed to comply with federal or VDOT DBE Program regulations and/or their requirements on that contract, VDOT has the authority and discretion to determine the extent

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to which the DBE contract requirements have not been met, and will assess against the Contractor any remedies available at law or provided in the Contract in the event of such a contract breach.

3. Disqualification of Bidder

Bidders may be disqualified from bidding for failure to comply with the requirements of this Special Provision, the Contract specifications, and VDOT Road and Bridge Specifications.

4. Bidding Procedures

The failure of a bidder to submit the required documentation within the timeframes specified in the **Contract Goal, Good Faith Efforts Specified** section of this Special Provision may be cause for rejection of that bidder's bid. If the lowest bidder is rejected for failure to submit required documentation in the specified time frames, the Department may either award the work to the next lowest bidder, or re-advertise and construct the work under contract or otherwise as determined by the Commonwealth.

In order to award a contract to a bidder that has failed to meet DBE contract goal requirements, VDOT will determine if the bidder's efforts were adequate good faith efforts, and if given all relevant circumstances, those efforts were to the extent a bidder actively and aggressively seeking to meet the requirements would make. Regardless of the DBE contract goal participation level proposed by the bidder or the extent of good faith efforts shown, all bidders shall timely and separately file their completed and executed Forms C-111, C-112, C-48, and Form C-49, as aforementioned, or face potential bid rejection. If a bidder does not submit its completed and executed C-111, or C-112, when required by this Special Provision, the bidder's bid will be considered non-responsive and may be rejected. If, after reconsideration, the Department determines the bidder has failed to meet the requirements of the Contract goal and has failed to make adequate good faith efforts to achieve the level of DBE participation as specified in the bid proposal, the bidder's bid will be rejected. If sufficient documented evidence is presented to demonstrate that the apparent low bidder made reasonable good faith efforts, the Department will award the Contract and reduce the DBE requirement to the actual commitment identified by the lowest successful bidder at the time of its bid. The Contractor is encouraged to seek additional participation during the life of the Contract.

If the Contractor fails to conform to the schedule of DBE participation as shown on the progress schedule, or at any point at which it is clearly evident that the remaining dollar value of allowable credit for performing work is insufficient to obtain the scheduled participation, the Contractor and any aforementioned affiliates may be enjoined from bidding for 60 days or until such time as conformance with the schedule of DBE participation is achieved. In such instances, the Contractor is expected to seek DBE participation towards meeting the goal during the prosecution of the Contract.

If the Contractor fails upon completion of the project to meet the required participation, the Contractor and any prime contractual affiliates, as in the case of a joint venture, may be enjoined from bidding as a prime Contractor, or participating as a subcontractor on VDOT projects for a period of 90 days.

Prior to enjoinder from bidding or denial to participate as a subcontractor for failure to comply with participation requirements, as provided hereinbefore, the Contractor may submit documentation to the State Construction Engineer to substantiate that failure was due solely to quantitative underrun(s) or elimination of items subcontracted to DBEs, and that all feasible means have been used to obtain the required participation. The State Construction Engineer

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upon verification of such documentation shall make a determination whether or not the Contractor has met the requirements of the Contract.

If it is determined that the aforementioned documentation is insufficient or the failure to meet required participation is due to other reasons, the Contractor may request an appearance before the Administrative Reconsideration Panel to establish that all feasible means were used to meet such participation requirements. The decision of the Administrative Reconsideration Panel shall be administratively final. The injunction period will begin upon the Contractor's failure to request a hearing within the designated time frame or upon the Administrative Reconsideration Panel's decision to enjoin, as applicable.

5. Verification of DBE Participation and Imposed Damages

If the Contractor fails to comply with correctly completing and submitting any of the required documentation requested by this provision within the specified time frames, the Department will withhold payment of the monthly progress estimate until such time as the required submissions are received by VDOT. Where such failures to provide required submittals or documentation are repeated the Department will move to enjoin the Contractor and any prime contractual affiliates, as in the case of a joint venture, from bidding as a prime Contractor, or participating as a subcontractor on VDOT projects until such submissions are received.

(q) Suspect Evidence of Criminal Behavior

In addition to the remedies described heretofore in this provision VDOT also exercises its rights with respect to the following remedies:

- Failure of a bidder, Contractor, or subcontractor to comply with the Virginia Department of Transportation Road and Bridge Specifications and these Special Provisions wherein there appears to be evidence of criminal conduct shall be referred to the Attorney General for the Commonwealth of Virginia and/or the FHWA Inspector General for criminal investigation and, if warranted prosecution.
- In appropriate cases, VDOT will bring to the attention of the U. S. Department of Transportation (USDOT) any appearance of false, fraudulent, or dishonest conduct in connection with the DBE program, so that USDOT can take the steps, e.g., referral to the Department of Justice for criminal prosecution, referral to the USDOT Inspector General, action under suspension and debarment or Program Fraud and Civil Penalties rules provided in 49CFR Part 31.

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SP107-003000-01

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
BUILD AMERICA, BUY AMERICA ACT REQUIREMENTS FOR CONSTRUCTION MATERIALS

June 8, 2023

SECTION 107.03 FEDERAL AID PROVISIONS of the Specifications is amended to include the following:

In accordance with the provisions of the Build America, Buy America Act (BABA), Public Law, No. 117-58, §§ 70901-70953, and any implementing regulations or policies (hereinafter referred to together as “BABA Requirements”): except as otherwise specified, all construction materials that are to be permanently incorporated for use on federal aid projects (hereinafter be referred to as “BABA Construction Materials”) shall be manufactured in the United States of America. Note that the provisions herein do not apply to iron and steel, which are addressed in another provision of the Contract.

BABA Construction Materials. Manufactured in the United States of America means that at least the final manufacturing process and the immediately preceding manufacturing stage for the construction materials, and any other stages in the manufacturing process that are specified in the BABA Requirements or FHWA guidance, all occurred in the United States.

BABA Construction Materials, as defined and designated in the BABA Requirements, include any article, material, or supply that is or consists primarily of:

- Non-ferrous metals;
- Plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables);
- Glass (including fiber optic glass);
- Lumber; or
- Drywall.

Any items that consist of at least one of the listed BABA Construction Materials combined together through a manufacturing process with another listed BABA Construction Material or with a non-listed item are considered to be “Manufactured Products” under BABA, not BABA Construction Materials. Therefore, the BABA requirements for “Manufactured Products” and FHWA guidance would apply.

The BABA Construction Materials requirements do not apply to: cement and cementitious materials; aggregates such as stone, sand, or gravel; aggregate binding agents (including asphalt cement) or additives; or any material composed of or derived from these items.

Waivers:

The process for receiving a waiver of BABA requirements for construction materials is provided at BABA § 70914(b) through (d), and any federal regulations adopted in accordance with this law. Other than any FHWA or other Federal agency waivers of general applicability that may be in effect, the Contractor shall not anticipate that any BABA provisions will be waived.

Certification of Compliance:

The Contractor is required to submit a Certificate of Compliance prior to incorporating any items into the project containing any of the above-listed BABA Construction Materials. This shall be

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accomplished by the Contractor submitting the appropriate Form C-76A Certificate of Compliance to the Department when the items are delivered to the project site. The Certificate of Compliance will certify that the final manufacturing process and the immediately preceding manufacturing stage for the construction materials occurred in the United States. The certificate must be signed and dated by the Prime Contractor's Superintendent and include a BABA Requirements Submittal Number, which is simply the Contractor's project specific sequential numbering system that will allow the Contractor and Department to track the total number of certificates provided and the individual construction materials associated with each certificate.

Supporting Documentation:

Supporting documentation to demonstrate compliance with BABA provisions (such as manufacturer/supplier certifications, etc.) shall be organized by BABA Requirements Submittal Number, and shall be maintained by the Contractor and available for examination from the date of delivery until three years after project acceptance. The Contractor may maintain this documentation electronically or in paper format.

The Department or FHWA may review the Contractor's supporting documentation to verify compliance with the BABA Requirements for construction materials at any time upon request. Supporting documentation shall be provided within five business days of the request. The burden of proof to meet the BABA Requirements for construction materials rests with the Contractor. If the supporting documentation does not undeniably demonstrate to FHWA or the Department that the BABA Construction Materials identified in the Certificate of Compliance were produced in the United States, then such construction materials will be considered unacceptable and must be replaced at no cost to the Department, and if not replaced the Department, in addition to other rights and remedies, may have them replaced and deduct the cost of removal and replacement from any moneys due or that become due the Contractor in accordance with Section 106.10 of the Specifications.

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
PROGRESS SCHEDULES FOR CATEGORY II PROJECTS

March 21, 2022

Section 103.06(e) Progress Schedule of the Specifications is deleted and replaced by this provision.

Section 108.03 Progress Schedule of the Specifications is deleted and replaced by this provision.

I. General Requirements

The Contractor shall develop and maintain a Progress Schedule for the entire duration of the Project, which shall be used by all involved parties to plan and execute all work required to complete the Project. The Progress Schedule will be used by the Department to monitor the project, assess progress, and evaluate the effects of time-related issues on the project. Unless specifically stated otherwise, 'days' shall be understood as calendar days.

At the Pre-Construction Conference, in accordance with Section 105.02 or as mutually agreed upon by the Engineer and the Contractor, the Contractor shall attend a Scheduling Conference with the Engineer to discuss the Contractor's overall plan to accomplish the Work. The Contractor shall also discuss its detail work plan for the initial ninety (90) days; as well as project specific requirements and other key issues that are expected to impact the Progress Schedule or are necessary for the preparation, maintenance, and submittal of the Progress Schedule.

II. Progress Schedule Submissions

Unless otherwise directed in writing by the Engineer, the Contractor shall prepare, maintain, and submit a Progress Schedule in accordance with the following requirements:

1. Preliminary Progress Schedule

Within fifteen (15) days of the Contract execution date or within seven (7) days prior to beginning work, whichever occurs first, the Contractor shall submit to the Engineer for review and acceptance a Preliminary Progress Schedule. At its discretion, the Contractor may submit a complete detailed Baseline Progress Schedule for the entire project in lieu of the Preliminary Progress Schedule. Until the Baseline Progress Schedule is accepted by the Engineer, the Contractor shall update and submit the Preliminary Progress Schedule monthly, within seven (7) days of the estimate date or as approved by the Engineer. The Preliminary Progress Schedule will be used by the Department to monitor the Project and assess progress. The Preliminary Progress Schedule submission shall consist of the following:

- A. Preliminary Schedule** – A logic driven Preliminary Schedule, which shall include at a minimum the detailed activities depicting the planned sequence and dates for all work planned during the first ninety (90) days, including as applicable project milestones, work to be performed by sub-contractors, the Department, and third parties. It shall also include summary-level activities for each element of work scheduled beyond the first ninety (90) days. The initial Preliminary Schedule shall be prepared and submitted in the form of a Baseline Schedule as defined herein. Upon acceptance, the Preliminary Schedule shall be updated monthly to show the actual progress of work completed to date and the current plan for accomplishing the remaining work as of the estimate date. The updated Preliminary Schedule shall be prepared and submitted in the form of an Update Schedule as defined herein.

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- B. **Preliminary Schedule Narrative** – A Preliminary Schedule Narrative describing the Contractor’s overall plan to accomplish the entire scope of Work and the detailed plan for work planned during the initial ninety (90) days. The Preliminary Schedule Narrative shall be prepared and submitted in the form of a Baseline Schedule Narrative as defined herein. Upon acceptance, the Preliminary Schedule Narrative shall be updated monthly to reflect the actual progress of work completed to date and the current plan for accomplishing the remaining work as of the Data Date; as well as any deviations from the original plan. It shall be prepared and submitted in the form of an Update Schedule Narrative as defined herein.

2. Baseline Progress Schedule

Within thirty (30) days of the Contract execution date, the Contractor shall submit to the Engineer for review and acceptance, a Baseline Progress Schedule representing the Contractor’s original complete detailed plan to accomplish the entire scope of the Project according to the Contract. Upon acceptance by the Engineer, the Baseline Progress Schedule shall replace the Preliminary Progress Schedule and shall become the Schedule of Record (SOR). The Baseline Progress Schedule submission shall consist of:

- A. **Baseline Schedule** – A logic driven Baseline Schedule depicting all detailed activities required to complete the entire scope of the Project, including as applicable, work to be performed by subcontractors, the Department, and other involved parties. The Baseline Schedule shall incorporate the latest accepted Preliminary Schedule, and shall be prepared and submitted according to the following requirements:

- (1) Software: The Baseline Schedule shall be prepared using Primavera P6 scheduling software and submitted in the “.xer” file format.
- (2) Project ID and Name: The Project ID and Name for each submission shall be unique and defined as follows:
 - (a) The Project ID shall be defined using the Contract ID as a prefix followed by a short ID indicating the specific version of the schedule (e.g., PS01, BS, BSR1). For example, Preliminary Schedule (C000XXXXXXXX_PS01, C000XXXXXXXX_PS02, etc.), Baseline Schedule (C000XXXXXXXX_BS, C000XXXXXXXX_BSR1, etc.).
 - (b) The Project Name shall reflect the Project Description as shown in the Contract, appended to indicate the specific version of the schedule (e.g., Route 10 Over I-95 Bridge Replacement Baseline Schedule).
- (3) Software Settings: The Contractor shall specify the software properties and settings as follows:
 - (a) Specify “Active” as the Project Status in the Project Details General tab.
 - (b) Specify the Must Finish By date in the Project Details Dates tab using a date matching the Completion Date as defined in the Contract or as subsequently adjusted by Change Order.
 - (c) Specify “Fixed Duration & Units” as the Duration Type for all activities.
 - (d) Specify “Physical” as the Percent Complete Type for all activities.
 - (e) Specify “Reset Remaining Duration and Units to Original” in the Project Details Calculation tab.

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- (f) Activity Unit of Time Duration Format shall be set to “Day”, with no decimals.
 - (g) Activity Date Format shall be set to “MM-DD-YY” (e.g., 12-01-21) format for displaying activity dates.
- (4) Work Breakdown Structure (WBS): The Baseline Schedule shall be organized using a logical Project Work Breakdown Structure (WBS). The Work shall be broken down to an appropriate level of WBS nodes and sub-nodes to allow for a hierarchical grouping and summarization of related activities required to complete each phase, feature, deliverable, or work package, as appropriate. Each WBS element shall be defined using a short alpha-numeric WBS Code and a WBS Name describing the WBS element. At a minimum, the WBS shall include as applicable:
- (a) Level 1: “Milestones” node for all Contract and other key milestones; “Preliminary” node for all pre-construction activities; and “Construction” node for all construction activities.
 - (b) Level 2: Under the “Preliminary” node, Level 2 “Submittals”, “VDOT Review”, “Materials” sub-nodes for all initial activities such as submittals, VDOT reviews, long lead materials, etc. Under the “Construction” node, Level 2 “General/Start-up”, “Phase” or “Feature of Work”, and “Close-out” sub-nodes, as applicable.
 - (c) Level 3: Under the “Phase” or “Feature of Work” node, Level 3 sub-nodes for “Sub-features” or “Location” for all associated construction activities, as applicable.
- (5) Level of Details: The Baseline Schedule shall include sufficient activities to ensure adequate planning of the Project and to allow for accurate monitoring and evaluation of progress. The Work shall be broken down into discrete activities to an appropriate level of detail to allow for:
- (a) Identification of work by the responsible party; as well as the type, amount, and specific location of work the activity represents.
 - (b) Identification of work required to ensure timely completion of all Contract milestones and time-related requirements
 - (c) Accurate documentation of actual performance and progress of Work.
 - (d) Accurate evaluation of the effect of changes and delays to the Work.
 - (e) Accurate assessment of resource requirements of the Contractor and the Department.
 - (f) Coordinate the Work of the Department, other contractors, and third parties (e.g., government agencies and authorities, permitting authorities).
- (6) Activity Definition: Activities shall be discrete and shall be defined as follows:
- (a) Each activity shall be defined using a unique Activity ID which shall remain unchanged throughout the duration of the Project. If an activity is deleted in a subsequent submission, the corresponding Activity ID shall not be used for any other activity.
 - (b) Each activity shall be defined using an Activity Name to indicate the type of work, phase (or stage), and specific location in which the work occurs, as applicable (e.g.,

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Drive Steel Piles - Phase 1 - Abut A). For each 'Level of Effort' activity, the Activity Name shall include "(LOE)". Also, for work to be performed by the Department or other contractors, and third parties, the Activity Name shall include "VDOT" or the name of the corresponding responsible party.

- (c) Activity durations shall be defined in whole days based on the assigned calendar. For activities such as "Concrete Cure Time", that are not restricted by a standard working calendar, activity durations shall be expressed in terms of calendar days. Activity durations shall be limited to twenty (20) work days, unless otherwise accepted by the Engineer. Longer durations may be allowed as approved by the Engineer for certain administrative, level of effort, or procurement activities that are typically performed over longer periods of time.
- (7) Calendars: Each activity shall be assigned an appropriate calendar to establish the planned work days per week; and any non-work days for holidays, weather days, or other restrictions, as applicable. Once the Baseline Schedule is accepted, any changes to calendars shall be identified and explained in the accompanying Schedule Narrative. At a minimum, the Project calendars shall be defined and assigned as follows:
- (a) Activity calendars shall be defined and assigned using Project-level calendars. Use of global calendars or project calendars with links to the global base calendars is not allowed and shall be cause for rejecting the schedule.
 - (b) A "7-Day Calendar" (i.e., 7 days per week with no Holidays) shall be defined and assigned to all activities that are not restricted by weekends, holidays, or other non-work days.
 - (c) A "5-Day Standard Calendar" (i.e., 5 days per week with Holidays) shall be defined and assigned to all regular activities that are not restricted by weather or other time of year or seasonal restrictions.
 - (d) A "5-Day Weather Calendar" (i.e., 5 days per week with Holidays and weather days) shall be defined and assigned to all activities that are affected by weather.
 - (e) A "5-Day Winter Calendar" (i.e., 5 days per week with Holidays, weather days, and winter period, as applicable) shall be defined and assigned to all activities that are affected by winter weather restrictions.
 - (f) A "5-Day TOYR Calendar" (i.e., 5 days per week with Holidays, weather days, and TOYR, as applicable) shall be defined and assigned to all activities that are affected by specified time of year restrictions (TOYR).
 - (g) Regardless of the actual or planned working hours per day, all calendars shall be based on a standard 8 work hours/day, with the same daily start and finish times.
- (8) Activity Codes: Activity codes shall be defined and assigned to the individual activities to allow for filtering, grouping, and sorting of activities by Responsibility, Phase, Stage, Feature, Work Type, Location, SIA, Change Order, DBE, and other major work categories, as applicable. Activity codes shall be assigned using Project-level activity codes. Use of global activity codes is not allowed and shall be cause for rejecting the schedule.
- (9) Network Logic: The Baseline Schedule shall be calculated using the Critical Path Method (CPM). Logic relationships shall be assigned based on the Precedence Diagram Method (PDM) to establish relationships between the activities and the sequence in which the

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Contractor plans to accomplish the Work. Logic relationships shall be assigned as follows:

- (a) Activity relationship types shall be limited to finish-to-start (FS), start-to-start (SS), and finish-to-finish (FF).
 - (b) All activities, except the first activity shall be assigned at least one predecessor relationship and all activities, except the last activity shall be assigned at least one successor relationship.
 - (c) If an activity is assigned as a predecessor with a start-to-start (SS) relationship, then the activity must also be assigned as a predecessor to another related activity with a finish-to-start (FS) or finish-to-finish (FF) relationship, as applicable.
 - (d) The Contractor shall avoid the use of redundant logic relationships when possible. The Contractor shall provide an explanation of the reason for redundant logic upon the request of the Engineer.
 - (e) The use of lag shall be prohibited unless approved by the Engineer. The Contractor shall remove any lag and replace with an activity upon the request of the Engineer. When lags are used, the Contractor shall provide an explanation for use of the lags in the Schedule Narrative.
- (10) Constraints: Use of Constraints shall be limited to milestones specified in the Contract, unless approved by the Engineer. Constraints shall be applied as follows:
- (a) For Contracts that include a specified milestone that restricts the start date of an activity, the activity shall be constrained with a "Start On or Before" or "Start On or After" constraint, as applicable, with the date specified in the Contract.
 - (b) For Contracts that include a specified milestone that establishes a completion date deadline such as Interim Completion or Substantial Completion, the Contract milestone activity shall be constrained with a "Finish On or Before" constraint, with the date specified in the Contract.
 - (c) Constraints such as "Start On" or "Finish On" that delays the start or finish date of an activity to the specified date as allowed by network logic, or "Mandatory Start" or "Mandatory Finish" that violate network logic are prohibited.
- (11) Primavera P6 Software Schedule Options Settings: The Contractor shall calculate the Project Schedule (i.e., F9 in P6) to ensure all changes have been incorporated before submission to the Engineer. The Contractor shall apply the following Primavera P6 software Schedule Options settings when scheduling the Project Schedule:
- (a) Unmark the 'Make open-ended activities critical' checkbox.
 - (b) Unmark the 'Use Expected Finish Dates' checkbox. Expected finish dates are prohibited.
 - (c) Unmark the 'Level resources during scheduling' checkbox. The use of resource-leveling to determine sequence, order, or timing of the activities is not allowed and shall be cause for rejecting the schedule.
 - (d) Specify 'Retained Logic' for scheduling progressed activities.
 - (e) Specify 'Longest Path' to define critical activities.

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- (f) Specify 'Finish Float = Late Finish – Early Finish' to compute Total Float.
- (g) Specify 'Predecessor Activity Calendar' as the calendar for scheduling relationship lags.

(12) Progress As-built Information: The Baseline Schedule shall reflect the current status of the Project and all known information at the time of submission. The Baseline Schedule shall include any progress as-built information showing actual dates for all completed and on-going activities, as of the Data Date, as applicable. The Baseline Schedule shall be calculated using a Data Date as follows:

- (a) If the Baseline Schedule includes progress as-built information, then the Data Date shall be within three (3) days of the date of submission.
- (b) If the Baseline Schedule does not include progress as-built information, then the Data Date shall be the Contract execution date or the planned start date of the first activity, whichever is earlier.

B. Baseline Schedule Narrative – A Baseline Schedule Narrative describing the Contractor's overall plan to accomplish the Work. The Baseline Schedule Narrative shall be the basis for the Baseline Schedule and shall provide the following supporting information, as applicable:

- (1) Milestones: Current status of the Project milestones including, as applicable Contract milestones and other key events such as major traffic switches.
- (2) Work By Others: Work to be performed by the Department and other involved parties (e.g., utilities), including activities requiring coordination; and a description of when the work must be performed to avoid impacts to the Work.
- (3) Overall Sequence of Work: Explanation of the proposed overall sequence of Work, including where the Work will begin and how the Work and crews will flow through the Project.
- (4) Project Critical Path: Description of the project critical path indicating the series of operations that are expected to drive the completion date of the project. A listing of the Project Schedule critical path activities will not be accepted as a substitute.
- (5) Scheduling Assumptions: Scheduling assumptions including, the general procedures and anticipated daily production rates for accomplishing major operations that are expected to drive the schedule.
- (6) Lags: Identification of all logic relationships with Lag and an explanation of the reason for each Lag.
- (7) Constraints: Identification of all schedule Constraints used in the Baseline Schedule and an explanation of the reason for each Constraint.
- (8) Calendars: Description of the project calendar(s) used in the Baseline Schedule, identifying the Calendar and the proposed number of work days per week, number of shifts per day, and number of hours per day. Also, the anticipated number of non-working days per month shall be identified for each calendar with considerations, as applicable, for holidays, normal adverse weather conditions; as well as seasonal or other known or specified restrictions (i.e. traffic, local events, environmental, permits, utility, etc.).

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- (9) Resource Plan: The Contractor's resource plan indicating the number and type of crews, crew make-up, and major equipment needed to accomplish the Work as planned. The resource plan shall also explain how the Contractor plans on meeting the resource requirements as reflected on the Baseline Schedule.
- (10) DBE Participation: Log of the applicable DBE participation activities in the schedule and the DBE firms performing the work for which the Contractor intends to claim credit for attaining the DBE goal required in the Contract. The list shall indicate the start/finish dates and durations of the DBE participation activities.
- (11) Issues and Concerns: Any known or foreseeable issues or concerns that are currently affecting or anticipated to affect the schedule. Also, describe how the issues will affect the schedule and any actions taken or needed to avoid or mitigate the impact.

C. Baseline Progress Earnings Schedule – A Baseline Progress Earnings Schedule showing the anticipated monthly earnings for the entire Project. The Baseline Progress Earnings Schedule submission shall be prepared using the VDOT Form C-13C as follows:

- (1) The Breakdown of Contract Items form shall be completed to show the bid items and costs associated with each Major Work Category.
- (2) The C-13C (Baseline) form shall be completed to show all required information and the monthly anticipated earnings for each Major Work Category.
- (3) The C-13C (Update) form shall be completed to show the current Projected Completion Date, Current Estimate Date, and actual monthly earnings, and anticipated earnings for each Major Work Category as of the Current Estimate Date.
- (4) The Controls Chart Data form shall be completed to show the Actual Monthly Earnings for each estimate date, as of the Current Estimate Date.

3. Update Progress Schedule

After the Baseline Progress Schedule is accepted, on a monthly basis thereafter, and within seven (7) days after the estimate date, the Contractor shall submit an Update Progress Schedule submission to the Engineer for review and acceptance. The Update Progress Schedule submission shall represent the current status of the Project and the Contractor's current plan to complete the remaining Work. The Update Progress Schedule submission shall consist of:

A. Update Schedule – An Update Schedule, which shall be based on a copy of the most recent accepted Project Schedule and shall be prepared according to the following:

- (1) The Project ID and Name for each submission shall be unique and defined as follows:
 - (a) The Project ID shall be updated to indicate the specific Update Schedule version (e.g., C000XXXXXXXX_U01, C000XXXXXXXX_U01R1, C000XXXXXXXX_U02).
 - (b) The Project Name shall be updated to indicate the specific version of the schedule (e.g., Route 10 Over I-95 Bridge Replacement Update Schedule #1).
- (2) All activities completed prior to the Data Date shall be updated to show actual start and actual finish dates. And all on-going activities shall be updated to show actual start dates and remaining duration to indicate the amount of time required to complete the remaining work as of the Data Date. Actual dates on or after the Data Date are prohibited.

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- (3) Activity percent complete for on-going activities shall be based on cost of work completed as of the Data Date relative to the total cost of work planned.
 - (4) All schedule related changes requested or approved by the Engineer shall be incorporated into the Update Schedule, including as applicable, added or deleted work, changes to Contract Milestones, changes in sequence of work, changes in duration, changes to Contract Amount, and other time-related changes.
 - (5) Activity logic shall be modified as necessary to correct out-of-sequence progress for on-going and remaining activities to reflect the Contractor's current plan for completing the remaining Work.
 - (6) The Update Schedule shall be calculated using a Data Date of either the 4th, 11th, or 20th of the month, based on the Contractor's estimate date as defined in Section 109.08(a) – Partial Payments, of the Specifications.
- B. Update Schedule Narrative** – An Update Schedule Narrative describing the current status of the project, deviations from scheduled performance, and changes in Contractor's work plan, and the current work plan for accomplishing the remaining work as of the Data Date. The Schedule Update Narrative shall include a description of:
- (1) Milestones: The current status of scheduled Milestone dates, including a description of any deviations from the last accepted Project Schedule and the Contract. The Contractor shall provide an explanation for any Milestone that is scheduled to occur later than the date specified in the Contract and any actions taken or proposed to correct the delay.
 - (2) Progress % Complete: The current status of the Project in terms of earnings relative to the SOR, based on the Progress Earnings Schedule. If progress is falling behind, provide an explanation for the progress deficiency and any actions taken or proposed to correct the deficiency.
 - (3) Work Performed Last Period: The work performed during the last update period and any deviations from the work scheduled. A listing of the Project Schedule activities will not be accepted as a substitute.
 - (4) Changes in Work Plan: Any major changes in the Contractor's work plan in terms of sequence of construction, shifts, means and methods, manpower, or equipment.
 - (5) Changes to Schedule: Any non-progress changes made to the Project Schedule since the previous submission including, changes requested or approved by Engineer. Also, any justification why changes requested by the Engineer should not be accomplished. A Claim Digger report or Schedule Comparison report will not be accepted as a substitute.
 - (6) Project Critical Path: The critical path work and any deviations from the previous submission. A listing of the Project Schedule critical path activities will not be accepted as a substitute.
 - (7) Days Lost Last Period: Number of days lost during the last update period, including activities affected and how the activities were affected; as well as any impacts on the critical path or project milestones. Also, describe any actions taken or proposed to mitigate any resulting delays.
 - (8) DBE Participation: Log of the applicable DBE participation activities in the schedule and the DBE firms performing the work for which the Contractor intends to claim credit for

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attaining the DBE goal required in the Contract. The list shall indicate the start/finish dates and durations of the DBE participation activities.

- (9) Pending Contract Issues: The status of pending issues such as access, permits, conflicts with other related or adjacent work, Change Orders, time extension requests, etc.
- (10) Issues and Concerns: Any issues encountered during the last update period that are currently affecting the Project Schedule or other Project concerns that are anticipated to affect the schedule, including an explanation of any corrective actions taken or required to mitigate or avoid the effects.
- (11) Work Planned Next Period: Work planned for the next update period, including any actions needed or expected performance by the Department or other involved parties (e.g., utilities) to avoid impacts to the Work.

C. **Update Progress Earnings Schedule** – An Update Progress Earnings Schedule showing the actual progress earnings to date and the projected earnings for the remaining periods, as of the Data Date. The Update Progress Earnings Schedule shall be prepared as follows:

- (1) The C-13C (Baseline) form shall be updated to show the current Projected Completion Date based on the current Update Schedule.
- (2) The C-13C (Update) form shall be completed to show the current Projected Completion Date, Current Estimate Date, and actual monthly earnings, and anticipated earnings for each Major Work Category as of the Current Estimate Date.
- (3) The Controls Chart Data form shall be completed to show the Actual Monthly Earnings for each estimate date to date, as of the Current Estimate Date.

4. Revised Baseline Progress Schedule

The Contractor shall submit a Revised Baseline Progress Schedule as determined by the Engineer. The Engineer may determine that a Revised Baseline Progress Schedule is required when:

- A. The Engineer determines that the Work is being performed significantly different from the SOR; or the Engineer approves changes to the Contract that significantly impacts the Project Schedule or causes a major shift in the anticipated progress earnings. In which case, the Engineer will issue a written notice to the Contractor to submit a Revised Baseline Progress Schedule. The Contractor shall respond in writing within seven (7) days, either agreeing to comply with the Engineer's request or providing justification why the request should not be accomplished.
- B. The Contractor proposes to perform the Work significantly different from the SOR. In which case, the Contractor shall notify the Engineer in writing at least 14 days prior to performing the Work. The Contractor's notice shall describe the proposed changes and potential impact on the Project Schedule. The Engineer will respond in writing within seven (7) days of the Contractor's notice, either agreeing with the Contractor's proposed revisions or providing reasons why the requested revisions should not be accomplished.

If the Engineer requests a Revised Baseline Progress Schedule or accepts the Contractor's proposed revisions, the Contractor shall submit a Revised Baseline Progress Schedule in lieu of the subsequent required Update Progress Schedule submission or as requested by the Engineer.

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If the Engineer does not accept the Contractor's proposed revisions, the Contractor shall not incorporate the proposed revisions into the Project Schedule. In which case, the Contractor shall proceed under the previously accepted Progress Schedule and the current SOR shall remain.

The Revised Baseline Progress Schedule shall be prepared and submitted in the form of a Baseline Progress Schedule, according to Section II.2 above; however, it shall reflect the current status of the Project as of the submittal date, any approved changes in the Work, and the proposed plan for completing the remaining Work. The Revised Baseline Progress Schedule submission shall consist of:

A. **Revised Baseline Schedule** – A Revised Baseline Schedule, which shall be based on the most recent accepted Project Schedule. The Revised Baseline Schedule shall be prepared according to Section II.2.A above and as follows:

- (1) The Project ID and Name for each submission shall be unique and defined as follows:
 - (a) The Project ID shall be updated to indicate the specific Update Schedule version being submitted as a Revised Baseline (RB) (e.g., C000XXXXXXXX_U06RB, C000XXXXXXXX_U20RB).
 - (b) The Project Name shall be updated to indicate the specific version of the schedule (e.g., Route 10 Over I-95 Bridge Replacement Update Schedule #6/Revised Baseline).
- (2) All activities completed prior to the Data Date shall be updated to show actual start and actual finish dates. And all on-going activities as of the Data Date shall be updated to show actual start dates and remaining duration to indicate the amount of time required to complete the remaining work. Actual dates beyond the Data Date are prohibited.
- (3) Activity percent complete for on-going activities shall be based on cost of work completed as of the Data Date relative to the total cost of work planned.
- (4) All schedule related changes requested or approved by the Engineer shall be incorporated into the Revised Baseline Schedule, including as applicable, added or deleted work, changes in sequence of work, changes in duration, approved SIA; and changes to the Contract Amount, Contract Milestones, Completion Date, and other time-related requirements.
- (5) Activity logic shall be modified as necessary to correct out-of-sequence progress for on-going and remaining activities to reflect the Contractor's current plan for completing the remaining Work.
- (6) The Revised Baseline Schedule shall be calculated using a Data Date of either the 4th, 11th, or 20th of the month, based on the Contractor's estimate date as defined in Section 109.08(a) – Partial Payments, of the Specifications, or as approved by the Engineer.

B. **Revised Baseline Schedule Narrative** – A Revised Baseline Schedule Narrative, which shall be the basis for the Revised Project Schedule. The Revised Baseline Schedule Narrative shall be prepared according to Section II.2.B above; however, it shall reflect the current status of the project as of the submittal date, approved changes in the Work, and the proposed plan for completing the remaining Work.

C. **Revised Baseline Progress Earnings Schedule** – A Revised Baseline Progress Earnings Schedule showing the actual earnings to date and anticipated earnings for the remaining

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Work. The Revised Baseline Progress Earnings Schedule shall be prepared and submitted according to Section II.2.C above, and as follows:

- (1) The C-13C (Baseline) form shall be adjusted accordingly to show the current Contract Dates and Amount.
- (2) The C-13C (Baseline) form shall be completed to show the actual monthly earnings and anticipated earnings for each Major Work Category as of the Current Estimate Date.
- (3) The C-13C (Update) form shall be completed to show the current Completion Date and actual monthly earnings and anticipated earnings for each Major Work Category as of the Current Estimate Date.
- (4) The Controls Chart Data form shall be completed to show the Actual Monthly Earnings for each estimate date to date, as of the Current Estimate Date.

5. Final As-built Schedule

Within 30 days after Final Acceptance and as a requirement for Final Payment, the Contractor shall submit a Final As-built Schedule. The Final As-built Schedule shall be submitted as the final Update Schedule according to Section II.3.A above, showing the actual start and finish dates for all activities in the Project Schedule. The Contractor shall certify in writing that the Final As-built Schedule accurately reflects the dates on which all activities contained in the Project Schedule were actually performed.

6. **Early Completion Incentive Duration** – For Contracts that include an incentivized provision for completing a portion of the Work before a specified milestone date or all of the Work before the Completion Date, the Contractor may insert an “Early Completion Date” milestone activity to indicate its intent to complete the Work early. In which case, the Contractor may insert an “Early Completion Incentive Duration” activity between the proposed “Early Completion Date” milestone activity and the Contract completion milestone activity. The incentive duration shall be specified in calendar days, which shall not exceed the maximum allowable incentive days at any time. The incentive duration shall be adjusted accordingly each Update Schedule to reflect any slippage or contraction of the Project Schedule.
7. **Use of Total Float** – Total float shall be considered a project property that is shared amongst all activities on the network. Total float shall be calculated relative to the Completion Date or a related Contract milestone, as applicable. The Contractor may submit a Progress Schedule showing completion of a portion of the Work before a specified milestone date or all of the Work before the Completion Date. If this occurs, any total float available in the Project Schedule, at any time, shall belong to the Project. It shall be understood that total float is not for the exclusive use or benefit of either the Department or the Contractor and that either party has the right to full use of any available total float. Until such time that all available total float is depleted, total float shall be used responsibly on a first come first serve basis for the benefit of the Project. Changes to the Project Schedule at any time for the purpose of manipulating float is prohibited, with the exception of adjustments to incentive duration activities for Contracts with incentive provisions for early completion, as defined herein. Negative total float will not be allowed in the Preliminary Schedule, Baseline Schedule, or Revised Baseline Schedule.

8. Progress Schedule Submittal Format and Reports

Unless otherwise approved in writing by the Engineer, the Contractor shall submit for each Preliminary Schedule, Baseline Schedule, Update Schedule, or Revised Baseline Schedule submission, the following submittal items and reports, in the formats specified below:

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- A. **File Naming Convention** – Each electronic submittal file shall have a unique file name using a file naming convention that identifies the file by the Contract ID (e.g., C000XXXXXX), version of Progress Schedule (e.g., PS1, BS, BSR1, U01, U04RB), type of submission (e.g., Preliminary Schedule, Baseline Schedule Narrative, Form C-13C), and Data Date of the submission. For example: C000XXXXXX_PS1_Preliminary Schedule_04-01-21.xer.
- B. **Transmittal Email** – An electronic mail to the Engineer, identifying which Progress Schedule is being submitted for review and what submittal items are included.
- C. **Project Schedule** – For each submission of the Project Schedule, the Contractor shall submit:
- (1) A backup copy of the working schedule in Primavera P6 “.xer” file format.
 - (2) A copy of the “Schedule Log” in “.pdf” file format.
 - (3) A time-scaled bar-chart plot of the “Complete Detailed Schedule” in “.pdf” file format, showing for each activity, Activity ID, Activity Name, Original Duration, Start, Finish, Activity % Complete, Remaining Duration, and Total Float.
 - (4) A time-scaled bar-chart plot of the “Critical Path Schedule” in “.pdf” file format, showing for each critical path activity, Activity ID, Activity Name, Original Duration, Start, Finish, Activity % Complete, Remaining Duration, and Total Float.
 - (5) A tabular “Predecessor and Successor Report (PSR)” in “.pdf” file format showing the predecessors and successors for each activity. The PSR shall be sorted by WBS and in ascending order by Activity ID and shall show for each activity.
 - (a) Activity ID and Activity Name.
 - (b) Original Duration and Remaining Duration.
 - (c) Early Start, Early Finish, Late Start, Late Finish.
 - (d) Free Float, Total Float, and Critical (“Yes” or “No”).
 - (e) For each Predecessor/Successor activity, show the Activity ID, Activity Name, Relationship Type, Lag, Free Float, Total Float, Driving (“Yes” or “No”), and Critical (“Yes” or “No”).
- D. **Schedule Narrative** – For each submission of the Project Schedule, the Contractor shall submit a file copy of the “Project Schedule Narrative” in “.pdf” format.
- E. **Progress Earnings Schedule** – For each submission of the Project Schedule, the Contractor shall submit a Progress Earnings Schedule report as follows:
- (1) A copy of the “Progress Earnings Schedule (Form C-13C)” in “.xlsm” file format.
 - (2) Copies of the “Monthly Progress Earnings Schedule” and “S-Curve” in “.pdf” file format.

III. Review and Acceptance

The Engineer will review each Progress Schedule submission for acceptance and will respond within fourteen (14) days of receipt of the Contractor’s complete submittal. The Engineer will determine

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acceptance or rejection based on conformance with this specification and other requirements of the Contract and will respond as follows:

1. **Accepted, No Exceptions** – When the submission is complete and in full compliance with this specification and other requirements of the Contract, the Engineer will respond to the Contractor with a notice indicating the submission is “Accepted, No Exceptions”.
2. **Accepted As Noted** – When the submission is complete and generally in compliance with this specification and other requirements of the Contract, but contains minor flaws or exceptions, the Engineer will respond to the Contractor with a notice indicating the submission is “Accepted As Noted”. In which case, the Contractor shall make the necessary corrections in the next required Progress Schedule submission to address the Engineer’s comments or provide justifications in the narrative why the corrections should not be made.
3. **Rejected, As Noted** – When the submission is incomplete or not in compliance with this specification or other requirements of the Contract, the Engineer will respond to the Contractor with a notice indicating the submission is “Rejected, As Noted”. The Progress Schedule submission will be immediately rejected and returned by the Engineer for the following reasons:
 - A. Failure to include all required reports and submittal items.
 - B. Failure to calculate the Project Schedule using the correct Data Date.
 - C. Primavera P6 software settings are different from those specified in the Contract.
 - D. The Schedule Log shows use of prohibited constraints.
 - E. The Schedule Log shows activity without predecessors or successors with exception of the first and last activities.
 - F. Repeated failure to correct out-of-sequence activities.
 - G. The Schedule Log shows Actual Dates > Data Date.
 - H. The Schedule Log shows Milestone Activities with invalid relationships.
 - I. Failure to respond to the Engineer’s review comments from the previous submission.

If the submission is rejected and returned by the Engineer, the Contractor shall make the necessary corrections to address the Engineer’s comments and resubmit the Progress Schedule within seven (7) days of receipt of the Engineer’s response.

When the Engineer determines that a meeting with the Contractor is necessary to discuss proposed changes to the schedule or to resolve issues concerning acceptance of the Progress Schedule submission, the Contractor shall meet with the Engineer as requested.

If the Contractor or Engineer discovers an error after the Engineer has accepted a Progress Schedule, the Contractor shall correct the error in the next required submission.

The Engineer’s acceptance of a Progress Schedule submission does not attest to the validity of the Project Schedule, sequencing, logic, duration, or assumptions on which the schedule is based. Acceptance by the Engineer does not transfer any of the Contractor’s responsibilities to the Department. Failure of the Contractor to include in the Project Schedule any element of work required by the Contract for timely completion will not excuse the Contractor from completing the Work within the Contract specified Milestone(s) or the Contract time limit, as applicable.

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Upon acceptance by the Engineer, the Baseline Progress Schedule or a subsequent Revised Baseline Progress Schedule will be established as the Project "Schedule of Record (SOR)". The SOR is the latest agreed upon and only Project Baseline with which all parties will plan and execute all work required to complete the Project; and against which progress of the Project and the Contractor's performance will be assessed.

IV. Failure to Comply with Progress Schedule Submission Requirements

The Engineer may delay approval of the monthly progress estimate for failure to submit an acceptable Progress Schedule on time and as required. Payments withheld for violation of the schedule requirements will be included in the next progress estimate following the Contractor's submission of an acceptable Progress Schedule. However, no payments will be made for monthly Update Progress Schedule pay items for late submissions. Any delays resulting from payment withholding due to the Contractor's failure to provide an acceptable Progress Schedule will not be considered just cause for extension of the Contract time limit or for additional compensation.

V. Delays and Schedule Impact Analysis (SIA)

The Contractor shall promptly notify the Engineer when it discovers or encounters any changes to the Work or conditions that are expected to impact the Project Schedule. In the event of an excusable delay that extends the completion date of the Project or a Contract milestone, as applicable, beyond the Contract specified date, for which the Contractor is seeking an extension of time, the Contractor shall promptly submit a request for an adjustment to the Contract in accordance with Section 108.04 of the Specifications. Unless directed otherwise in writing by the Engineer, the Contractor shall submit along with its request for an adjustment to the Contract, a Schedule Impact Analysis (SIA) in accordance with the following:

1. Prospective SIA for Anticipated Impacts Due to Directed or Authorized Changes

The Engineer may issue a written request to the Contractor for proposed additions, deletions, or other changes to the Work in accordance with Section 104 of the Specifications. If this occurs and the Contractor is seeking an extension of time, the Contractor shall submit a Prospective SIA within seven (7) days after receipt of the Engineer's request and prior to proceeding with the changed work, unless directed otherwise in writing by the Engineer. The Prospective SIA submission shall consist of the following:

A. Prospective SIA Schedule – The Prospective SIA Schedule shall reflect all known information at the time of analysis and shall be prepared and submitted as follows.

- (1) A Pre-impact SIA Schedule shall be prepared by updating a copy of the latest accepted Project Schedule in place prior to the proposed change with progress only through the date before the proposed change.
- (2) An Impacted SIA Schedule shall be prepared by inserting a fragnet (fragmentary network) of the detail activities representing the added or changed Work into a copy of the Pre-impact SIA Schedule. The added activities shall be linked to other related and affected activities accordingly.
- (3) The Prospective SIA Schedule submission shall include a bar-chart schedule layout showing the added activities, related and affected activities, critical path activities, and any affected Contract milestones. It shall also show a graphical comparison between the Impacted SIA Schedule and Pre-impact SIA Schedule and variances in activity duration, start dates, and finish dates.

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- (4) The Prospective SIA Schedule submission shall include “.pdf” copies and electronic backup copies of the Pre-impact and Impacted SIA Schedules in the “.xer” file format.

B. Prospective SIA Narrative – The Prospective SIA Narrative shall describe:

- (1) The proposed changes to the Work and timeline of events associated with the changes.
- (2) Any changes made to the Project Schedule and current status of the Project prior to the proposed change as reflected on the Pre-impact SIA Schedule.
- (3) The changes made to the Pre-impact SIA Schedule including, added or deleted activities, affected activities and how the activities are expected to be affected.
- (4) Any shifts to the Critical Path and overall impact to related Contract milestones or the Project Completion Date as reflected on the Impacted SIA Schedule.
- (5) Any actions taken or proposed to mitigate or avoid the potential impact.

2. Retrospective SIA for Impacts Due to Unforeseen Changes and Delays

In the event of an excusable delay resulting from unforeseen changes to the Work or conditions, for which the Contractor is seeking a time extension, the Contractor shall submit along with its request for time extension, a Retrospective SIA within fourteen (14) days after the end date of the delay event, unless directed otherwise in writing by the Engineer. The Retrospective SIA submission shall consist of the following:

A. Retrospective SIA Schedules – The Retrospective SIA Schedules shall include all accepted monthly Update Schedules immediately before, during, and after the delay event and shall consider all known information as of the time of analysis. If there are update periods with missing Update Schedules or Update Schedules returned with a notice of “Rejected, As Noted”, the Contractor shall prepare acceptable Update Schedules with progress only for the missing periods using the previous accepted Update Schedule accordingly. If there are Update Schedules returned with a notice of “Accepted As Noted”, the Contractor shall modify the Update Schedules accordingly to address the Engineer’s comments. The Retrospective SIA shall be prepared and submitted as follows:

- (1) Each accepted monthly Update Schedule submitted during the period of occurrence of the delay event shall be compared against the accepted Update Schedule for the previous update period, to identify any variances between actual and planned performance for the work performed during each update period.
- (2) Each SIA Schedule shall show the activities performed during last update period, including any activities added to the SIA Schedule to identify delay events; as well as the Project Critical Path activities. The SIA Schedule layout shall show:
 - (a) For each activity, Original Duration, Start, Finish, Criticality, and Total Float. It shall also show the previous Update Schedule Start, Finish; and the Start, Finish, and Duration variances relative to the **previous Update Schedule**.
 - (b) A bar-chart plot showing a graphical comparison between the SIA Schedule and previous Update Schedule
- (3) If there are Update Schedules with schedule changes that negatively impacts the schedule, the analysis shall be split to determine the impact due to the changes and

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impact due to progress separately by updating a copy of the previous Update Schedule with progress alone.

- (4) Any related impact resulting from projected delays due to calendar restrictions such as winter weather or TOYR shall be deferred until after the delays have actually occurred.
- (5) The Retrospective SIA Schedule submission shall include “.pdf” copies and electronic backup copies of the SIA Schedules in the “.xer” file format.

B. Retrospective SIA Narrative – The Retrospective SIA Narrative shall describe:

- (1) The changes to the Work or conditions or delay events, including explanation of who is responsible and why the delay is excusable.
- (2) Timeline of events associated with the delay, including all actions and waiting times.
- (3) For each update period, identify the SIA Schedule and previous Update Schedule and:
 - (a) Any changes made to the SIA Schedule, including activities added to identify delay events, deleted activities, affected activities and how the activities were affected.
 - (b) The controlling critical path activity and any causal link to the delay event.
 - (c) Any shifts to the Critical Path, Milestone, or the Project Completion Date.
- (4) Any actions taken or proposed to mitigate the impact.
- (5) A summary of any incremental time gains or losses in the Milestones, or the Project Completion Date for each update period.

The Engineer will review the Contractor’s request and SIA and will respond within 14 days of submittal. The Contractor must adhere to the notice of a change, request for time extension, and SIA submission requirements; as well Section 105.19 of the Specifications to preserve their rights to file a claim. The Contractor’s notice of a change, a subsequent meeting with the Engineer, or submittal of a request for modification of the Contract as defined herein, shall not constitute a notice of intent to file a claim as required by Section 105.19. *No part of this provision is intended to alter, replace, or supersede Section 105.19 of the Specifications.*

VI. Monitoring the Work and Assessing Progress

The Engineer will monitor and assess progress of the Work regularly relative to the SOR to identify deviations from the Contractor’s scheduled performance and to determine if progress is satisfactory according to the following:

1. Progress and Coordination Meetings

Once the Work is underway and until the Project is completed, the Contractor shall keep the Engineer up-to-date on the short-term work plan on a regular basis, including any changes in the work plan or issues that may impact the schedule, as follows:

- A. **Weekly Progress Meetings** – Unless directed otherwise by the Engineer, the Contractor’s personnel (i.e., Project Manager, Superintendent, Field Supervisor) shall on a weekly basis meet with the Engineer on a day and time as mutually agreed upon. The meeting shall be held to discuss the current progress of Work and any work planned for the upcoming two (2) weeks, including work by the Department and others; as well as any on-going or upcoming

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issues that are anticipated to impact the schedule. At the weekly progress meeting and until all Work is completed, the Contractor shall furnish in Bar Chart format, a detailed Two-Week Look-Ahead (TWLA) Schedule to the Engineer. The TWLA Schedule shall depict in a greater level of detail, the daily operations, showing actual dates for work performed since the last TWLA Schedule submission and planned dates for work to be performed in the upcoming two (2) weeks. The daily operations included in the TWLA Schedule shall specifically reference the applicable Activity IDs in the Project Schedule. The TWLA Schedule may be prepared using a computer software or by hand.

- B. Monthly Progress Meetings** – Unless directed otherwise by the Engineer, the Contractor shall attend a monthly progress meeting with the Engineer on a day as mutually agreed upon. At the progress meeting the Contractor shall furnish a 60-day Look-ahead Schedule Report and shall be prepared to discuss the current status of the Project, work performed during the last period, on-going work, and work planned for the following sixty (60) days; as well as any issues that are currently impacting the schedule or anticipated to impact the schedule. The 60-day Look-ahead Schedule shall be based on the Contractor's current Update Schedule, showing actual dates for work performed during the last update period and planned dates for work to be performed in the upcoming sixty (60) days.

2. Progress Evaluation and Unsatisfactory Performance

- A. Progress Deficiency and Schedule Slippage** – The Engineer will assess the current status of the Work each month, based on the monthly Update Progress Schedule submission, and relative to the SOR. The Contractor's actual progress may be considered unsatisfactory, as determined by the Engineer, if any of the following conditions occur:

- (1) The Actual Progress Percent Complete for Work completed to date, based on the current estimate, falls behind the Baseline Cumulative Progress Percent Complete by more than ten (10) percent, relative to the SOR.
- (2) A Contract milestone or the Project Completion Date is currently projected to complete more than twenty-one (21) days after the date specified in the Contract, as applicable.

- B. Notice of Unsatisfactory Performance** – When the Engineer determines that actual progress of the Work is unsatisfactory, the Engineer will issue a written notice of unsatisfactory performance to the Contractor. The Engineer will also advise the Contractor that five (5) percent retainage of the monthly progress estimate is being withheld and will continue to be withheld as described in Section 109.08(c), for each month the Contractor's actual progress is remains unsatisfactory. Within fourteen (14) days from the date of receipt of the Engineer's notice, the Contractor shall respond by submitting a written statement describing any actions taken or proposed by the Contractor to correct the progress deficiency. If the Contractor's response includes a proposed recovery plan, the current Project Schedule shall be modified accordingly to reflect the Contractor's proposed recovery plan. The Contractor may submit to the Engineer a written explanation along with supporting documentation to establish that such delinquency is attributable to conditions beyond its control. If the Engineer accepts the Contractor's recovery plan, the modified Project Schedule showing the recovery plan will be considered the current Update Schedule and will not replace the SOR.

If the Contractor fails to respond within the time required, or the response is unacceptable, its prequalification status may be changed as provided in Section 102.01 of the Specifications, and the Contractor may be temporarily disqualified from bidding on contracts with the Department as provided in Section 102.08, if progress remains unsatisfactory at the time of preparation of the next monthly progress estimate. The Engineer may delay these actions when a Contract time extension is under consideration.

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VII. Measurement and Payment

Baseline Progress Schedule will be measured and paid for at the Contract Lump Sum price. This price shall include all work associated with the preparation and submission of the Preliminary Progress Schedule and the Baseline Progress Schedule and will be paid as follows:

1. Twenty-five (25) percent of the Contract Lump Sum price will be paid upon acceptance of the Preliminary Progress Schedule submission. No separate measurement and payment will be made for preparation and submission of updates to the Preliminary Progress Schedule. All costs associated with updating and submitting the updated Preliminary Progress Schedule shall be considered incidental.
2. Seventy-five (75) percent of the Contract Lump Sum price will be made upon acceptance of the Baseline Progress Schedule submission.
3. All costs associated with attendance of the Scheduling Conference and other Baseline Progress Schedule related meetings shall be considered incidental.

Progress Schedule Update will be measured in units of each and paid for at the Contract each price. This price shall include all costs associated with the preparation and submission of the Update Progress Schedule, Revised Baseline Progress Schedule, Final As-built Schedule, and SIA and will be paid as follows:

1. Progress payments of one each (1 EA) at the Contract each price will be made upon acceptance of the Update Progress Schedule, Revised Baseline Progress Schedule, and Final As-built Schedule submission. Progress payments will not be made for Progress Schedule Updates submitted for any time in excess of the time limit established in the Contract as extended in accordance with Section 108.04.
2. No separate measurement and payment will be made for preparation and submission of the SIA or for attendance of related meetings. All costs associated with the SIA shall be considered incidental.
3. No separate measurement and payment will be made for attendance of progress meetings or other Update Progress Schedule related meetings. All costs associated with attendance of the scheduling meetings shall be considered incidental.

Payment will be made under:

| Pay Item | Pay Unit |
|----------------------------|-----------------|
| Baseline Progress Schedule | Lump sum |
| Progress Schedule Updates | Each |

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SP109-000100-04

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
ASPHALT MATERIAL PRICE ADJUSTMENT

June 29, 2023

All asphalt material contained in the master listing on the [Construction Division web site](#) of eligible bid items and designated by pay items in the Contract will be price adjusted according to the provisions as set forth herein. Other items will not be adjusted, except as otherwise specified in the Contract. If new pay items which contain asphalt material are established by Change Order, they will not be subject to Price Adjustment unless specifically designated in the Change Order to be subject to Price Adjustment.

Each month, the Department will publish an average state-wide PG 64S-22 f.o.b. price per ton and an average PG 64E-22 f.o.b. price per ton developed from the average terminal prices provided to the Department from suppliers of asphalt cement to contractors doing work in Virginia. The Department will collect terminal prices from approximately 12 terminals each month. These prices will be received once each month from suppliers on or about the last weekday of the month. The high and low prices will be eliminated and the remaining values averaged to establish the average statewide price for the following month. The monthly state-wide average price will be posted on the Construction Division website on or about the first weekday of the following month. In the event the average prices were to change by 10 percent or more of the Base Index during the middle of the month the Contractor can submit a letter to the Department and supplier that provides evidence of the difference in price. Upon receipt of the letter consideration will be given to extend additional adjustments as deemed necessary.

This monthly statewide average price will be the Base Index for all contracts on which bids are received during the calendar month of its posting and will be the Current Index for all asphalt placed during the calendar month of its posting. In the event an index changes radically from the apparent trend, as determined by the Engineer, the Department may establish an index which it determines to best reflect the trend.

The amount of adjustment applied will be based on the difference between the contract Base Index and the Current Index for the applicable calendar month during which the work is performed. The quantity of asphalt cement for asphalt concrete pavement to which adjustment will be applied will be the quantity based on the percent of asphalt cement shown on the appropriate approved job mix formula.

Adjustment of any asphalt material other than PG 64S-22 and PG 64E-22 will be based on the indexes for PG 64S-22.

The quantity of asphalt emulsions to which adjustment will be applied will be the quantity based on 65 percent residual asphalt.

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

Any apparent attempt to unbalance bids in favor of items subject to price adjustment or failure to submit required cost and price data as noted hereinbefore may result in rejection of the bid proposal.

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[SP109-000110-00](#)

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
OPTIONAL ADJUSTMENT FOR FUEL

July 1, 2015; Reissued July 12, 2016

The Department will adjust monthly progress payments up or down as appropriate for cost changes in fuel used on specific items of work identified in this provision. The Department will provide a master listing of standard bid items eligible for fuel adjustment on its website.

Included with this proposal is a listing of standard bid items the Department has identified as eligible for fuel adjustment on this project(s) as well as the respective fuel factors per pay unit for those items. Only items on this listing will be eligible for adjustment. The fuel usage factor for each item is considered inclusive of all fuel usage. Generally, non-standard pay items are not eligible for fuel adjustment.

The listing of eligible items applicable to this particular project is shown on Form C-21B "Bid Items Eligible for Fuel Adjustment" included with the bidding documents. The Bidder may choose to have fuel adjustment applied to any or all eligible items on this project's listing by designating the items for which the fuel adjustment will apply. The Bidder's selection of items for fuel adjustment may not be changed once he has submitted Form C-21B to the Department.

In order to be eligible for fuel adjustment under this provision, the apparent lowest responsive and responsible Bidder shall clearly identify on Form C-21B those pay items he chooses to have fuel adjustment applied on. Within 21 days after the receipt of bids the apparent successful Bidder shall submit his designated items on Form C-21B to the Contract Engineer. Items the successful Bidder chooses for fuel adjustment must be designated by writing the word "Yes" in the column titled "Option" by each bid item chosen for fuel adjustment. The successful Bidder's designations on Form C-21B must be written in ink or typed, and signed by this Bidder to be considered complete. Items not properly designated or left blank on the Bidder's C-21B "Bid Items Eligible for Fuel Adjustment" form may be not considered for adjustment. If the apparent successful Bidder fails to return his Form C-21B within the timeframe specified, items will not be eligible for fuel adjustment on this project.

The monthly index price to be used in the administration of this provision will be calculated by the Department from the Diesel fuel prices published by the U. S. Department of Energy, Energy Information Administration on highway diesel prices, for the Lower Atlantic region. The monthly index price will be the price for diesel fuel calculated by averaging each of the weekly posted prices for that particular month.

For the purposes of this provision, the base index price will be calculated using the data from the month preceding the receipt of bids. The base index price will be posted by the Department at the beginning of the month for all bids received during that month.

The current index price will be posted by the Department and will be calculated using the data from the month preceding the particular estimate being vouchered for payment.

The current monthly quantity for eligible items of work selected by the Contractor for fuel adjustment will be multiplied by the appropriate fuel factor to determine the gallons of fuel to be cost adjusted. The amount of adjustment per gallon will be the net difference between the current index price and the base index price. Computation for adjustment will be made as follows:

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$$S = (E - B) QF$$

Where; S = Monetary amount of the adjustment (plus or minus)
B = Base index price
E = Current index price
Q = Quantity of individual units of work
F = Appropriate fuel factor

Adjustments will not be made for work performed beyond the original contract time limit unless the original time limit has been changed by an executed Work Order.

If new pay items are added to this contract by Work Order and they are listed on Department's master listing of eligible items, the Work Order must indicate which of these individual items will be fuel adjusted; otherwise, those items will not be fuel adjusted. If applicable, designating which new pay items will be added for fuel adjustment must be determined during development of the Work Order and clearly shown on Form C-10 Work Order. The Base Index price on any new eligible pay items added by Work Order will be the Base Index price posted for the month in which bids were received for that particular project. The Current Index price for any new eligible pay items added by Work Order will be the Index price posted for the month preceding the estimate on which the Work Order is paid.

When quantities differ between the last monthly estimate prepared upon final acceptance and the final estimate, adjustment will be made using the appropriate current index for the period in which that specific item of work was last performed.

In the event any of the base fuel prices in this contract increase more than 100 percent (i.e. fuel prices double), the Engineer will review each affected item of work and give the Contractor written notice if work is to stop on any affected item of work. The Department reserves the right to reduce, eliminate or renegotiate the unit price for remaining portions of affected items of work.

Any amounts resulting from fuel adjustment will not be included in the total cost of work for determination of progress or for extension of contract time.

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SP109-000120-01

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
PRICE ADJUSTMENT FOR STEEL

July 2, 2019

The Department will adjust monthly progress payments up or down as appropriate for cost changes in steel used on specific items of work identified in the Contract according to this provision. The master list of standard Pay Items the Department has determined are eligible for steel price adjustment is posted on the Construction Division website.

Items eligible for steel price adjustment for this Project will be shown on Form C-21C, included with the Proposal. Only items on the form C-21C will be eligible for steel price adjustment. Non-standard Pay Items will not be eligible for steel price adjustment unless such steel items are project-specific modifications of items normally eligible, are clearly and specifically identified by a separate and distinct steel Pay Item, and the quantities present on the Project constitute major items of the work.

The Bidder shall submit Form C-21C to the State Contract Engineer no later than 15 calendar days after the date of Award Recommendation letter to identify those pay items to which he chooses to apply steel price adjustment. The Bidder may choose to have steel price adjustment applied to any, all, or none of the eligible items shown on Form C-21C. However, the Bidder's selection of items for steel price adjustment or non-selection (non-participation) may not be changed once he has submitted Form C-21C to the Department. Items the Bidder chooses for steel price adjustment must be designated by writing the word "Yes" in the column titled "Option" by each Pay Item chosen for adjustment. The Bidder's designations on Form C-21C must be written in ink or typed, and signed by the Bidder to be considered complete. Items not properly designated, or designated with "No" or left blank on the Bidder's C-21C form will automatically be removed from consideration for adjustment. No steel items will be eligible for steel price adjustment on this Project if the Bidder fails to return his Form C-21C on time.

Inventoried materials from the list of eligible items are specifically excluded for consideration. Items from the list of eligible items for which the Contractor has requested payment as Material on Hand according to Section 109.09 are also specifically excluded for consideration past the delivery date to the fabricator.

This provision shall apply only to material cost changes that occur between the date of the receipt of bids by the Department and the date the material is shipped to the fabricator. The Contractor, subcontractor, and supplier are required to place their purchase order for the steel items designated in this Contract for price adjustment within 30 calendar days after the date of execution of this Contract with the Department. The timeliness of the Contractor's response is also to ensure the receipt of such items in a timely manner that shall not adversely affect his progress schedule or Contract completion date. The items shall further be specifically stored, labeled, or tagged, recognizable by color marking, and identifiable by Project for inspection and audit verification immediately upon arrival at the fabricator.

The Contractor shall submit documentation to the Engineer for all items listed in the Contract for which the Contractor is requesting a steel price adjustment. This documentation shall consist of material price quotes, bid papers, or other similar type of documentation satisfactory to the Department and support the completion of the form establishing the average price per pound for the eligible steel bid item. The Contractor must use the format as shown with this provision; no other format for presenting this information will be permitted. The Contractor shall certify that all items of documentation are original and were used in the computation of the amount bid for the represented eligible Pay Items for the month bids were opened. This documentation shall support the base line material price ("Base Price") of the steel item only. No adjustment will be made for changes in other components of the item unit price, including, but not limited to, fabrication, shipping, storage, handling, and erection.

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The Contractor will not be eligible for price adjustment of steel items if the Contractor fails to submit specifically required information (i.e., purchase order, price data, bill of lading, material information or other requested information) as noted herein.

Price adjustment of each qualifying item will only be considered if there is an increase or decrease in the cost of eligible steel materials in excess of 10 percent up to a maximum of 60 percent from the Base Price when compared with the latest published price index ("Price Index") in effect at the time material is shipped to the fabricator.

The Price Index the Department is using is based on The U.S. Department of Labor, Bureau of Labor Statistics, Producers Price Index (PPI), which measures the average price change over time of the specific steel eligible item from the perspective of the seller of goods. The specific PPI to be used to adjust the price for the eligible VDOT steel items is shown on the list posted on the Department's website. The PPI is subject to revision 4 months after original publication, therefore, price adjustments and payments will not be made until the index numbers are finalized.

Items under consideration for price adjustment will be compared to the steel category index items and the corresponding I.D. numbers in the master list of standard Pay Items eligible for steel price adjustment.

The price adjustment will be determined by comparing the percentage of change in index value beyond 10 percent above or below the index on the bid date to the index value on the date the steel material is shipped to the fabricator (Please see included sample examples). Weights and date of shipment must be documented by a bill of lading provided to the Department. The final price adjustment dollar value will be determined by multiplying this percent increase or decrease in the index (after 10%) by the represented quantity of steel shipped, by the Base Price per pound subject to the limitations herein.

Price increase/decrease will be computed as follows:

$$A = B \times P \times Q$$

- Where;
- A = Steel price adjustment in lump sum dollars
 - B = Average weighted price of steel submitted with bid on Project in \$ per pound
 - P = Adjusted percentage change in PPI average from shipping date to bid date minus 10% (0.10) threshold
 - Q = Total quantity of steel in pounds shipped to fabricator for specific Project

Delays to the work caused by steel shortages may be justification for a Contract time extension but will not constitute grounds for claims for standby equipment, extended office overhead, or other costs associated with such delays.

The Engineer will determine, and specify in the Change Order, the need for application of the adjustments herein to extra work on an individual basis.

This price adjustment is capped at 60 percent. This means the maximum "P" value for increase or decrease that can be used in the above equation is 50% (60%-10% threshold).

Calculations for price adjustment shall be shown separate from the monthly progress estimate and will not be included in the total cost of work for determination of progress or for extension of Contract time.

Any apparent attempt to unbalance bids in favor of items subject to price adjustment may result in rejection of the bid proposal.

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20-Jan-05

Steel Price Adjustment Sample Submission Form
 (All prices to be supported by project-specific quotes)

BID DATE

28-Apr-04

Bid Item 61720 High Strength Structural Steel

| Supplier | Description of material | Unit price f.o.b supplier \$/lbs | Quantity In lbs. | Price Extension | Date of Quote |
|------------------|---|--|---------------------|--------------------|------------------|
| XYZ mill | Structural beams Various sizes (see quote) | \$0.28 | 1,200,000 | \$336,000.00 | 21-Apr-04 |
| ABC distributing | Various channel & angle shapes (see quote) | \$0.32 | 35,000 | \$11,200.00 | 20-Apr-04 |

Total 1,235,000 \$347,200.00

Average weighted price = \$0.2816

Note: All prices are to include any surcharges on materials quoted as if they are shipped in the month the bid is submitted. Vendors must include this surcharge along with their base price on their quotes.

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20-Jan-05

Price Adjustment Sample Calculation (increase)

Project bid on April 28, 2004.

Project has 450,000 lb. of structural steel.

Orders placed in timely manner and according to contract.

Contractor's *f.o.b. supplier price for the structural steel in bid is \$0.2816 per pound. *free on board

Adjusted** BLS Producers Price Index (PPI) most recently published average at time of bid is 139.6.

** final change
after 4 months

All steel shipped to fabricator in same month, October 2004.

Adjusted BLS PPI most recently published average for month of October is 161.1

Adjustment formula is as follows:

$$A = B \times P \times Q$$

- Where;
- A = Steel price adjustment in lump sum dollars
 - B = Average weighted price of steel submitted with bid on Project in \$ per pound
 - P = Adjusted percentage change in PPI average from shipping date to bid date minus 10% (0.10) threshold
 - Q = Total quantity of steel shipped to fabricator in October 2004 for this Project in pounds

$$B = \$0.2816$$

$$P = (161.1 - 139.6) / 139.6 - 0.10 = 0.054$$

$$Q = 450,000 \text{ lb.}$$

$$A = 0.2816 \times 0.054 \times 450,000$$

$$A = \$6,842.88 \text{ pay adjustment to Contractor}$$

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20-Jan-05

Price Adjustment Sample Calculation (decrease)

Project bid on April 28, 2004.

Project has 450,000 lb. of structural steel.

Orders placed in timely manner and according to contract.

Contractor's *f.o.b. supplier price for structural steel in bid is \$0.2816 per pound. *free on board

Adjusted BLS Producers Price Index (PPI) most recently published average at time of bid is 156.6.

All steel shipped to fabricator in same month, October 2004.

Adjusted BLS PPI most recently published average for month of October is 136.3

Adjustment formula is as follows:

$$A = B \times P \times Q$$

- Where;
- A = Steel price adjustment in lump sum dollars
 - B = Average weighted price of steel submitted with bid on Project in \$ per pound
 - P = Adjusted percentage change in PPI average from shipping date to bid date minus 10% (0.10) threshold
 - Q = Total quantity of steel shipped to fabricator in October 2004 for this Project in pounds

$$B = \$0.2816$$

$$P = (156.6 - 136.3)/156.6 - 0.10 = 0.030$$

$$Q = 450,000 \text{ lb.}$$

$$A = 0.2816 \times 0.030 \times 450,000$$

$$A = \$3,801.60 \text{ credit to Department}$$

ORDER NO.: K60
CONTRACT ID. NO.: C0000111466C01

[SP302-000110-00](#)

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
TEMPORARY VEHICULAR WATERCOURSE CROSSING

March 25, 2009; Reissued 7-12-16

I. GENERAL

This work shall consist of constructing a temporary vehicular watercourse crossing according to these specifications and in conformity with the plans, Standard Drawings, permits and Contract documents.

II. MATERIALS

Pipe shall conform to Section 232 of the Specifications.

Class I Dry Riprap shall conform to Section 204.02 (b) of the Specifications.

Number 1 coarse aggregate shall conform to Section 203 of the Specifications.

Geotextile Bedding Material shall conform to Section 245 of the Specifications.

Timber shall be structural grade material conforming to Section 236 of the Specifications.

III. CONSTRUCTION

The Contractor shall construct the temporary vehicular watercourse crossing at right angle to the stream. Where approach conditions dictate, the crossing may vary 15 degrees from a line drawn perpendicular to the approximate centerline of the stream.

The finished grade elevation of the crossing shall be 3 feet above the ordinary high water elevation. When not specified in the plans, or elsewhere in the Contract, the Contractor shall determine the ordinary high water elevation using appropriate methods, and submit this information to the Engineer for approval prior to commencement of construction of the crossing.

Clearing and excavation of the stream bed and banks shall be kept to a minimum. The installation and removal of the crossing shall be accomplished in the dry utilizing a dry pump around or a stream diversion.

The Engineer may make minor adjustments in the location of any temporary vehicular watercourse crossing identified in the construction plans provided that the adjustment does not change the design for the temporary vehicular watercourse crossing or impact the environmental permits. In the event that the modifications are not covered by the permit, the Contractor shall be responsible for providing the information necessary for VDOT to secure the required permit modification. All temporary vehicular watercourse crossings will require a water quality permit.

Inlet and outlet ends of culverts greater than 24 inches in diameter shall be countersunk a minimum of 6 inches below the natural stream bed. Inlet and outlet ends of culverts 24 inches or less in diameter shall be countersunk a minimum of 3 inches below the natural stream bed. If bedrock is encountered during installation or if steep slopes prohibit countersinking to the prescribed depth, then the work shall cease and the Contractor shall notify the Engineer.

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Geotextile bedding material shall be placed on the stream bed and stream banks prior to installation of the culverts and aggregate. The geotextile bedding material shall cover the stream bed and extend a minimum of one foot beyond the end of the culverts and rip rap material.

The culverts shall extend a minimum of one foot beyond the upstream and downstream toe of the aggregate placed around the culvert.

Timbers used for temporary vehicular watercourse crossing shall be 12-inch x 12-inch timbers and shall be anchored sufficiently to prevent displacement during use or storm events.

The Contractor shall maintain the temporary vehicular watercourse crossing until no longer needed.

When no longer needed, all material associated with the temporary vehicular watercourse crossing shall be removed in their entirety and the stream bed and stream banks restored to their previous elevations. Stream banks shall be reseeded and seed bed protected by the use of geotextile embankment stabilization fabric conforming to Section 245.03(d) of the Specifications.

IV. MEASUREMENT AND PAYMENT

Temporary Vehicular Watercourse Crossing will be measured and paid for on an each basis per location. This price shall include full compensation for furnishing and installing all materials including pipe, aggregate riprap, geotextile bedding material, timbers, providing pump around or stream diversion during construction and removal, and all labor, equipment, materials, and incidentals needed for construction, maintenance, and removal and disposal of the crossing when no longer required.

Payment will be made under:

| Pay Item | Pay Unit |
|--------------------------------|-----------------|
| Temporary Watercourse Crossing | Each |

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CONTRACT ID. NO.: C0000111466C01

[SP401-000100-01](#)

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
CLEARING AND GRUBBING AT BRIDGE APPROACHES

February 28, 2018

I. DESCRIPTION:

This work shall consist of clearing and grubbing at the future sites of bridge approaches in accordance with Section 301 of the Specifications, except as modified by this Special Provision. Clearing and Grubbing shall be performed prior to embankment construction in the vicinity of all bridge abutments, regardless of the height of the embankment fill and the height of the select backfill that will be placed behind the abutment.

II. PROCEDURES:

The Contractor shall remove stumps, vegetation, trees, brush, roots, perishable material and nonperishable, manmade objects (e.g., fences) in the vicinity of all proposed bridge abutments. Complete clearing and grubbing shall be conducted in advance of embankment fill placement in all areas where embankment fill will underlie the select backfill behind abutments.

All wet, loose, soft or disturbed soils that are present after clearing and grubbing operations are performed shall be removed or otherwise improved in accordance with Section 303 of the Specifications prior to embankment construction.

Clearing and grubbing shall be performed from the front toe of the embankment to the point behind the select backfill (see Longitudinal Limits in Figure 1). The lateral (transverse) limits of the clearing and grubbing shall extend from right toe-of-slope to left toe-of-slope.

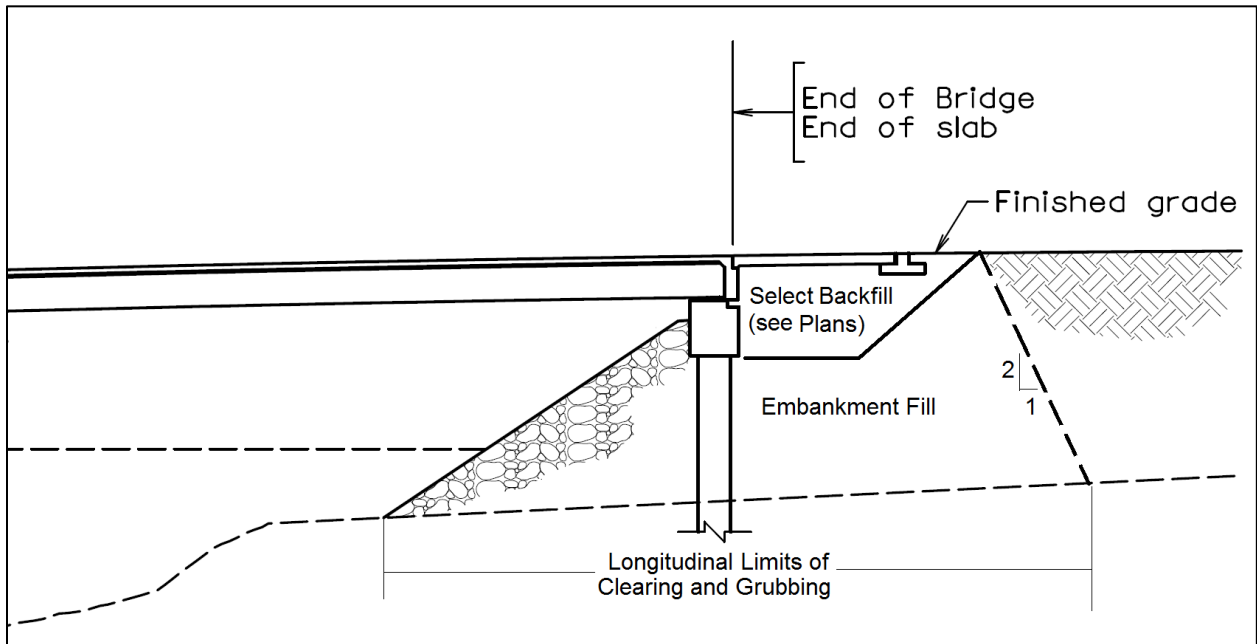


Figure 1
Limits of Clearing and Grubbing in the Vicinity of Bridge Abutments

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Not to scale

III. MEASUREMENT AND PAYMENT:

Measurement and Payment for this work will be included as part of the project's overall Clearing and Grubbing pay item in accordance with Section 301 of the Specifications. No separate payment will be made.

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[SP403-000100-00](#)

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
DYNAMIC PILE TESTING FOR END BEARING PILES (LRFD)

February 7, 2014; Reissued October 27, 2016_

I. DESCRIPTION

This work shall consist of dynamic testing of piles by the use of electronic monitoring equipment, reprocessing the data and furnishing a written report of the results.

II. EQUIPMENT

All equipment necessary for the dynamic monitoring such as gages, cables, etc. shall be furnished by the Dynamic Testing Consultant. The equipment shall conform to the requirements of ASTM-4945-08, Standard Test Method for High Strain Dynamic Testing of Piles.

III. PERSONNEL

The Contractor shall employ a Dynamic Testing Consultant to install or supervise the installation of the necessary equipment, to perform the dynamic monitoring and to prepare the Dynamic Testing Report.

The dynamic monitoring operator shall have a minimum of two years experience, at least one of which shall have been in data acquisition from high strain dynamic pile testing and successful performance on at least two projects in similar geotechnical conditions, or who has a Certificate of Testing: Basic Level or better on the Foundation QA Examination for Providers of Pile Dynamic Analyzer (PDA) Testing Services.

The Dynamic Pile Testing Report shall be prepared by a Registered Professional Engineer with a minimum of five years experience, at least two of which shall have been in data interpretation from high strain dynamic pile testing and successful completion of at least five projects in similar geotechnical conditions, or who has a Certificate of Interpretation: Advanced Level or better on the Foundation QA Examination for Providers of PDA Testing Services.

IV. TESTING

Dynamic testing shall be conducted in the presence of the Engineer and during the entire time piles are initially driven or redriven and during pile restrrike testing.

The Contractor shall notify the Engineer of the date and time for dynamic testing at least 48 hours prior to testing. Such notice shall be given during the normal work hours of the Department. If additional dynamic testing is ordered by the Engineer, the Contractor shall schedule the tests in cooperation with the availability of the Engineer.

Where possible, splices to the pile(s) shall be made prior to the start of driving so that dynamic testing can be performed without interruption.

The Contractor shall fasten a pair of transducers and a pair of accelerometers in place prior to testing. Piles shall be driven until the soil resistance measured is equal to or greater than the Nominal Pile Resistance as measured during driving shown on the plans and the required minimum tip elevation and penetration have been obtained or as directed by the plans, approved

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wave equation analysis or as approved by the Engineer. The Contractor shall remove the transducers and accelerometers after the dynamic testing is completed.

All signals resulting from initial testing and any restrrike testing shall be recorded and made available upon the request of the Engineer.

V. REPORTS

If requested by the Engineer, the following information shall be provided within 24 hours after completion of the testing: for each blow from the Dynamic Driving Records provide the Depth, Maximum Transferred Energy, Blows per Minute (include strokes, fuel settings, bounce chamber pressures, etc. as applicable), Maximum Tensile Stress, Maximum Compressive Stress and Pile Capacity.

The Contractor shall furnish the Engineer a Dynamic Pile Testing Report with the production pile order list.

The Dynamic Pile Testing Report shall include the following information for each pile tested:

Project identification and location

Location of test,

Date of test,

Description of the subsurface soil condition including log of nearest boring

Description of the test pile

Description of pile installation equipment, the lead type and any special installation equipment

Description of dynamic testing equipment, including model and software version(s) utilized in obtaining, evaluating and reporting dynamic data.

A copy of the Pile Driving Record

Pile Installation Details and Comments

Discussion of the hammer performance

Discussion of pile integrity

For at least every fifth blow from the Dynamic Driving Records: the Depth, Maximum Transferred Energy, Blows per Minute (including strokes, fuel settings, bounce chamber pressures, etc. as applicable), Maximum Tensile and Compressive Stress and Pile Capacity

A graphical presentation of the following: Pile Penetration versus Maximum Transferred Energy, Maximum Compressive Stress, Maximum Tension Stress and Mobilized Pile Capacity

The results from a signal-matching program that estimates static soil resistance and simulates static load test results including Mobilized Pile Capacity for the shaft and toe with the associated parameters used in the estimation

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A summary tabulation of the following information: Pile Location and Designation, Date Driven, Pile Tip Elevation, Visual Blow Count Rate, Transferred Energy, Hammer Efficiency, Maximum Driving Stresses, Dynamic Testing Mobilized Pile Capacity, Signal-Matched Mobilized Pile Capacity for Shaft, Toe and Combined.

Recommendations for production pile driving criteria based on the results of the testing program. Driving criteria shall include: blow count to obtain the required Mobilized Pile Capacity (include: stroke(s), fuel setting(s), bounce chamber pressure(s), etc. as applicable), criteria for controlling driving stresses in the pile including maximum allowable hammer stroke to control driving stresses in the pile and criteria for terminating driving in the event of high blow court before reaching the approved tip elevation. Pile driving criteria shall be approved by the Engineer.

VI. MEASUREMENT AND PAYMENT

Dynamic pile testing (End Bearing) will be measured and paid for at the contract unit price per each, which price shall be full compensation for providing all services of the testing consultant and dynamic monitoring operator as specified herein including providing, installing, monitoring and removing the dynamic testing equipment, for providing the data and preparing the written documentation specified, and for all tools, labor, materials, and incidentals necessary to complete the work.

Payment will be made under:

| Pay Item | Pay Unit |
|---------------------------------|-----------------|
| Dynamic Pile Test (End Bearing) | Each |

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SP515-000100-00

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
COLD PLANING (MILLING) ASPHALT CONCRETE OPERATIONS

July 12, 2016

I. DESCRIPTION

This provision shall govern cold planing (milling) asphalt concrete operations in preparation for pavement repair and/or pavement overlay. Cold planing of asphalt concrete pavement shall be performed according to Section 515 of the Specifications and the requirements herein.

II. GENERAL PROCEDURES

The Contractor is permitted to perform either regular pavement planing or performance pavement planing to the Contract specified depth or as directed by the Engineer in order to provide a uniform sound substrate prior to paving roadways designated in the schedules according to Section 315 of the Specifications, the requirements herein, or elsewhere in the Contract.

A. Regular and Performance Planing

The following general conditions apply to either type of cold pavement planing:

Limitations of operations for planing shall be performed according to Section 108.02 of the Specifications, other Contract specific requirements, and as specified herein.

Where the depth of planing designated in the Contract or directed by the Engineer is 2 inches or less, the Contractor shall have the option of planing the abutting lane or shoulder on alternate days or squaring up the planing operation at the end of each work shift. However, abutting lanes or shoulders shall be planed and squared up regardless of planing depth prior to holidays or any temporary shutdowns.

Where the depth of planing designated in the Contract or directed by the Engineer is greater than 2 inches in the Contract, the Contractor shall square up the planing operation at the end of each workday or plane adjacent lanes including abutting shoulders within the same day for the length of that day's planing operation.

The Contractor will not be permitted to plane a portion of the width of a travel lane, ramp, loop or shoulder and leave it unpaved and open to traffic. Abutting shoulders may also be planed during single and multiple lane planing operations. Planing operations shall be planned and performed to maintain positive drainage according to Section 315.05(c) of the Specifications.

In the event an emergency or an unforeseen circumstance such as equipment failure or breakdown occurs during the Contractor's operations and such emergency or unforeseen circumstance within his control prevents the Contractor from squaring up the planed surface on adjacent lanes prior to a holiday or temporary shutdown, any additional signage, traffic control devices or temporary markings or markers required to protect the traveling public shall be the Contractor's responsibility and at his expense.

Where uneven pavement joints exist either transversely or longitudinally at the edges of travel lanes, the Contractor shall provide advance warning signage and traffic control devices to inform the traveling public according to the details provided in the Contract for the scope of

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operation he is performing. The cost for such advance warning signage and traffic control devices shall be included in the cost of other appropriate items

Where appropriate according to Contract requirements and site specific conditions, the existing asphalt concrete layers shall be planed to permit the transition of the top course of the asphalt concrete overlay according to the details of the ACOT-1 Standard. Any sub-courses termination may be notched into the existing pavement or blended with the next course of pavement.

B. Performance Planing Only Limitations:

When the Contractor elects to performance plane on roadways specified to be planed to a depth of 2 inches or less, the Contractor shall performance plane only that amount of pavement which can be paved back within the time allowance specified herein for completion of planing the roadway or portion of roadway. The Contractor is required to perform pavement surface testing as specified in Section 515.04 of the Specifications to verify the Contractor has achieved the acceptable surface texture specified in that Section prior to opening the performance planed surface to traffic. Additional traffic control devices and signage required for the extended pave back time allowance specified herein for performance planing operations versus the traffic control devices required for the pave back operations for regular pavement planing operations specified herein shall be at the Contractor's expense.

III. ROADWAY CLASSIFICATION LIMITATIONS

The following restrictions, based on the type of roadway, shall apply:

A. All Interstates and other Limited Access Roadways including Ramps and Loops posted at 55 Mph or Greater

1. Regular planing and performance planing in multiple lanes

The Contractor shall plan, execute and maintain pavement planing operations to avoid trapping water on the roadway. On roadways with a combination of 3 or 4 lanes and shoulders (i.e. 2 travel lanes and 1 or 2 shoulders in one direction) where the travel lanes and shoulders will not be completely planed to drain prior to the start of paving operations, planing shall be performed so that water will not pond on the travel surface. When the Contract does not include the removal of the shoulder at the specific roadway planing location, the Contractor shall cut drainage outlets through the shoulder at locations the Engineer designates (excluding curb and gutter sections) for those portions of the planed roadway that are to be opened to traffic. The Contractor shall restore the shoulders to their original grades once paving operations are completed, unless otherwise directed by the Engineer. The cost for cutting and restoring roadway shoulders shall be included in the price bid for other items of work.

On roadways with a combination of 5 or more lanes and shoulders (i.e. 3 or more travel lanes and 2 shoulders in one direction, the extent to which the interior lanes shall be planed will be such that the planed portions can be repaved within the work-zone time limits unless provisions are made to mitigate the ponding of water (i.e., milling adjacent lane(s) and shoulders or cutting drainage outlets through the shoulder).

Ramps and exits shall be planed in such a manner that an even longitudinal joint (elevation difference of greater than 1 inch) is not left for vehicles to cross within the posted speed limits in a "run on" situation. To prevent this, the Contractor can plane ramps and exits to the extent that the joint line between new and existing pavement crossed by traffic is traversed at an angle close to ninety (90) degrees per the ACOT-1

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Standard for temporary transverse joints or can perform tapered planing along the ramp/exit longitudinal joint to provide a smooth transition for vehicles to cross, or can square up ramp or exit pavement with the adjacent mainline lane at the time of installation.

The following additional restrictions will apply to roadways where **regular pavement planing** is applicable:

- The Contractor will be limited in the case of regular pavement planing, whether in a single lane or multiple lane operation, to only that amount of pavement that can be paved back within 24 hours of completion of planing that roadway or portion of roadway.
- The Contractor shall pave all roadways, ramps and loops planed during the week before that weekend.
- On roadways with a combination of 4 or more lanes and shoulders (i.e. 2 or more travel lanes and 2 shoulders) in one direction, all travel lanes must be paved back before the weekend. Up to two thousand five hundred (2,500) feet of shoulder may be planed and left over the weekend provided the portion of planed shoulder left unpaved over the weekend is paved within 24 hours after the end of the weekend period.

The following additional restrictions will apply to roadways where **performance pavement planing** is planned by the Contractor:

- Performance planing may be performed in multiple lanes across the entire widths of the lanes up 4 miles of travel lane unless otherwise stated in the Contract. Performance planed travel lanes surfaces must be paved back within 96 hours from the end of the performance planing operation
- Where the Contractor decides to performance plane multiple lanes, the Contractor shall be responsible for furnishing and installing advance warning signage and traffic control devices to inform the traveling public according to the details provided in the Contract. Temporary pavement markings and markers used for lane demarcation on performance planed surfaces will be according to Section 704.04 of the Specifications and the *Special Provision for SECTION 704—PAVEMENT MARKINGS AND MARKERS* included in the Contract. The cost for such warning devices and advance signage required by multiple lane planing operations shall be included in the cost of other appropriate items unless otherwise specified in the Contract by a specific pay item(s) for separate payment.

B. Non-Limited Access Roadways with an ADT of 10,000 or Greater (Traffic Group XV and above) and a Posted Speed Limit of 45 Mph or Greater

1. Regular planing and performance planing in multiple lanes

The Contractor shall plan and proceed with the pavement planing operation to avoid trapping water on the roadway. On roadways with a combination of 3 or 4 lanes and shoulders (i.e. 2 travel lanes and 1 or 2 shoulders) in one direction where the travel lanes and shoulders will not be completely planed prior to the start of paving operations, planing operations shall be performed so water will not pond on the travel surface. When the Contract does not include the removal of the shoulder, the Contractor shall cut drainage outlets through the shoulder at locations the Engineer designates, excluding curb and gutter sections, for those portions of the planed roadway that are to be opened

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to traffic. The Contractor shall restore the shoulders to their original grades once paving operations are completed, unless otherwise directed by the Engineer. The cost for cutting and restoring the roadway shoulder shall be included in the price bid for other items of work.

On roadways with a combination of 5 or more lanes and shoulders (i.e. 3 or more travel lanes and 2 shoulders in one direction), the extent of pavement planing on the interior lanes shall be such that the planed surface can be repaved within the timeframe of the work-zone time limits unless provisions are made to mitigate the ponding of water (i.e. planing adjacent lane(s) to mitigate the ponding of water).

The following additional restrictions will apply to roadways where **performance pavement planing** is planned by the Contractor:

- Performance planing may be performed in multiple lanes across the entire widths of the lanes up a total of 4 miles of travel lane unless otherwise stated in the Contract.
- Performance planed travel lane surfaces must be paved back within 10 days from the start of the performance planing operation.
- Where the Contractor decides to performance plane multiple lanes, the Contractor shall be responsible for furnishing and installing advance warning signage and traffic control devices to inform the traveling public according to the details provided in the Contract. The cost for such warning devices and advance signage required by multiple lane planing operations shall be included in the cost of other appropriate items unless otherwise specified in the Contract by a specific pay item(s) for separate payment. Temporary pavement markings required by such operations will be handled according to Section 704.04 and the *Special Provision for SECTION 704—PAVEMENT MARKINGS AND MARKERS* included in the Contract.

The following additional restrictions will apply to roadways where **regular pavement planing** is applicable:

- The Contractor will be limited whether in a single lane or multiple lane operation, to only that amount of pavement that can be paved back within 24 hours of completion of planing that roadway or portion of roadway.
- The Contractor shall pave all roadways that have been regular planed during the week before that weekend.
- On roadways with a combination of 4 or more lanes and shoulders (i.e. 2 or more travel lanes and 2 shoulders in one direction), all travel lanes must be paved back before the weekend. Up to two thousand five hundred (2,500) feet of shoulder may be planed and left over the weekend provided the portion of planed shoulder left unpaved over the weekend is paved within 24 hours after the end of the weekend period.

C. All Other Roadways

1. Regular Pavement Planing (single or multiple lanes)

If the Contractor elects to perform regular pavement planing the Contractor will be permitted to leave up to two miles of travel lane open to the traveling public provided such planing (milling) is performed across the entire lane width. This same total length restriction will apply in cases where multiple-lane regular pavement planing is permitted

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in the Contract or allowed by the Engineer. The Contractor will be limited in the case of regular pavement planing, whether in a single lane or multiple lane operation, to only that amount of pavement that can be paved back within 96 hours of completion of planing that roadway or portion of roadway.

2. Performance Pavement Planing

When the Contractor elects to performance plane roadways specified to be planed to a depth of 2 inches or less, the Contractor shall plane only the amount of pavement that can be paved back within 14 calendar days of completion of planing that roadway or portion of roadway. The Contractor is required to perform pavement surface testing as specified in Section 515.04 of the Specifications to verify the Contractor has achieved the acceptable surface texture prior to opening the performance planed surface to traffic. The additional traffic control devices and signage required for the 14 calendar day pave back operation allowance for performance planing operations shall be at the Contractor's expense.

Temporary pavement markings required by such operations will be handled according to Section 704.04 and the *Special Provision for **SECTION 704—PAVEMENT MARKINGS AND MARKERS*** included in the Contract.

Roadways on which the roadway edges (i.e. edge milling) are to be planed shall be paved back within 10 days from the completion of the planing operation.

IV. MEASUREMENT AND PAYMENT

Measurement and payment will be according to Section 515.05 of the Specifications.

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SP522-000130-02

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
TREE REMOVAL TIME OF YEAR RESTRICTION FOR ROOSTING BAT HABITAT

June 6, 2022

I. Background

This project is in an environmentally sensitive area for bat species protected under the Endangered Species Act (16 USC 1531 et seq., hereinafter “the Act”) and the Virginia Endangered Species Act (29.1-563 et seq.). The removal of trees greater than or equal to 3 inches diameter at breast height (DBH) is restricted, as it may result in adverse impacts to bat species by removing roosting habitat during summer months, and is prohibited during the Time of Year Restriction period.

Tree removal activities associated with this project shall conform to Section 107.01 of the Specifications, the Act, and this Special Provision.

II. Requirements

1. **Time of Year Restriction.** No trees greater than or equal to 3 inches DBH shall be removed from April 1 to November 14 unless otherwise allowed by the Engineer as approved by the District Environmental Manager.
2. Unless other restrictions exist in the Contract prohibiting tree removal, the Contractor is allowed to proceed with tree removal operations outside of the Time of Year Restriction in accordance with Section 601 of the Specifications and within the established clearing limits as shown on the plans, and as directed by the Engineer.
3. **Notification and Cessation of Work**

If the Contractor does not comply with this requirement, the work may be suspended and administered in accordance with Section 108 of the Specifications.

III. Measurement and Payment

The cost of complying with this Specification shall be included in the contract unit price of other items.

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SP700-000180-03

September 29, 2020

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
MODIFICATIONS TO AASHTO'S SIGN STRUCTURE SPECIFICATION

I. GENERAL REQUIREMENTS

Lighting (conventional and high mast), signal (overhead, mast arm and span wire), pedestal poles, overhead (span, cantilever and butterfly) sign structures, and ITS structures (camera poles, dynamic message signs (DMS), etc.) shall conform to the requirements of the AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 6th Edition (LTS-6), 2013 with 2015 and 2019 interims* as modified by this Special Provision. Any AASHTO Specification optional design parameter noted as “may be used at the discretion of the owner” that are not addressed in this document shall not be used for design.

Square tube sign post (STP-1 and STP-2), wood post, SSP-VA and SSP-VIA structures shall be provided in accordance with the requirements as shown in the Standard Drawings.

II. WIND LOADING (LTS-6 Article 3.8 and Appendix C)

1. The alternate method for wind pressures provided in AASHTO Appendix C shall be used. Linear interpolation between wind contours is not permitted. The next higher contour shall be used for design. Reduced forces shall not be used for free swinging traffic signal and free swinging sign wind loadings.
2. **LTS-6 Article C.2** is supplemented with the following: Wind speeds using 50-year mean recurrence shall be used for all conventional light poles, high mast light poles, ITS device support poles, and overhead sign structures (span, cantilever and butterfly).
3. Mast arm signal poles, mast arms, and strain poles shall be designed using the following wind speeds:

| District | Design Wind Speed for strain poles, mast arms, and mast arm poles |
|--|--|
| Bristol, Salem, Lynchburg, Staunton and Culpeper | 70 mph |
| Richmond, Northern Virginia and Fredericksburg | 80 mph |
| Hampton Roads | 90 mph |

Ancillary structures procured under regional signal contracts that encompass multiple districts shall be designed for the District with the greatest wind speed within that Region.

Mast arm signal pole and strain pole foundations shall be designed for wind speeds at the foundation location using the 25-year mean recurrence.

4. For special wind regions in Bristol District shown in Figure 3.8.3-2 of LTS-6, the selection of the design wind speed shall consider localized effects. The minimum design wind speed for 50 year mean in these areas is 90 MPH, 25 year mean in these areas is 80 MPH and 10 year mean in these areas is 70 MPH.

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5. For structures elevated above the surrounding terrain (e.g. bridge mounted light pole, overhead sign, and other structures), the height factor shall be increased to account for the increased wind effects.

III. STEEL DESIGN

1. **Laminated Structures (LTS-6 Article C5.1):** Laminated or multi-ply structures shall only be used in tapered sections.
2. **Holes and Cutouts, Unreinforced and Reinforced (LTS-6 Article 5.14.5):** The location and size of hand holes and cutouts shall be in accordance with the details shown in the Standard Drawings. For high mast light poles, the width of unreinforced and reinforced holes and cutouts in the cross-sectional plane of the tube shall not be greater than 50 percent of the tube diameter at that section.
3. **Welding:** A connection detail using a full penetration groove weld with a backing ring may be considered for all traffic structures. For tubes 18" diameter and greater, the backing ring shall be attached at the top and bottom face of the ring using a continuous fillet weld. For tubes less than 18" diameter, the backing ring shall be attached at the bottom face using a continuous fillet weld and the top shall be caulked to provide a thick durable continuous seal. The caulk shall be a durable material approved by the Engineer which is formulated for this type of Industrial application.
4. **Diameter:** Mast arm signal pole structures shall have the following maximum column and arm outside diameters, unless otherwise approved by the Engineer.

| Configuration | Arm Length | Design Loading | Max. column diameter at base of column | Max. arm diameter at base of arm |
|---------------|---|---|--|----------------------------------|
| Dual arm | Length of one arm exceeds 70 feet or total length of both arms exceeds 130 feet | Varies (Project specific loads will be provided on the Plans) | 22 inches | 20 inches |
| | All other dual-arm structures | Design loading does not exceed Standard Drawing MP-3 | 20 inches | 18 inches |
| Single arm | > 75 feet | Varies (Project specific loads will be provided on the Plans) | 22 inches | 20 inches |
| | ≤ 75 feet | "Case 2" loading as per Standard Drawing MP-3 | 22 inches | 20 inches |
| | | "Case 1" loading as per Standard Drawing MP-3 | 20 inches | 18 inches |

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IV. FATIGUE DESIGN

1. **Fatigue Importance Categories (LTS-6 Article 11.6):** The following fatigue importance categories shall apply to structures:

| Fatigue Importance Categories | | |
|---|-------------------------------------|--|
| Structure Type | Span Length¹, ft. | Fatigue Category |
| All structures supporting dynamic message signs or partial dynamic message signs ³ | All span lengths | Category I |
| Overhead sign span structure | > 150 | Category I |
| | ≤ 150 | Category II |
| Overhead sign cantilever structure | > 50 | Category I |
| | ≤ 50 | Category II |
| Overhead sign butterfly structure | All span lengths | Category II |
| Signal mast arm structure ² | > 75 | Category I and an approved mitigation device |
| | 50 to ≤ 75 | Category II |
| | < 50 | No fatigue design required |
| Overhead signal structure | > 190 | Category I |
| | ≤ 190 | Category II |
| High mast light poles | All lengths | Category I |
| Signal span wires, conventional lights poles and ITS device support poles (excluding DMS) | | No fatigue design required |

¹Span length is defined as center-to-center of column(s) for span structure and face-of-column to tip of arm for cantilever and signal structures.

²For twin mast arms, the pole, arms and connections shall be designed for the applicable fatigue category for the longest arm attached.

³For signs that are a combination of primarily static sign panels and thin dynamic message elements, if less than 40% of the sign consist of thin dynamic message elements, the sign may be treated as a static sign for the purposes of determining appropriate fatigue category as long as the thickness of the partial dynamic sign does not exceed 14 inches. A special design is required for the attachment of these structures; the weight and thickness of the thin dynamic message sign element shall be included in the structural analysis.

2. **Mitigation Devices (LTS-6 Article 11.6 and 11.7.1):** Mitigation devices shall not be used in lieu of designing for fatigue. Approved mitigation devices shall be used for Signal Mast Arm Structures greater than 75 feet in addition to Fatigue Category I design.
3. **Aluminum light poles (LTS-6 Article 11.6 and 11.7.1):** Internal first and second mode vibration dampeners shall be provided and installed according to the manufacturer's instructions in all cases. External dampeners may be used if approved by the Engineer.
4. **Galloping Loads (LTS-6 Article 11.7.1):** Galloping loads shall not be considered in the design of overhead sign cantilevered structures with four chord trusses, signal mast arm structures, and multi-chord overhead signal structures.

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5. **Truck-Induced Gust Loads (LTS-6 Article 11.7.1.3):** Truck induced gust loads shall not be considered in the design of signal mast arm and overhead signal structures.
6. **Vertical Deflection (LTS-6 Article 11.8):** The vertical deflection of the free end of the arm for overhead sign cantilevered structures due to the wind load effects of galloping or truck-induced gusts shall not exceed 8".

V. FOUNDATION DESIGN

The AASHTO Standard Specifications for Highway Bridges, 1996, and the 1997 and 1998 Interim Specifications, as referenced in the AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals*, are modified as follows:

1. **Geotechnical Design:** The factor of safety shall be as follows:

| MINIMUM FACTORS OF SAFETY¹ | | | |
|--|---|----------------------------------|-----------------------|
| Drilled Shaft | | | |
| | Overhead Sign Structures and all other types of ancillary structures except for Mast arm traffic Signals | Mast arm traffic Signals | Spread Footing |
| Axial resistance/ Bearing pressure | 1.75 | 1.75 | 2.0 |
| Torsion/Sliding/Skin Friction | 1.75 ² | 1.3 ² | 1.2 ³ |
| Overturning (Broms Method) | See horizontal deflection limits | See horizontal deflection limits | 1.5 |

¹The factors of safety shown above already account for the 1.33/1.40 group overload/overstress factor. No reduction shall be applied to the design loading used in the analysis.

²Torsion Resistance may be evaluated using the rational method as presented in FHWA-NHI-10-016 Drilled Shafts for Construction Procedures and LRFD design methods. A value of 1.0 shall be used in lieu of the resistance factors.

³Passive resistance shall be reduced by 50% to limit foundation movement.

In capacity calculations for the foundation design of a drilled shaft, the soil resistance of the top 2.0 feet shall be neglected in the analysis for torsion/skin friction/overturning. Soil resistance from the shaft bottom shall not be included in either torsional or axial resistance of the shaft.

2. **Horizontal Deflection Limits:** In lieu of Broms method, COM624P or other commercially available software may be used to evaluate the overturning of shafts and to estimate shaft deflections. For mast arm signals and span wire signals, the total horizontal deflection shall be limited to 0.75 inches at the ground level and the tip of the pile deflection shall not exceed -0.25 inches. For other structures, the total horizontal deflection shall be limited to 0.50 inches at the ground level and the tip of the pile deflection shall not exceed -0.15 inches. The loading used in the analysis shall not be reduced by the allowable overload/overstress factor. The shafts shall be modeled such that the nonlinear flexural rigidity (non-linear EI, or "cracked" section) is accounted for when the horizontal deflections are calculated.
3. **Reinforcement:** Where tremie placement of concrete is anticipated, a minimum spacing of 5 inches or 10 times the size of the largest coarse aggregate whichever is greater shall be provided in both horizontal and vertical direction. For dry shafts, a smaller space of 5 times the size of the largest coarse aggregate may be considered. A dry shaft is when the amount of standing water in

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the base of the shaft prior to concreting is less than or equal to 3 inches and water is entering the shaft at a rate of less than 12 inches/hour.

4. **Drilled Shafts:** For mast arm traffic signals with an arm 60 feet or greater, the minimum length of drilled shaft shall be 10 feet of embedment unless a spread footing is proposed.

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[SP704-000120-00](#)

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
INLAID PAVEMENT MARKERS

August 26, 2019

I. Description

This work shall consist of furnishing and installing inlaid pavement markers in accordance with the Contract and manufacturer's installation instructions. Snow-plowable raised pavement markers conforming to Section 704.03(d)1 of the Specifications shall not be used in the Work.

II. Materials

1. **All components** of the inlaid pavement marker shall be listed on the Department's Approved List 22.
2. **Retroreflectors** shall conform to ASTM D4383. The color and directional properties (one-way or two-way) of retroreflector lenses shall conform to Standard Drawing PM-8.
3. **HOLDERS** shall be made of polycarbonate plastic that are nominally 4.75 inches wide (excluding breakaway tabs), can hold retroreflectors from the Department's Approved List 22 under Inlaid Pavement Markers, comes with two breakaway positioning tabs, and will hold the retroreflector just below the pavement surface when installed with the breakaway positioning tabs resting on the pavement surface.

III. Procedure

The Contractor shall furnish the manufacturer's recommendations for adhesives and installation procedures to the Department before installing the markers.

1. Location and Spacing

The Contractor shall not install markers on bridge decks.

The edge of the groove shall be at least 2 inches from pavement joints and cracks, ensuring that the finished line of markers is straight in accordance with the tolerance for pavement markings specified in Section 704.03 of the Specifications. Offset from the longitudinal joint shall take precedence over straightness of the line of markers.

2. Installation

Retroreflectors shall be affixed to holders, using an adhesive from the Department's Approved List 22 (Inlaid Pavement Markers) prior to installation.

The Contractor shall cut tapered grooves and plunge cuts into the concrete or final course of asphalt. Grooves and plunge cuts shall be at the dimensions specified in Figure 1, unless specified otherwise in the manufacturer's installation instructions. The groove length may be shortened to 54 inches on sharp curves if approved by the Engineer.

Tapered grooves and plunge cuts shall be cut using diamond blades that can accurately control the groove dimensions, resulting in smooth uniform tapers and smooth groove bottoms and ensuring the pavement does not tear or ravel. The Contractor shall remove all dirt, grease, oil,

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loose or unsound layers, and any other material from the groove which would reduce the bond of the adhesive. Pavement surfaces shall be maintained in a clean and dry condition until the marker is placed.

Holders shall be installed in the same shift as grooving.

The epoxy adhesive shall be thoroughly mixed until it is uniform in color, and applied in accordance with the manufacturer's installation instructions. The Contractor shall partially fill the plunge cut with sufficient epoxy adhesive such that the epoxy adhesive bed area is equal to the bottom area of the holder. The Contractor shall then set the holder in the epoxy adhesive such that the breakaway tabs are resting on the road surface, the holder is centered in the cut, and then fill in additional epoxy adhesive if necessary so the entire perimeter of the holder is completely surrounded in epoxy, with the epoxy level with the edge of the holder in accordance with the manufacturer instructions.

The Contractor shall remove all adhesive and foreign matter from the face of the retroreflector or replace the retroreflector if adhesive and foreign matter cannot be removed. The marker shall be replaced if it is not properly positioned and adhered in the plunge cut.

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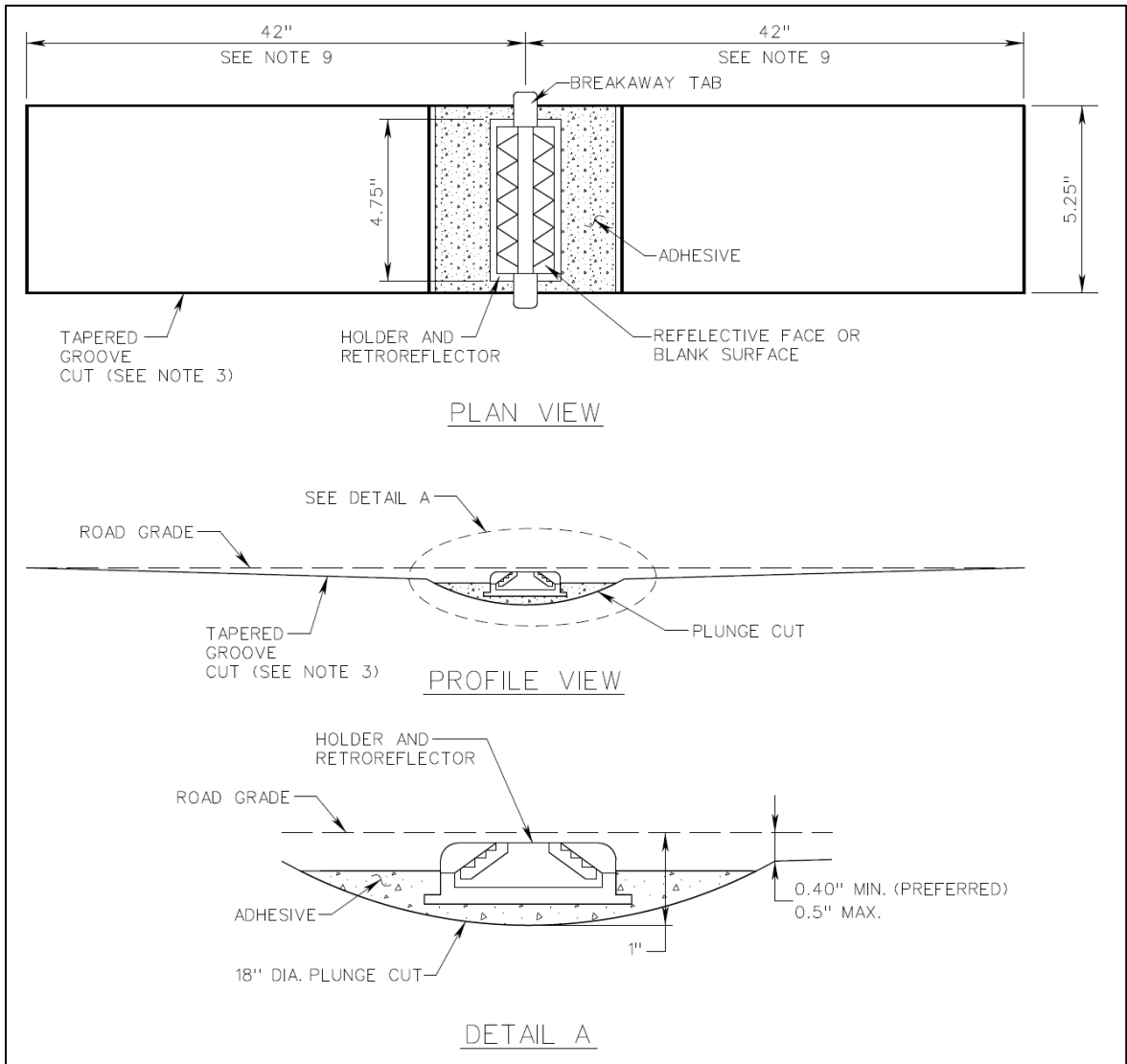


Figure 1: Installation of Inlaid Pavement Marker

IV. Measurement and Payment

Inlaid Pavement Marker will be measured in units of each and will be paid for at the Contract each price. This price shall include surface preparation, furnishing, installing, retroreflectors, pavement cutting, adhesives, and holder.

Payment will be made under:

| Pay Item | Pay Unit |
|--|-----------------|
| Inlaid Pavement Marker (type pavement) | Each |

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SP801-000100-01

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
LANE CLOSURE COORDINATION (LCC)/LANE CLOSURE IMPLEMENTATION (LCI)

September 20, 2017

I. General Requirements

This work shall consist of coordinating and communicating lane closure operations through the local Transportation Operations Centers (TOC's). The Contractor shall coordinate lane closures in accordance with this Special Provision, and only implement lane closures with approval from the Department.

II. Training

The Contractor shall have individuals trained to input work-zone information into the Department's LCC/LCI system, currently LCAMS and VaTraffic, on a weekly basis and to update as needed. These individuals shall be able to speak, understand, read, and write English, and be able to operate a computer. No advanced computer skills are needed to use the LCAMS or VaTraffic systems. The Contractor shall have a computer with internet connectivity and email capability.

The Contractor shall contact the Regional TOC Work Zone Lane Closure (LCAMS/VaTraffic) Coordinator to initiate system access and schedule training, when necessary. The Department requires a 10 business-day notice to schedule classroom training for LCAMS. The Contractor's designated individuals shall complete the courses Introduction to VaTraffic, VaTraffic Reports, VaTraffic Planned Events, and VaTraffic Work Zones. LCAMS and VaTraffic training for the individuals shall be completed prior to the Notice to Proceed date.

III. Lane Closure Process

1. **Lane Closure Coordination Process.** All lane closures shall be entered as precisely as possible into the Lane Closure Advisory Management System (LCAMS) and VaTraffic no later than 8 AM on Thursday of the week prior to the planned lane closure, and updated as needed. For the purposes of this Special Provision, a week starts on Sunday. If this submission deadline changes (e.g., for weeks involving a holiday), the Engineer will notify the Contractor at least one week in advance. Final approval for the lane closure will be issued by the Engineer. All fields in LCAMS and VaTraffic must be properly filled out.

A. **Point of Contact.** The data fields labeled "Requesting Org POC" in LCAMS and "Point of Contact" in VaTraffic shall contain the name and email address of the person physically entering the request into LCAMS.

B. **Conflict Resolution.** LCAMS will identify and flag most conflicts, and will automatically assign priority as first-come, first-serve. The Contractor has the right to contact the higher-priority party and attempt resolution with them, provided the Contractor submits the final resolution to the Engineer no later than 5 PM on Thursday of the week prior to the planned lane closure. The Engineer will handle all unresolved conflicts between requests and other events according to the priorities listed below, with the highest priority item first. If some or all requests involved in the conflict are the same priority level, conflict resolution will be on a first-come, first-serve basis.

(1) **Emergency Work.** Work that if not done "will result" in damage to a motorist vehicle or infrastructure, or danger to public health and safety.

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- (2) **Lower Priority Items Previously Delayed.** Work that while considered a lower priority, if perpetually delayed could result in severe consequences.
 - (3) **Urgent Work.** Work that if not done “may result” in damage to the motorist vehicle or infrastructure, or danger to public health and safety.
 - (4) **Contractual Obligated Work.** Work that is expected to be accomplished “on-time, on-budget”.
 - (5) **Weather Dependent Work.** Work that is dependent on the temperature and clear or dry conditions.
 - (6) **Routine Maintenance Work.** Work that is routine in nature that can be rescheduled and moved around, within limits, without undue risk.
- C. The request shall be supported by the Schedule of Record, and the Engineer may deny requests which are not. The Contractor will be allowed to request lane closures to accommodate potential weather delays.
- D. The Contractor may revise his entries in LCAMS and VaTraffic after the Thursday deadline subject to the approval of the Engineer and the conflict resolution requirements herein.
- 2. **Lane Closure Implementation Process.** The Contractor shall notify the Regional TOC no later than 15 minutes, but no earlier than 45 minutes, prior to installing the lane closure, or no later than 15 minutes prior to scheduled start time if lane closure is delayed or canceled. The Contractor shall notify the TOC and update VaTraffic of any changes in lane-closure impact during the execution of work. The Contractor shall notify the Regional TOC no later than 15 minutes after the lane is reopened to traffic.
 - 3. **Emergency Lane Closure.** If an Emergency Lane Closure is required, the Contractor shall coordinate directly with the TOC regarding the lane closure as soon as the location and size of the lane closure is known. An Emergency Lane Closure is defined as road work which could not have been anticipated and is required to protect the public from immediate, severe harm, and has a priority as defined by Section III-1B(1).

IV. Measurement and Payment

Lane closure coordination will not be measured or paid for separately, but the cost thereof shall be included in the price of other items.

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
SECTION 105.06—SUBCONTRACTING
(FEDERAL FUNDED PROJECTS)

February 9, 2017

SECTION 105.06—Subcontracting of the Specifications is amended to include the following:

- (d) According to Commonwealth of Virginia Executive Order 20, the Contractor is encouraged to seek out and consider Small, Women-owned, and Minority-owned (SWaM) businesses certified by the Department of Small Business and Supplier Diversity (DSBSD) as potential subcontractors and vendors. Further, the Contractor shall furnish and require each subcontractor (first-tier) to furnish information relative to subcontractor and vendor involvement on the project.

For purposes of this provision, the term “vendor” is defined as any consultant, manufacturer, supplier or hauler performing work or furnishing material, supplies or services for the contract. The Contractor and, or subcontractor (first-tier) must insert this provision in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). The applicable requirements of this provision are incorporated by reference for work done by vendors under any purchase order, rental agreement or agreement for other services for the contract. The Contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or vendor.

The submission of a bid will be considered conclusive evidence that the Contractor agrees to assume these contractual obligations and to bind subcontractors contractually to the same at the Contractor’s expense.

When an approved Form C-31 “Subletting Request” is required according to IIM-CD-2013-06.01, the Contractor shall indicate on the Subletting Request if a subcontractor is a certified DBE or SWaM business.

The Contractor shall report all DBE, SWaM, and Non SWaM vendor payments quarterly to the District Civil Rights Office. The Contractor shall provide the information in a format consistent with Form C-63, Vendor Payment Compliance Report, subject to the approval of the Engineer.

DBE Participation and reporting shall be in accordance with the Special Provision for Section 107.15 (Use of Disadvantaged Business Enterprises).

If the Contractor fails to provide the required information, the Department may delay final payment according to Specification Section 109.10 of the Specifications.

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
PREBORING PILES

October 28, 2021
0095-020-818, B660, C501

I. DESCRIPTION

This work shall consist of all labor, materials, equipment, and services necessary to perform all operations to complete the preboring pile installation in accordance with the Specifications, this Special Provision and with the details and dimensions shown on the plans. Preboring piles are reinforced concrete, deep foundation elements, cast-in-place against insitu material through drilled holes.

II. SUBMITTALS

Installation & Drilling Sequence Plan

The Contractor shall develop a Prebored Pile and Rock Socket installation, drilling sequence plan and the backfill sequence plan. The plan shall include a list of all equipment that will be used, drilling sequence, methods of monitoring verticality of the prebored holes, details of casing installation and removal methods, methods of cleaning the prebored holes cuttings, methods to support the steel piles during installation (means of centering), and methods to be used for placement of concrete. Sand backfill, when called for in the plans, its backfill method and the placement sequence shall be clearly stated. This plan shall be submitted to the Engineer at least 30 calendar days before preboring is scheduled to begin.

III. MATERIALS

A. Concrete

Concrete shall be T3 Tremie Seal conforming to the requirements of Section 217 of the Specifications, except as noted herein.

B. Sand

Sand backfill, when called for in the Plans, shall be Grade A, B or C per Section 202.03 of the Specifications.

C. Reinforcing Steel

H-piles shall be structural carbon steel conforming to the requirements of ASTM A709, Grade 50, and shall be of the types and sizes indicated on the Plans.

D. Casing

Casing shall be steel, rigid, smooth, clean, watertight, and of ample strength to withstand both handling and driving stresses and to withstand pressure from both concrete and the surrounding earth materials. The outside diameter of casing shall not be less than the specified size of the preboring pile. The thickness of steel casings shall not be less than 3/8 inch. The dimensions are subjected to American Pipe Institute tolerances applicable to regular steel pipe.

Casing pipe shall conform to ASTM A 252, Grade 2, for temporary applications. Splices for casing if needed shall be welded in accordance with Section 407.04 of the Specifications with no interior splice plates, producing a true and straight casing. All welding shall be in accordance with ANSI/AWS D1.1.

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IV. PROCEDURES

1. The foundation shall be graded to bottom of footing elevations prior to initiating preboring activities.
2. Temporary casing shall be installed to facilitate pile placement. The casing can be removed after the pile is placed and driven before placing concrete, provided the hole remains stable until the concrete is placed. In no case shall a hole be left uncased for more than 4 hours.
3. Select Steel H-Piles shall be placed in prebored hole to a depth of 22 feet below the bottom of footing elevations as shown on plans, unless otherwise directed or authorized by the Engineer. Augering equipment shall be capable of working at depths 20 percent beyond the minimum pre-bore depth, as specified on the plans.
4. Bottom of the hole shall be level and clean before setting the pile and driven to the required nominal axial resistance. A weighted tape or some other method of sounding the bottom of the hole shall be used to confirm cleanliness.
5. The Contractor shall provide documentation to the Engineer that each prebored hole was constructed in accordance with the Plans and Special Provision. This documentation shall, at a minimum, include the elevations, dates and times bottom of prebored hole elevations were encountered, the dates, times, and method of bottom cleanliness determinations, dates and times the H-piles were placed into the holes and driven, beginning and ending dates and times of concrete placement, and all notable observations that occurred during construction. The tip elevation of the H-pile shall be recorded. The Contractor shall keep the Engineer continually apprised of all preboring construction activities in order to enable as much visual oversight by the Engineer as possible.
6. Prebored holes shall be supported with temporary casing to stabilize them and prevent material from falling in. Any open holes that cave-in or otherwise degrade significantly shall be remediated to the satisfaction of the Engineer.
7. Following drilling, the pile shall be placed in the center of the prebored hole and driven to the required nominal axial resistance, braced in position if required, followed by concreting with Concrete Class T3 Tremie Seal. T3 concrete shall be placed by tremie pipe discharging at the bottom of the prebored hole. The bottom of the tremie or pump shall remain at least 5 feet below the concrete level at all times until the T3 concrete is filled to the required elevations/depths shown in the plans. The tremie method may be accomplished using a pump and a minimum 4 inch diameter hose. The Contractor's means and methods shall result in uniform concrete (i.e. no soil contamination within the concrete).
8. The bottom of the casing shall at all times remain at least 3 feet below the top of concrete during concrete placement.
9. All prebored holes must be filled with Concrete Class T3 Tremie Seal to the depths/elevations as shown on plans the same day the excavation at that location is finished.
10. Sand backfill, when called for in the plans, shall be placed after the 36 hour period of the Concrete Class T3 placement. The sand backfill shall be placed dry and loose in the remaining depth of the prebored hole and shall extend to the bottom of the pile cap.
11. In order to protect the fresh concrete in the first 36 hour period, no drilling within 6'-0" to previously concreted piles shall be allowed.

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V. MEASUREMENT AND PAYMENT

Preboring Pile will be measured in linear feet and will be paid for at the Contract linear foot price. This price shall include temporary casing (as necessary); drilling (excavation) of soil; dewatering; removal of excavated material; cleaning and disposing of cuttings; keeping the pile centered in the hole; Class T3 Concrete backfill; sand backfill when called for in the Plans; and furnishing all labor tools, equipment, materials and incidentals necessary to complete the prebored piles.

Payment will be made under:

| Pay Item | Pay Unit |
|--------------------|-----------------|
| Preboring pile 12" | Linear foot |

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
TRUCKS ENTERING HIGHWAY SYSTEM

October 23, 2023
0095-020-818, B660, C501

I. GENERAL DESCRIPTION

This work shall consist of providing, installing, maintaining, and removing a Trucks Entering Highway System used to detect construction vehicles exiting a construction entrance, and alert drivers that construction vehicles that may have a slow acceleration are entering back into the roadway.

II. MATERIAL

Trucks Entering Highway Systems may be trailer mounted or post mounted systems. Trailer mounted and post mounted equipment may be used interchangeably.

1. Signs and Flashing Warning Beacons

- a. Signs shall be fabricated as per Section 512.
- b. Flashing warning beacons shall consist of two 12-inch yellow traffic signal head indications. Traffic signal head indications and black backplates shall be as per Sections 238 and 703 of the Specifications.
- c. The flashing beacons shall flash for the duration of when a vehicle is detected at the construction entrance, and shall cease after a determined amount of time as approved by the engineer. The yellow beacons shall flash alternately in "wig-wag" fashion, with a 50% on / 50% off ratio, at a rate of 50-60 times per minute.
- d. Signs displayed shall be:
 - i. Sign 1 with Flashing Warning Beacons
 1. TRUCKS ENTERING HIGHWAY (W11-V4) 48" x 48", with fluorescent orange background.
 2. WHEN FLASHING (M5-4(V) Modified) 42" x 24" with fluorescent orange background.
 - ii. Sign 2
 1. TRUCKS ENTERING EXITING (W11-V4 Modified) 48" x 48", with fluorescent orange background.
 2. LEFT LANE (M5-4(V)) 36" x 30" with fluorescent orange background.
 - iii. Sign 3
 1. CONSTRUCTION ENTRANCE X (W11-V2) 48" x 48", with fluorescent orange background.
 2. 1/2 MILE LEFT (M5-4(V) Modified) 42" x 24" with fluorescent orange background.
- e. Sign mounting height and lateral placement shall be as per the VWAPM.
- f. As an option, the system may use a programmable changeable message sign (PCMS) to display the trucks entering highway message at no extra cost.

2. Power Supply

Both the flashing warning beacons and the Vehicle Detection System shall operate from their own self-contained power supplies with the capability of connecting to an external 110 VAC electrical power supply. When operating from self-contained solar power

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supplies, the battery backup shall be capable of operating for 7 continuous days at 77 degrees F without solar array assistance.

3. Vehicle Detection System (VDS)

a. Detector Hardware

- i. The detector shall use a Federal Communications Commission (FCC)-certified, low-power microwave radar beam to detect vehicle presence.
- ii. The detector shall determine vehicle presence by the return or reflection of radar output waves and, upon this return the VDS, shall generate data and/or a contact closure signal that corresponds to vehicle presence.
- iii. The detector shall have the ability to self-tune and allow manual calibration via supplied vendor software. The VDS shall be capable of auto-calibration and auto-configuration, and shall not transmit any signals outside its FCC-approved frequency. Provide a setup program that allows the operator to define detection zones within the detector's field of view. The detector shall automatically configure zones, requiring minimal external tuning. The unit shall not be adversely affected by varied weather conditions, such as rain, fog, heat, wind, dust and debris.
- iv. The VDS setup program shall enable the operator to select whether the data is output as contact closures emulating standard loop detector outputs, and/or as accumulated statistical data using detector serial ports
- v. The VDS sensor shall have a minimum 100-foot detection range with a viewing angle that is 65 degrees or greater vertical and seven degrees or less horizontal, and detection capability starting within 6 feet horizontally from the sensor pole. The VDS sensor shall have a minimum operating frequency of 24.0 GHz (K-band).

b. VDS Communication Standards

- i. The VDS hardware shall meet the requirements in the FCC's 2005 Code of Federal Regulations (CFR), Title 47, Part 15. The detector shall not interfere with any known equipment. The detector shall be FCC certified and the FCC's identification number shall be displayed on an external label. The detector shall transmit within a frequency band of 24 - 24.25 gigahertz, or another FCC approved spectral band.

c. The VDS or subcomponents shall automatically recover from power disruptions after power is restored. All programmable system settings shall return to their previous configurations and the system resumes proper operation.

d. The VDS shall have a way of detecting false calls and not let the flashing warning beacons to activate until it is verified that a construction vehicle is exiting the construction entrance.

4. Trailer

- a. Trailers shall be either Virginia highway orange (DuPont Color No. LF74279 AT or color equivalent) or federal yellow. The back traffic facing trailer frame, where the signal and brake lights are located, shall be fully covered with 2-inch high retroreflective sheeting conforming to Section 247.02(c) of the 2020 VDOT Road and Bridge Specifications. The sheeting shall have alternating 11-inch wide vertical red stripes and 7-inch wide vertical white stripes.

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- b. The trailers and all mounted equipment shall be designed to comply with section 700.03 – General Requirements of the 2020 VDOT Road and Bridge Specifications.
- c. Shall have adequate safeguards to prevent unauthorized entry to the control equipment.
- d. Trailers located within the clear zone shall be delineated with a minimum of four (4) Group 2 Drums, installed in advance of the device and spaced appropriately for the posted speed limit.

5. Post

The post and all mounted equipment shall be designed to comply with section 700.03 – General Requirements of the 2020 VDOT Road and Bridge Specifications.

III. INSTALLATION, OPERATION, AND REMOVAL

Trucks Entering Highway Systems shall be installed and set up prior to the start of regular use of the construction entrance by construction vehicles. The manufacture shall be on-site during setup and any required testing.

The Contractor shall calibrate the vehicle detection so that the System reliably initiates flashing when a vehicle is about to exit the construction entrance, and terminates flashing when the vehicle has completed its entrance onto the highway as approved by the Engineer. The System shall not flash in response to through traffic on the highway, or vehicles exiting the highway into the construction entrance. The Contractor shall demonstrate the system’s functionality in the presence of the Engineer.

The Contractor is responsible for maintaining the Trucks Entering Highway System (including replacing malfunctioning detectors or burnt-out signal indications if necessary) by the beginning of the next work day for the duration of when that Construction Entrance is being regularly used. The Contractor shall remove the Trucks Entering Highway System when the construction entrance will no longer be regularly used as approved by the engineers.

IV. MEASUREMENT AND PAYMENT

Trucks entering highway system will be measured in units of each and will be paid for at the Contract each price. This price shall include signs, signal heads and backplates; all required power and data cables; Vehicle Detectors; posts; trailers; maintenance; operation; removal; operational software package(s) and firmware(s); supplies; support; furnishing and installing remote cabinets with TVSS; and incidentals necessary for a complete Trucks Entering Highway System.

Payment will be made under:

| Pay Item | Pay Unit |
|--------------------------------|-----------------|
| Trucks entering highway system | Each |

ORDER NO.: K60
CONTRACT ID. NO.: C0000111466C01

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
ANCHORED WALLS

June 3, 2021
0095-020-818, B660,C501

I. DESCRIPTION

1. This work shall consist of furnishing all labor, materials, tools, supervision, transportation, installation equipment, testing, and incidentals necessary to construct the anchored retaining walls in conformance with the lines, grades, and dimensions shown on the Plans or established by the Engineer.
2. The Contractor shall select the anchor type, angle of declination, drilling method, grouting method, and, subject to the minimum values in the contract documents, bond length, free-stressing (unbonded) length, and anchor diameter. The Contractor shall be responsible for installing anchors that will develop the load-carrying capacity indicated on the contract drawings in accordance with the testing requirements of this Specification. Dimensions, configuration, and connection details shall be determined as part of the anchor design.

II. MATERIALS

1. Structural Steel

Steel sheet piles shall conform to ASTM A588 Gr. 50 and shall be installed in accordance with Section 402 of the Specifications.

All ancillary steel shall also be ASTM A588 Gr. 50.

2. Anchors

A. Tendons: Anchor tendons shall be fabricated from single or multiple elements of the following:

- 1) Seven-wire strand conforming to ASTM A416 (AASHTO M203).
- 2) Compact seven-wire strands shall be low-relaxation conforming to ASTM A779.
- 3) Uncoated high-strength bars conforming to the requirements of ASTM A722 (AASHTO M275). Bars with greater minimum ultimate strength, but otherwise produced and tested in accordance with ASTM A722, may be used provided they have no properties that make them less satisfactory to the Engineer. Bars shall have relaxation losses of not more than 2.5% when initially loaded to 70% of specified minimum tensile strength or not more than 3.5% when loaded to 80% of specified minimum tensile strength after 1000 hours of testing.

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3. Admixtures

Admixtures which control bleed, improve flowability, reduce water content, and retard set may be used in the grout subject to the approval of the Engineer. Admixtures, if used, shall be compatible with the prestressing steels and mixed in accordance with the manufacturer's recommendations. Expansive admixtures and accelerators shall not be permitted.

4. Anchorage Devices

- A. Stressing anchorages shall be a combination of either a steel bearing plate with wedge plate and wedges, or a steel bearing plate with a threaded anchor nut. The steel bearing and wedge plate may also be combined into a single element. Anchorage devices shall be capable of developing 95 percent of the specified minimum ultimate tensile strength of the steel tendon. The anchorage devices shall conform to the static strength requirements of Section 4.1 in PTI M50.1 "Guide Specification for Post-Tensioning Materials."
- B. Anchorage covers shall be fabricated from steel or plastic with a minimum thickness of 1/8-inch. The joint between the cover and the anchor plate shall be watertight.
- C. Wedges shall be designed to preclude premature failure of the prestressing steel due to notch or pinching effects. Wedges shall not be reused.

5. Bondbreaker

The bondbreaker shall be fabricated from a smooth plastic tube or pipe having the following properties: (1) resistant to chemical attack from aggressive environments, grout, or corrosion inhibiting compound; (2) resistant to aging by ultra-violet light; (3) fabricated from material nondetrimental to the tendon; (4) capable of withstanding abrasion, impact, and bending during handling and installation; (5) enable the tendon to elongate during testing and stressing; and (6) allow the tendon to remain unbonded after lock-off.

6. Cement Grout

Type I, II, III, or V Portland cement conforming to ASTM C150 (AASHTO M85) shall be used for grout in anchors. The grout shall be a pumpable neat mixture of cement and water and shall be stable (bleed less than 2 percent), fluid, and provide a minimum 28-day compressive strength of at least 3,000 psi measured in accordance with ASTM C109 at time of stressing. Anchor grout shall have a water/cement ratio between 0.35 and 0.50.

7. Centralizers

Centralizers shall be fabricated from plastic, steel or material which is non-detrimental to the prestressing steel. Wood shall not be used. The centralizer shall be able to support the tendon in the drill hole and position the tendon so a minimum of ½-inch of grout cover is provided and shall permit grout to freely flow around the tendon and up the drill hole.

8. Corrosion Inhibiting Compound

The corrosion inhibitor shall remain ductile and free from cracks and shall not become fluid over the anticipated range of temperatures encountered during fabrication, transport, storage, and while in service. The inhibitor shall be impervious to moisture and air and shall be a self-healing film and displace water. The corrosion inhibitor shall have a reserve alkalinity for long term acid

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neutralization. The concentration of chlorides, nitrates, and sulfides present in the inhibitor shall not exceed 10 ppm.

9. Grout Tubes

Grout tubes shall have an adequate inside diameter to enable the grout to be pumped to the bottom of the drill hole. Grout tubes shall be strong enough to withstand a minimum grouting pressure of 150 psi.

10. Heat Shrinkable Sleeves

Heat shrinkable sleeves shall be fabricated from a radiation crosslinked polyolefin tube internally coated with an adhesive sealant. Prior to shrinking, the tube shall have a nominal wall thickness of 24 mils. The adhesive sealant inside the heat shrinkable tube shall have a nominal thickness of 20 mils.

11. Couplers

Prestressing steel couplers shall be capable of developing 100 percent of the guaranteed minimum ultimate tensile strength of the prestressing steel.

12. Sheathing

A. Encapsulation for the tendon bond length shall consist of one of the following:

- 1) Corrugated high density polyethylene (HDPE) tube having a minimum wall thickness of 30 mils and conforming to AASHTO M252
- 2) Corrugated polyvinyl chloride (PVC) tube having a minimum wall thickness of 30 mils

B. A sheath shall be used as part of the corrosion protection system for the unbonded length portion of the tendon. The sheath shall be fabricated from one of the following:

- 1) A hot-melt extruded polypropylene tube. The polypropylene shall be cell classification B55542-11 as defined by ASTM D 4101 (or approved equal). The tubing shall have a minimum wall thickness of 60 mils.
- 2) A hot-melt extruded polyethylene tube. The polyethylene shall be high density Type III as defined by ASTM D1248 (or approved equal). The tubing shall have a minimum wall thickness of 60 mils.
- 3) Heat-shrinkable tube consisting of a radiation cross-linked polyolefin tube internally coated with an adhesive sealant. The minimum tube wall thickness before shrinking shall be 24 mils. The minimum adhesive sealant thickness shall be 20 mils.
- 4) Corrugated polyvinyl chloride (PVC) tube having a minimum wall thickness of 30 mils

C. The smooth sheath may also function as a bondbreaker. Sheaths fabricated from a corrugated tube or a heat-shrinkable tube require a separate bondbreaker applied over them.

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13. Insulation

- A. The electrical insulation under the bearing plate shall be a multi-polymer plastic sheet manufactured expressly for bearing purposes. This material shall have a minimum ultimate compressive strength of 8000 psi.
- B. The electrical insulation over the anchorage and the bearing plate shall be fabricated from a material that is an electrical insulator; resistant to attack from cement, corrosion inhibitor, or the environment; non-detrimental to the prestressing steel; prevents oxygen and moisture from coming in contact with the anchorage or bearing plate; and capable of withstanding atmospheric exposure and ultraviolet light degradation if the anchor head is to remain exposed to the atmosphere.

III. SUBMITTALS

The Contractor shall submit the following to the Department for review and approval:

- 1. Names and resumes for the proposed superintendent, on-site supervisor, foreman, and drill operators for anchor installation. The resume shall provide the following information for at least five anchor projects completed within the last three years: (1) name of client contact, address, and telephone number; (2) location and detailed description of project; (3) contract value; and (4) scheduled completion date and actual completion date for the project.
- 2. Wall Installation Plan, which shall include proposed sequence of construction, wall closure details as noted in Contract Plans, schedule and sequence of anchor installation, proposed equipment type for pile installation, drills, augers, and equipment placement, disposal of material, protection of railway operations, environmental control procedures, anchor testing procedures, and proposed refurbishment procedures for anchors which do not pass the proof test or performance test criteria.
- 3. Shop fabrication details for steel sheet piles.
- 4. Shop drawing details of the anchors, including but not limited to, the following:
 - A. Design calculations, signed and sealed by a Professional Engineer registered in the Commonwealth of Virginia, including design of bonded length for each anchor, unfactored design load, and the size of the anchor tendon for each anchor unfactored design load.
 - B. Details, arrangement and method of installations of the anchors including anchor number and location, unfactored design load for each anchor, type and size of each anchor, minimum bonded length and stressing length, and grouting details.
 - C. A drawing of the anchor system and double corrosion protection including centralizers and their location, anchorage, anchorage corrosion protection system, anchor head corrosion protection system. Manufacturer's product data and recommended installation procedures for anchors and corrosion protection system.
 - D. Schedule and sequence of anchor installation, and equipment to be used for installation.

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5. Anchor bar or strand manufacturer's mill test reports.
6. Applicable literature from cement grout suppliers giving details on setting times as a function of temperature, strength gain with time, and recommended storage, mixing and placement procedures.
7. Applicable manufacturer certification and/or literature for anchorage fittings and accessories.
8. Detailed description of proposed procedures and applicable manufacturer's literature for the equipment to be used for testing anchors, including but not limited to the following:
 - A. Diagrams showing the arrangement of the testing equipment relative to the anchor and anchorage hardware.
 - B. The method for locking-off the required transfer load.
 - C. The proposed equipment set-ups for monitoring elongation during tests of anchor
 - D. Calibration data for the testing system including the identification number and certified calibration records for each test jack, pressure gage and load cell to be used. Jack, pressure gage and load cell shall be calibrated as a unit. Calibration records shall show the date tested, device identification number, and the calibration test results and shall be certified for an accuracy of at least 2 percent of the applied certification loads by a qualified independent testing laboratory. Calibration shall be completed no more than 90 days prior to testing.
9. Anchor and Grouting Records: Submit weekly records for each anchor installed during the preceding week, including, but not limited to the following:
 - A. Type of mixer and grout pump
 - B. Type of cement, water-cement ratio and any additives in the grout mix
 - C. Grout injection pressure
 - D. Test sample strength
 - E. Volume of Grout placed
 - F. Unfactored design load and lock-off load
 - G. All pertinent test data as detailed in herein
10. The Contractor shall also submit a report to the Engineer within 30 days after completion of the anchor work. The report shall contain as-built Contract Documents showing the locations, declination angles and horizontal alignments of the anchors, total anchor lengths, free-stressing lengths and bond lengths, lift-off readings, and test results.

IV. INSTALLATION OF PILE ELEMENTS

1. General

Sheet piles shall be ordered with adequate excess length to be field cut as required based on conditions encountered in the field. Splicing of sheet piles shall not be permitted, unless approved by the Engineer. All structural welding of steel shall be performed by certified welders qualified to

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perform the type of welding shown on the shop drawings. All gas cutting shall be in accordance with the current standards of the American Welding Society.

2. Piling Installation

When driving the sheet piling, the Contractor shall select a driving method and pile driving equipment consistent for the expected ground conditions at the site. The Contractor shall provide driving heads and other devices for pile driving which shall conform to the recommendations of the manufacturer. before driving. Steel sheet piling shall be assembled with pile points welded to the bottom before driving and then driven as a continuous wall, progressively in stages to keep the piles aligned correctly and minimize the danger of breaking the interlock between the piles. The piles shall be held in proper alignment during driving by means of assembling frames or other suitable temporary guide structures. A vibratory driver may be used as long as the required depth is obtained. Driven sheet piles shall be installed to the minimum tip elevations shown in the Contract Plans.

Contractor shall install the sheet piling at the location as shown in the Contract Plans. Each individual pile section shall be driven vertical, within a horizontal tolerance of two percent (2%) of any vertical length measured along the pile. Tops of pile sections shall be within a tolerance of one (1) inch from plan elevations. Care shall be taken during driving to prevent deformations of the top of the piles, splitting of sections, or breaking of the interlock between sections.

3. Protection from Damage

All reasonable precautions shall be taken to prevent damage to existing structures, railroad facilities, and utilities. These measures may include vibration monitoring or survey monitoring as deemed necessary by the Contractor based on proposed field operations. See the Special Provision for Protection of Railway Interests for additional requirements.

V. ANCHOR FABRICATION

1. Anchor Capacity

The Contractor shall select the anchor type, size, length, and angle of declination in accordance with the general requirements indicated on the contract drawings. The Contractor shall be responsible for installing anchors that will develop the required anchor unfactored design load indicated on the contract drawings and shall consider the testing requirements herein. Anchor design shall be performed in accordance with AASHTO LRFD Bridge Design Specifications, 7th Edition, with reference to detailing guidelines described in FHWA Geotechnical Engineering Circular No. 4 "Ground Anchors and Anchored Systems" (FHWA-IF-99-015) and the AASHTO LRFD Bridge Construction Specifications, 4th Edition, Section 6.

The free stressing length (unbonded length) for rock and soil anchors shall not be less than 15 feet at Abutment A and 25 feet at Abutment B. The free stressing length (unbonded length) shall extend at least 5 feet behind the critical failure surface. The critical failure surface shall be evaluated using slope stability or similar procedures. The anchors shall not extend beyond the limits of existing right-of-way.

2. Corrosion Protection

The anchor tendon shall be protected from corrosion using a double corrosion protection system (Class I) in accordance with FHWA Geotechnical Engineering Circular No. 4 "Ground Anchors and Anchored Systems" (FHWA-IF-99-015).

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- A. The tendon bond length shall be encapsulated by a grout-filled corrugated plastic. The tendon shall be grouted inside the encapsulation either prior to inserting the tendon in the drill hole or after the tendon has been placed in the drill hole. Punching holes in the encapsulation and allowing the grout to flow from the encapsulation to the drill hole, or vice versa, shall not be permitted. A minimum of 1/2 inch of grout cover shall be provided over the bare prestressing steel in the anchor length.
- B. The unbonded length of the tendon shall be sheathed and the annular space between the sheath and the prestressing steel shall be filled with a corrosion inhibitor. The ends of pulled-on sheaths shall be sealed with ultra-high molecular weight PE tape or heat-shrinkable tubing. The ends of extruded sheaths do not require a separate sealing means.
- C. A steel trumpet shall be used to provide a transition from the bearing plate or anchor plate to the corrosion protection over the unbonded length. One end of the trumpet shall be attached to the bearing/anchor plate and a tight-fitting seal between the trumpet and the unbonded length protection shall be provided at the other end. Corrosion inhibitor or non-shrink cement grout shall be used to fill the trumpet.
- D. The bearing plate, anchor head, and wedges, or anchor nut shall be electrically insulated from the structure.
- E. The corrosion protection surrounding the unbonded length of the tendon shall extend into the trumpet a minimum of 6.0 in. beyond the bottom seal in the trumpet. The corrosion protection surrounding the unbonded length of the tendon shall not contact the bearing plate or the anchor head during load testing or stressing.

3. Fabrication

The tendons may be either shop or field fabricated from prestressing steel conforming to the requirements herein. The anchor tendon shall be sized so the maximum test load does not exceed 80 percent of the guaranteed ultimate tensile strength of the tendon.

The trumpet shall have an inside diameter equal to or larger than the hole in the tendon bearing plate.

For strand tendons, the Contractor shall consult the tendon supplier to determine the minimum length trumpet required to make a transition from the diameter of the tendon in the unbonded length to the diameter of the tendon at the anchor head. A watertight seal shall be provided between the trumpet and the unbonded length corrosion protection. If grout is used to fill the trumpet, then the seal is temporary and it acts as a grout form. If corrosion inhibitor is used to fill the trumpet, then the seal is permanent and it shall be fabricated from Buna-N synthetic rubber or equal.

The bearing plate shall be fabricated from steel plate conforming to the requirements herein and sized so the bending stress in the plate does not exceed 0.65 times the yield strength of the steel at the anchor unfactored design load.

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4. Handling and Storage

Tendons shall be handled and stored in such a manner as to avoid damage or corrosion. Damage to the prestressing steel as a result of abrasions, cuts, nicks, welds, and weld splatter will be cause for rejection by the Engineer.

Prestressing steel shall be protected from dirt, rust, and deleterious substances. A light coating of rust on the steel is acceptable. If heavy corrosion or pitting is noted, the Engineer will reject the affected tendons. If there is a question about the extent of the corrosion, the Contractor may select an independent testing laboratory subject to the approval of the Engineer and test samples of the tendon to determine if the prestressing steel still meets the minimum mechanical properties of the appropriate ASTM specification. If the steel fails to meet the ASTM specification requirements, the Contractor shall replace the damaged tendons at no additional cost to the Department. The Contractor shall pay all costs associated with the tests.

VI. INSTALLATION OF ANCHORS

This work shall be performed by an entity approved by the Engineer with personnel satisfying the requirements outlined in Section 3.1.

The Contractor shall select the drilling method and the grouting procedure used for the installation of the anchor. The minimum drill hole size is 1 inch larger than the anchor diameter or 6 inches, whichever is greater. Core drilling, rotary drilling, percussion drilling, auger drilling, or driven casing may be used. The anchor angle shall be within 3 degrees of that shown on the approved shop plans, as prepared by the Contractor.

Centralizers shall be securely attached to the tendon in the anchor length only and their center spacing shall not exceed ten (10) feet. In addition, the lower centralizer shall be located a maximum of five (5) feet from the bottom of the anchor length.

If water is used in the drilling operation, the Contractor shall control and dispose of the water in a manner that is not harmful to the site, railroad facilities, or adjacent property.

The Contractor shall use care in handling and storing the tendons at the site. Prior to inserting a tendon in the drill hole, the Contractor shall examine the tendon for damage. If the sheathing has been damaged, it can be repaired with ultra-high molecular weight PE tape. The tape should be spirally wound around the tendon so as to completely seal the damaged area. The pitch of the spiral shall ensure a double thickness at all points.

The grouting equipment shall include a mixer capable of producing a grout free of lumps and undispersed cement. A positive displacement grout pump shall be used. The pump shall be equipped with a pressure gage to monitor grout pressures at the pump. The pressure gage shall be capable of measuring pressures of at least 150 psi or twice that of actual grout pressures used by the Contractor. The grouting equipment shall be sized to enable the anchor to be grouted in one continuous operation. Mixing and storage times shall not cause excessive temperature build-up in the grout. The mixer shall be capable of continuously agitating the grout.

Anchor grout shall be injected from the lowest point of the anchor. The grout may be placed using grout tubes, casing, or drill rods. The grout may be placed before or after insertion of the tendon. The quantity of the grout and the grout pressures shall be recorded. The grout pressures and grout takes shall be controlled to prevent excessive heave in cohesive soils.

After stressing the anchor, the void at the top of the unbonded length shall be filled with grout or corrosion inhibiting compound. The anchor shall remain undisturbed for at least 72 hours.

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VII. ANCHOR TESTING AND STRESSING

Each anchor shall be proof tested except those that are subjected to the more rigorous performance test. The maximum test load shall not exceed 80 percent of the guaranteed ultimate tensile strength of the tendon.

The anchor unfactored design load is shown in the plans. The alignment load shall be 5% of the unfactored design load. The lock-off load shall be 75% of the unfactored design load.

1. Anchor testing equipment and application of loads:
 - A. Testing equipment for all anchors shall include dial gauges, dial gauge support, jack and pressure gauge, electronic load cell, and reaction frame.
 - B. Load cells, and all accompanying equipment, shall be calibrated as a set by an independent testing laboratory.
 - C. Design the testing reaction frame to be sufficiently rigid and of adequate dimensions such that excessive deformation of the testing equipment does not occur. Independently support and center the jack over the anchor so that the anchor does not carry the weight of the testing equipment. Align the jack, the bearing plates, and stressing anchorage with the bar such that unloading and repositioning of the equipment will not be required during the test.
 - D. Apply and measure the test load with a hydraulic jack load cell and pressure gauge, which shall be graduated in 100 psi increments or less. The jack and pressure gauge shall have a pressure range not exceeding twice the anticipated maximum test pressure. Jack ram travel shall be sufficient to allow the test to be done without resetting the equipment. Monitor the anchor load during all anchor tests with both the pressure gauge and load cell. Use the load cell to apply and maintain constant load for each load increment and for the load hold periods.
 - E. Measure the anchor head movement with a dial gauge capable of measuring to 0.0010 inch. The dial gauge shall have a travel sufficient to allow the test to be done without having to reset the gauge. Visually align the gauge to be parallel with the axis of the anchor and support the gauge independently from the jack, wall or reaction frame. The contractor shall provide personnel to keep permanent records of the testing data, to submit to the Engineer for approval.
 - F. Use a micrometer dial gauge, with 0.001-inch precision and minimum 2-inches of travel, above the anticipated elongation, aligned perpendicular to the loading head to measure elongation of the tendon. Support the dial gauge on an independent reference point and in contact with the tendon head or an extension of the tendon head.
 - G. Do not commence tensioning of anchors until the cement grout has cured for at least 72 hours.
 - H. Perform all testing in the presence of the Engineer. Give notice to the Engineer not less than 48 hours before the start of a test.

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- I. Maintain each load increment or decrement for at least one minute, or until movement ceases.

 - J. Anchor tendon may be completely unloaded prior to lock-off. Final stressing does not require further test load movement readings. Upon completion of the restressing to the lock-off load, the load shall be transferred to the permanent stressing anchorage. After applying the lock-off load to the anchor and before removing the jack, perform a lift-off load reading. The load determined from the liftoff reading shall be within 5 percent of the specified lock-off load. If the load is not within 5-percent of the lock-off load, reset the anchorage and perform another lift-off reading until the load is within 5 percent of the lock-off load.
2. Production Anchor Testing:
- A. Performance Testing.
 - 1) Perform performance tests on the first anchor constructed at each retaining wall.
 - 2) The performance tests shall include stressing and monitoring the anchor. During testing, monitor anchor movement, measured at the anchor head, for each load increment to the nearest 0.001 inch from an independent, fixed reference point. The loading sequence shall be as follows:

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| Cycle | Load |
|---|--|
| 1 | AL 0.25P AL |
| 2 | 0.25P 0.50P AL |
| 3 | 0.25P 0.50P 0.75P AL |
| 4 | 0.25P 0.50P 0.75P 1.00P AL |
| 5 | 0.25P 0.50P 0.75P 1.00P 1.20P AL |
| 6 | 0.25P 0.50P 0.75P 1.00P 1.20P 1.33P (Max Test Load) |
| P = Unfactored Design Load AL = Alignment Load | |

- 3) Hold the maximum performance test load for ten minutes, operating the equipment to maintain the required load. Record total movements with respect to a fixed reference point at 1 minute, 2, 3, 4, 5, 6 and 10 minutes. If the total movement between 1 minute and 10 minutes exceeds 0.040 inch, hold the test load for an additional 50 minutes. Record total movements at 15 minutes, 20, 25, 30, 40, 50 and 60 minutes.
- 4) The Contractor will plot the tendon head movement versus load for each load increment. The Engineer will review these plots from each performance test to determine whether the anchor is acceptable within 5 working days of receipt of the results.

B. Proof Test:

- 1) Proof-test all production anchors not performance tested. The requirements for loading and monitoring for proof tests are the same as for performance tests, except that the load sequence shall be as follows:

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| |
|----------------------------|
| AL |
| 0.25P |
| 0.50P |
| 0.75P |
| 1.00P |
| 1.20P |
| 1.33P (Maximum Test Load) |
| P = Unfactored Design Load |
| AL = Alignment Load |

- 2) For proof tests, maintain the maximum proof test load for ten minutes, operating the equipment to maintain the required load. Begin the load-hold period as soon as the maximum test load is applied, and measure and record the ground anchor movement at 1 minute, 2, 3, 4, 5, 6 and 10 minutes. If the ground anchor movement between 1 minute and 10 minutes exceeds 0.04 inch, hold the maximum test load for an additional 50 minutes. If the load hold is extended, record the ground anchor movement at 15 minutes, 20, 30, 45 and 60 minutes.
- 3) A graph shall be constructed showing the plot of ground anchor movement versus load for each increment in the proof test. The Engineer will review these plots from each proof-test to determine whether the anchor is acceptable within 5 days of receipt of the results.

3. Acceptance Criteria:

- A. Displacement of the tendon head shall be greater than $0.8 PL_s/AE$, where

"P" equals applied load
 "L_s" equals length from jack pulling head to bottom of unbonded length
 "A" equals total cross sectional area of steel tendon
 "E" equals modulus of elasticity of steel tendon

- B. Displacement of the tendon shall be less than $P(L_s+L_b/2)/AE$ where,

L_b equals bonded length of tendon

- C. Creep per log cycle of time, $(d_2-d_1)/\log(t_2/t_1)$ for proof and performance tests shall be less than 0.040-inch between the 1 minute and 10 minute readings, and less than 0.080-inch between the 6 minute and 60 minute readings, where,

"d₁" equals measured displacement at time t₁
 "d₂" equals measured displacement at time t₂
 "t₁" equals time of first displacement measurement
 "t₂" equals time of second displacement measurement

- D. Do not incorporate anchors not meeting Criterion (a), into the structure and install replacement anchors for these rejected anchors in a manner and at locations acceptable to the Engineer. Those not meeting Criteria (b) or (c) may be accepted to work at loads less than design value or may be post-grouted and retested to the original acceptance criteria relative to Criterion (b) or enhanced acceptance criteria for creep movement consisting of no more than 0.04-inch of creep movement between the 1 and 60 minute displacement readings

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at the maximum test load relative to Criterion (c). The acceptable load for these anchors will be determined by the Engineer based on submission by the Contractor and in the case of reduced lock-off, the load shall be no more than 50 percent of the load that the anchor can hold without detectable movement at the end of testing. Install additional anchors to provide the resistance not provided by these anchors in accordance with Criteria (b) or (c) in a manner and at the locations acceptable to the Engineer.

- E. If anchors fail to meet the acceptance criteria during testing, the Contractor shall modify the design or construction procedures for subsequent anchors, subject to review and approval of the Engineer. These modifications may include modifying the installation methods, or increasing the anchor length. Any modifications of design or construction procedures shall be at no additional cost to the Department. Refurbishment of the failed anchor location shall be in accordance with the approved installation plan.

VIII. MEASUREMENT AND PAYMENT

Anchored Wall will be measured in linear feet of wall constructed and accepted, as measured along the working line of wall, and will be paid for at the Contract linear foot price. This price shall include excavation, temporary shoring, access, grading, drilling, cleanout and backfill, steel sheet pile fabrication and installation, cutting sheet piling and placement of fabric waterproofing for concrete pipe installation, furnishing, installing and stressing anchors, testing of anchors, and all other labor, tools equipment, and incidentals necessary to complete the work.

Payment will be made under:

| Pay Item | Pay Unit |
|-----------------|-----------------|
| Anchored Wall | Linear foot |

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
FULL-DEPTH RECLAMATION (FDR)

November 16, 2023
0095-020-818, B660, C501

I. DESCRIPTION

Full-depth reclamation (FDR) is defined as those processes in which all or a portion of the existing pavement structure or a combination of imported material (crushed concrete or recycled asphalt pavement (RAP)) and in-place subgrade material is pulverized, stabilized, and compacted in place; If the portion which is to be pulverized includes all of the existing asphalt pavement layers then a portion of the underlying bound and unbound layers may also be included.

The Contractor shall furnish all labor, materials, and equipment required for completing the work. The Contractor shall select the job mix formulae (JMF) and construction methods to meet the performance requirements specified herein.

II. MATERIALS

1. **Stabilizing Agents:** The amount of stabilizing agents to be used shall be determined by the Contractor by means of a mixture design process.
 - A. **Hydraulic cement** shall conform to Section 214 of the Specifications.
 - B. **Lime** shall conform to Section 240 of the Specifications.
 - C. **Fly ash** shall conform to Section 241 of the Specifications.
 - D. **Asphalt emulsions** shall not be used as a FDR stabilizing agent on this project.
 - E. **Liquid asphalts** shall not be used as a FDR stabilizing agent on this project.
2. **Water** used for mixing shall conform to Section 216 of the Specifications.
3. **FDR:** material shall meet the gradation requirements of Table 3 before adding any stabilizing agents.
4. **Other Additives**, if necessary, may be used by the Contractor to meet the requirements in Table 4. In the case where an additional additive is used, the type and dosage shall be described in the JMFs submitted to the Engineer.
5. **Crushed Recycled Asphalt Pavement (RAP) Material** conforming to Section 211.02(j) and Table 1 may be added by the Contractor.

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Table 1
Additional Crushed RAP

| Tests | Method | Limit |
|--|--------------|--------------|
| Deleterious Materials: Clay Lumps and Friable Particles in Aggregate | AASHTO T 112 | 0.2% maximum |
| Maximum Sieve size, 2.0 in | AASHTO T 27 | 100% passing |

6. **Crushed Concrete Material** conforming to Section 203.02(a) and Table 1 may be added by the Contractor.
7. **Additional aggregate**, conforming to Section 203 of the Specifications and Table 2, may be used if the Contractor determines it is necessary based on the mixture design or other requirements to produce a product which meets the mixture requirements specified in Table 4 and final mix gradation specified in Section IV-1.

Table 2
Additional Aggregate

| Tests | Method | Limit |
|--|--------------|------------------|
| Los Angeles Abrasion Value | AASHTO T 96 | 45% maximum loss |
| Sand Equivalent | AASHTO T 176 | 45% minimum |
| Maximum size, 100% Passing, Sieve Size | AASHTO T 27 | 2.0 in |
| Water absorption | AASHTO T 85 | 3% maximum |

8. **Handling and Storage:** Store cement to prevent moisture degradation and partial hydration. Do not use cement that has become hard, caked, or lumpy. Store aggregates and RAP so that segregation and inclusion of foreign materials are prevented. Do not use the bottom 6 inches of aggregate or RAP piles in contact with the ground.

III. QUALITY CONTROL PLAN

The Contractor shall develop and implement a Quality Control Plan to ensure that operational techniques and activities provide integral and finished material of acceptable quality. Contractor sampling and testing shall be performed to control the processes and ensure material compliance with the requirements of the Contract. The Contractor shall provide their Quality Control Plan and JMFs to the District Materials Engineer for approval at least 30 Days before the start of FDR operations.

For each FDR project, the Contractor is required to furnish a project specific Quality Control Plan that shall include, at a minimum, the following information:

1. A description of the Contractor's Quality Control organization, including the number of full-time equivalent employees or Sub-Contractors with specific Quality Control responsibilities, including an organizational chart showing lines of authority and reporting responsibilities
2. A list of Full Depth Reclamation Technicians conforming to Section 200.06 of the Specifications.
3. A Quality Control Sampling, Testing and Analysis Plan with methods that include a description of how random locations for testing and sampling are determined
4. Identification and description of qualifications of the laboratories to be used for each type of testing
5. Specific listing of documentation for Quality Control activities
6. Procedures to meet contract requirements for corrective action when Quality Control criteria are not met

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7. Procedures to protect stabilized material from receiving excessive moisture from weather events (e.g., rain, fog, etc.) and corrective actions when criteria are not met
8. Contingency Plan including but not limited to:
 - Inclement weather
 - Equipment breakdowns
 - Materials shortages
 - Excessive fluff - (greater than approximately 10%). Fluff is defined as the increase in material thickness of the recycled layer over the specified recycling depth due to remixing in place.
 - Deficient density of installed FDR
 - Material doesn't break or cure in timely manner
 - Gradation is outside tolerances
 - Production modifications based on changes in ambient or material temperature.

IV. Job Mix Formula (JMF)

1. **Mixture Designs** in the form of a job-mix formula (JMF) shall be submitted to the District Materials Engineer for the Department's approval at least 30 Days before the start of FDR operations. More than one JMF may be required. The gradation of each JMF shall fall within the bands shown in Table 3.

Table 3
Design Range

| Sieve Size | Percentage by Weight Passing Square Mesh Sieves (in) | |
|------------|--|-------|
| | Lower | Upper |
| 2.0" | 100 | 100 |
| 3/8" | | 55 |

The Contractor shall obtain sufficient samples of the material to be reclaimed directly from each roadway within the project for laboratory testing and mix analysis. **Samples shall be obtained from every 2,500 linear feet, within each lane and to the proposed total recycling depth, with a minimum of six (6) locations for each job mix formula.** Sample locations from each lane may be offset or adjacent from each other. Additional locations may also be selected based on pavement conditions and variability.

2. **Mixture Design Submittal** – The designs shall be performed by the Contractor according to these specifications and submitted to the District Materials Engineer for approval 30 working days before the planned start of the work. The JMF submittal shall include, at a minimum, the following information:
 - Maximum Dry Density at Optimum Moisture Content
 - Percent by weight of all stabilizing agents to be added to the recycled mix
 - Percent water content (at room temperature) required
 - Expansion ratio and half-life characteristics and temperature of asphalt binder at the time of injection into foaming chamber (for mixtures using foamed asphalt)
 - Minimum curing time or set time of the asphalt emulsion (for mixtures using asphalt emulsion)
 - Target gradation (including any aggregate to be added)

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Table 4
Full-Depth Reclamation JMF Requirements

| Test | Test Method | Criteria |
|---|--|---|
| Liquid Limit, Plastic Limit, and Plasticity Index of Soil | VTM-7 | Report |
| Dry Preparation and Mechanical Analysis of Soils, Select Material, Subbase and Aggregate Bases | VTM-25 | Report |
| Classification of Soils | AASHTO M 145 | Report |
| Moisture-Density Relations of Soil-Cement Mixtures | AASHTO T 134 | Report |
| Moisture Density Relations for Bituminous Stabilizing Agents | AASHTO T 180 | Report |
| Compressive Strength of Soil-Cement Cylinders | ASTM D 1633 | 250 - 450 psi at 7 days ¹ |
| Determining the Strength of Soil-Lime Mixtures (Minimum) | VTM-11 | 150 psi |
| Dry Indirect Tensile Strength (ITS) for Foamed Asphalt Stabilizing Agent (Minimum) | AASHTO T 283, Section 11 ² | 45 psi |
| Marshall Stability Test for Asphalt Emulsion Stabilizing Agent (Minimum) | ASTM D5581 | 2500 lbs |
| | AASHTO T 245 ³ | 1250 lbs |

¹Three specimens shall be produced and tested for each JMF. The average strength of the specimens shall be within the specified range with no individual specimen having a strength value that varies more than 100 psi from the minimum or maximum value.

²Three specimens shall be produced using either 75 blows per side (per VTM-57) for AASHTO T 245 or 30 gyrations (per AASHTO T 312) for ASTM D5581, compacted at or below Optimum Moisture Content and cured as follows: oven dry at 104°F (40°C) for 72 hrs and cool to ambient air temperature for 24 hrs.

³ Three specimens shall be produced at 75 blows per side (or 30 gyrations per AASHTO T 312) and cured at 140°F (60°C) to constant mass, hold specimens at 104°F (40°C) for 2 hours in a forced draft oven immediately prior to testing.

If a change in source materials is made during construction, new JMFs shall be created and approved by the District Materials Engineer prior to use on the project. The JMFs shall meet the above criteria at the approved stabilizing agents content.

V. EQUIPMENT

1. **Pulverizing equipment** used to reclaim existing pavements shall be capable of pulverizing existing pavement, as well as any additional materials, to meet the gradation provided in the approved JMF, for the widths provided in the Plans, and to the depth specified.
2. **Stabilizing equipment** shall be capable of incorporating the stabilizing agents at the rate provided in the approved JMF, automatically metering dosage and mixing the full depth and width of pulverized material to a homogenous mixture.
3. **Grading equipment** shall be capable of working within the constraints of the excavation and grading the full width of stabilized material in conformance with the lines and grades provided in the Plans.
4. **Compacting equipment** shall be capable of working within the constraints of the excavation and compacting the stabilized material in conformance with the lines and grades provided in the Plans, as well as in conformance with the density requirements provided in the approved JMF.

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VI. TRIAL SECTION

One week before planned start of full production, the Contractor shall stabilize a 2,500-foot long trial section, one lane wide, at the designated thickness and designed optimal stabilizing agents content provided in the approved JMF. Construct the trial section on the project at a location approved by the Engineer.

Construct the trial section using the same construction procedures intended for the entire project. Cease production after construction of the trial section until the trial section is evaluated and accepted by the Engineer. The trial section shall be considered a lot and payment will follow the payment tables established in this specification.

Should the initial trial section fail, the Contractor shall construct a second trial section on the Project site at a location approved by the Engineer and shall have a Technical Representative present during mixing and placing operations for the second trial section. The Technical Representative shall remain present during mixing and placement of any additional trial sections until acceptance has been made by the Department. In addition, the Technical Representative shall also be present for the next day of production to oversee the mixing and placing operation. If during the next production day, the materials meet the mixture and placement acceptance criteria, the Technical Representative will no longer be required on the project site. If additional trial sections beyond the first two are needed, the Contractor shall construct the trial section at sites approved by the Engineer.

The Technical Representative shall meet the following criteria:

- Have 2 years minimum experience with the FDR process.
- Have personally supervised a minimum of 5 successful FDR projects.
- Have personal experience in developing FDR mix designs.
- Have the experience to perform and supervise field process control testing.
- Submit a list of references, with current telephone numbers, of persons who are able to verify the experience required herein.

The Technical Representative does not have to be an employee of the Contractor.

VII. CONSTRUCTION METHODS

1. **Grass and Other Vegetation** shall be removed from the edge of the existing pavement to prevent contamination of the pulverized bituminous material during the milling operation.
2. **FDR** shall be performed to the depth provided in the Plans, while incorporating stabilizing agents, mineral filler, additional aggregate and water. Mixing shall continue until a homogenous mixture of the above materials and pulverized materials is achieved. As needed, the speed of the recycling unit shall be adjusted to ensure a homogenous mixture,
 - A. Pre-cutting, grading and light compaction of the recycled material shall be performed prior to incorporation of the stabilizing agent.
 - B. The application rate of all stabilizing agents shall be continuously monitored using calibrated, automatic meters. The application rate shall be within 0.20 percentage points of the optimal stabilizing agents content provided in the approved JMF. If the measured application rate falls outside the above tolerance, then the recycling operations shall be stopped and corrected before proceeding.
 - C. The water content of the stabilized material shall be monitored closely to ensure conformance with the approved JMF \pm 2 percentage points of optimum and to ensure proper compaction.

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- D. Longitudinal joints between adjacent stabilization passes shall be overlapped by at least 4 inches. Transverse joints created by the recycling process shall be saw-cut, if necessary, to provide a vertical, clean face to ensure proper compaction.
3. **Final Grading and Compacting** shall be performed within the constraints of the excavation and the stabilized material shall be compacted in conformity with the lines and grades provided in the Plans. Compaction shall progress across the full width of the stabilized area until the established target density is achieved.
- A. Once the entire working width (full lane width plus affected shoulder width) has been stabilized, and only after primary compaction has been completed, the entire working width shall be graded to the required profile and cross-slope. Disturbance to the stabilized and primarily compacted material shall be kept to a minimum during this grading and shaping operation.
- B. Any additional water required to achieve the established target density shall be applied by spraying the surface of the stabilized material with light applications. Care shall be taken not to over-apply additional water to any areas of stabilized material.
4. **Surfacing:** The surface of the compacted material shall be kept moist until covered with an asphalt-based layer in the case of cement stabilized materials. For bituminous stabilized materials, the FDR shall be allowed to cure until the moisture of the material is a maximum of 50% the optimum moisture content or until approval of the Engineer is received. Subsequent asphalt-based layers can be placed any time after finishing, as long as the FDR is sufficiently able to support the required construction equipment without marring or permanent distortion of the surface.

VIII. ACCEPTANCE TESTING

1. **Density** shall be determined with a nuclear gauge operating in direct transmission mode conforming to VTM 10 to the full depth of the FDR layer. The Contractor shall have had the gauge calibrated within the previous 12 months by an approved calibration service. The Contractor shall maintain documentation of such calibration service for the 12-month period from the date of the calibration service.

The project will be divided into lots by the Engineer for the purpose of defining areas represented by each series of tests.

2. **Lot:** For the purposes of acceptance, each day's production shall be considered a lot unless the paving length is less than 3,000 linear feet or greater than 7,500 linear feet. When paving is less than 3,000 feet, it shall be combined with the previous day's production or added to the next day's production to create a lot as described below.

For the purposes of acceptance, the standard size of a lot shall be 5,000 linear feet, with 1,000 foot sublots, including the full width of the lane (including any affected shoulder width). If the Engineer approves, the lot size may be increased to 7,500 linear foot lots with five 1,500 foot sublots when the Contractor's normal daily production exceeds 7,500 feet. When a partial lot occurs at the end of a day's production or upon completion of the project, the lot shall be either added to the previous lot if the partial lot contains one or two complete sublots, or redefined to be an entire lot if the partial lot contains three or four complete sublots.

Each lot shall be tested for density by taking a nuclear density reading from two stratified-random test sites selected by the Engineer within each subplot. Test sites shall not be located within 18 inches of any longitudinal joint.

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The average of the subplot density measurements will be compared to the maximum density from the approved JMF to determine the acceptability of the lot. Once the average density of the lot has been determined, the Contractor will not be permitted to provide additional compaction to raise the average. If two consecutive sublots produce density results less than 97.0 percent of the target density, the Contractor shall immediately notify the Engineer and institute corrective action. By the end of the day's operations, the Contractor shall furnish the test data developed during the day's production to the Engineer.

Payment will be made according to Table 5.

Table 5
Payment Schedule For Lot Densities

| % of Density from Approved JMF | % of Payment |
|--------------------------------|--------------|
| 97.0 or greater | 100 |
| 96.0 to less than 97.0 | 95 |
| 95.0 to less than 96.0 | 90 |
| Less than 95.0 | 75 |

3. **Depth Check** – Depth checks shall be performed by the Contractor in accordance with VTM 38, Method B twice per lot after compaction and prior to the placement of the next pavement layer.

Acceptance testing of FDR for depth for each lot will be based on the mean result of measurements of samples taken from that lot of material placed.

A lot will be considered acceptable for depth if the mean result of the tests is within the tolerance of the plan depth for the number of tests taken as shown in Table 6.

Table 6
Process Tolerance for Depth Checks

| Plan Depth, inches | Tolerance, inches (Plus or Minus) | | | |
|--------------------|-----------------------------------|---------|---------|---------|
| | 1 test | 2 tests | 3 tests | 4 tests |
| >6 ≤ 8 | 0.9 | 0.65 | 0.5 | 0.4 |
| >8 ≤ 12 | 1 | 0.9 | 0.7 | 0.5 |
| >12 | 1.2 | 1 | 0.8 | 0.6 |

If an individual depth test is in excess of the tolerance for one test, that portion of the lot represented by that test will be excluded from the lot. If an individual test result indicates that the depth of material represented by the test is more than the tolerance for one test, the Contractor will not be paid for that amount of material in excess of the tolerance throughout the length and width represented by the test. The Department may require excessive material to be removed at the Contractor's expense. If an individual test result indicates that the depth of the material represented by the test is deficient by more than the tolerance for one test, correction of the base course represented by that test shall be made by the Contractor as specified hereinafter.

If the mean depth of a lot of material is less than the allowable tolerance, correction will be required and the Contractor will be paid for the quantity of material that has been placed in the lot. The Contractor will be required to furnish and place material specified for the subsequent course to bring the deficient FDR course depth within the tolerance. This additional material will be placed at the Contractor's expense.

4. **Gradation** shall be checked twice per day.
5. **Stabilizing Agent Dosage Rate** shall be verified at the start of a day's production and twice per 1,000 linear feet . If using a dry stabilizing agent, the dosage rate shall be determined in accordance with VTM 141. The dosage rate shall be within 0.20 percentage points of the approved JMF. If the dosage rate is beyond this tolerance, then paving shall stop and the Contractor shall take corrective measures.

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If testing of 2,000 linear feet meets the dosage rate within 0.20 percentage points of the approved JMF, the Engineer may reduce the frequency of testing to 1 test per 1,000 feet. However, if the dosage rate is beyond the tolerance at any time during an approved reduced frequency, testing shall resume at a rate of twice per 1,000 linear feet. The Engineer reserves the right to require verification of the dosage rate by the Contractor at any time.

6. **Construction Records:** The Contractor shall prepare separate test reports meeting the requirements of AASHTO R 18 or may use the current appropriate VDOT forms. Records documenting the dosage rate of stabilizing agents and other test results from Table 4 shall be provided to the Engineer, unless specified otherwise.

IX. WEATHER LIMITATIONS

Recycling operations shall be completed when both the atmospheric temperature and material to be processed (measured in the shade and away from artificial heat) is at least 40°F when cement stabilizing agent is used or 50°F when foamed asphalt or emulsion is used. Recycling operations shall not begin when the weather forecast calls for freezing temperature within 48 hours after placement of any portion of the project.

X. MEASUREMENT AND PAYMENT

Full Depth Recycling (FDR) will be measured in square yards of the completed sections for the depth specified in the Plans and paid for at the Contract square yard price. This price shall be full compensation for removal and processing of the existing pavement; for preparing, hauling, and placing all materials; furnishing additives (not including stabilizing agents); for all freight involved; for all manipulations, including removal of grass and other vegetation; rolling and brooming; testing and documentation; stabilizing agent supplier services; and for all labor, tools, equipment and incidentals necessary to complete the work.

Stabilizing agents will be paid as follows:

Liquid Asphalt (Emulsion) shall not be used as a FDR stabilizing agent on this project.

Liquid Asphalt (foamed) shall not be used as a FDR stabilizing agent on this project.

Hydraulic Cement will be measured in tons and paid for at the Contract ton price. This price shall be full compensation for furnishing and incorporating the hydraulic cement into the mixture. A cement content of 5.0% by weight of the reclaimed material shall be used for bidding purposes prior to the completed design. The actual cement content will be adjusted based on the quantity necessary to meet the design requirements in Table 4.

Lime will be measured in tons and paid for at the Contract ton price. This price shall be full compensation for furnishing and incorporating the lime into the mixture. A lime content of 5.0% by weight of the reclaimed material shall be used for bidding purposes prior to the completed design. The actual lime content will be adjusted based on the quantity necessary to meet the design requirements in Table 4.

Other Cementitious Material will be measured in tons and paid for at the Contract ton price. This price shall be full compensation for furnishing and incorporating the cementitious material into the mixture. A cementitious content of 5.0% by weight of the reclaimed material shall be used for bidding purposes prior to the completed design. The actual cementitious content will be adjusted based on the quantity necessary to meet the design requirements in Table 4.

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Payment will be made under:

| Pay Item | Pay Unit |
|--------------------------------|-----------------|
| Full-Depth Reclamation (Depth) | Square Yard |
| Hydraulic Cement | Ton |
| Lime | Ton |
| Other Cementitious Materials | Ton |

Additional Crushed RAP if required to meet the contract requirements will be measured in tons and paid for at \$ 30 per ton. This price shall be full compensation for furnishing and incorporating the additional RAP into the mixture. The additional RAP shall conform to Section II-5 for payment purposes.

Additional Crushed Concrete if required to meet the contract requirements will be measured in tons and paid for at \$ 30 per ton. This price shall be full compensation for furnishing and incorporating the additional crushed concrete into the mixture. The additional crushed concrete shall conform to Section II-6 for payment purposes.

Additional Aggregate, if required, according to the JMF and other Contract requirements, will be measured in tons and paid for at \$ 45 per ton. This price shall be full compensation for furnishing and incorporating the additional aggregate material into the mixture. The additional aggregate material shall conform to Section II-7 for payment purposes.

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
SECTION 108.02 – LIMITATION OF OPERATIONS

October 18, 2023
0095-020-818, B660, C501

SECTION 108.02 – LIMITATIONS OF OPERATIONS of the Specifications is amended to include the following:

All work areas (and the limits thereof) and lane closures shall be in accordance with the *Virginia Work Area Protection Manual* and shall be approved by the Engineer.

Traffic control devices shall be kept clean, legible, and in proper working order at all times. The Contractor shall provide a person whose responsibility shall be to inspect and maintain signs, barricades, other channelizing devices, and lights while traffic is restricted due to the Contractor's operations.

The Contractor shall not conduct operations requiring lane closures when the weather causes unsafe conditions for the traveling public as determined by the Engineer.

The Contractor shall submit lane and shoulder closure requests to the Engineer for approval 7 days in advance, stating the location, purpose, date, time, and duration of the closure. Confirmation shall be made 24 hours before any scheduled lane closure and shall include a written reiteration of the proposed tasks and a list of materials, labor, and equipment to be used.

No lane closure signing or other traffic disruptive work may be initiated outside the times specified. All signs, equipment, and materials shall be removed before the ending closure time indicated. No lane closures will be permitted outside the times detailed herein without the written authorization from the Engineer.

Extension of a lane closure time is not acceptable. Any changes to the allowable time periods above will require approval in accordance with the Contractor Proposed Alternative Traffic Control Plans special provision copied note. If the Contractor does not restore traffic lanes within the allowable time limits, the Contractor will not be allowed further lane closures until the reasons for the failure are evaluated and the Contractor can provide assurance that the causes have been corrected.

Restoration of traffic is defined as opening all travel lanes to traffic including the completion of all construction work, removing or relocating all work zone traffic control devices and signs to their approved site as determined by the Engineer, and removing all workers, materials, and equipment from the roadway.

Failure to restore all lanes of traffic by the time limits defined herein will be handled as follows:

- The Contractor will not be allowed further lane closures until the reasons for the previous failure are evaluated.
- A formal submission as to the reasons for the failure to restore traffic lanes within the contract lane closure restrictions and the proposed corrective measures is to be provided to the Engineer within 2 days of the occurrence. A meeting with the District Construction Engineer or designee will be required prior to the next scheduled lane closure at which the Contractor must be able to provide assurances to the Engineer that adjustments have been made to eliminate the operational causes of failure to restore all lanes of traffic within the time limits herein. No modifications to the Contract Times will be granted or considered for these days.

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- When applicable, disincentives will be assessed on this project, or sections thereof, designated as subject to disincentives.

The Engineer may change any or all of the work hours stated below when such changes are in the best interest of the traveling public. The Engineer may monitor traffic conditions impacted by the work and make additional restrictions as necessary; i.e., terminate a lane closure early when excessive traffic backups occur, or emergency situations dictate. Additional restrictions for other holidays or special local events may be necessary. In these situations, the Engineer will endeavor to inform the Contractor at the earliest opportunity and in no case less than 48 hours before the event.

Night Work

In areas where work will be performed during the hours of dusk or darkness, the Contractor shall furnish, place, and maintain lighting facilities capable of providing a minimum of 50 foot candles of light for an area of approximately 15 feet by 15 feet with minimum of 5 foot candles in the corners. The lights shall be arranged so as not to interfere with or impede traffic approaching the work sites from either direction or produce undue glare to property owners.

Lighting of work sites may be accomplished by using of any combination of portable floodlights or standard equipment lights, etc. that will provide the sufficient illumination for prosecution and inspection of the work, including, but not limited to, laying out and installing pavement markings and traffic loops. Un-supplemented lighting integral to or attached to working mobile equipment such as rollers, pavers, etc. will not be considered sufficient to meet the requirements of this specification.

The cost of providing lighting of the work site will be considered incidental and shall be included in the contract item unit prices of other work.

The Contractor shall provide sufficient fuel, spare lamps, generator, etc. to maintain the lighting of the work site. The Contractor shall use padding and shielding or locate mechanical and electrical equipment to minimize noise generated by lighting operations as directed by the Engineer. Noise generated by portable generators shall comply with all applicable Federal, State, and Local environmental regulations.

The Contractor shall have a superintendent present during nighttime operations who will control all operations involved. The superintendent shall maintain contact with the Engineer and shall ensure that all actions required to correct any noted problems are taken promptly.

All private vehicles shall be parked outside the clear zone.

The Contractor shall review traffic control devices to ensure proper installation and working order, including monitoring of lights. The individual responsible for this review shall be qualified in accordance with Section 105.14 (a) of the Specifications.

Sound levels resulting from the Contractor's operations shall conform to Section 107.16(b)3 of the Specifications. The Contractor shall obtain all noise permits from the locality where the work is being performed as applicable.

ALLOWABLE HOURS FOR CLOSURES ON I-95 AND ROUTE 616

Interstate 95 Long Weekend Lane Closures

The Contractor shall have 2 allowable long weekend lane closures. Each allowable long weekend lane closure may be performed in accordance with Table 1. An allowable long weekend closure is defined as any approved weekend single lane closure that is performed in either or both directions of traffic and outside of permitted times for daily lane closure operations (Tables 2a and 2b). Any portion of a weekend

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where closures are performed outside of permitted daily lane closure times shall be counted as one (1) long weekend closure.

| | |
|---|-------------------------------------|
| Table 1 | |
| Interstate I-95 Long Weekend Lane Closures | |
| County: Chesterfield | |
| Single Lane Closures | |
| Direction | Long Weekend |
| Northbound | 10:00 PM Friday to 9:00 AM Sunday |
| Southbound | 12:00 AM Saturday to 8:00 AM Sunday |
| Double Lane Closures | |
| See Tables 2a and 2b for permissible times | |

See Table 2a and 2b for permitted times for daily single and double lane closures on Weekend days and Weekdays. For these tables, a Weekday is any time from 9 PM on Sunday to 6 AM on Friday and a Weekend day is any time from 10:00 PM on Friday to 6:00 AM on Sunday.

If the lanes are not reopened, the Contractor will be assessed a disincentive in accordance with Table 4a and Table 4b for each 15 minute increment exceeding the allowable time restriction every time the lane is not re-opened. If time extends into the next increment the full disincentive for that increment will be assessed.

At least 30 days before starting the planned work the Contractor will submit a plan of operations for completing the work. The Plan of Operations will include but not be limited to hourly schedule, detailed description of the process to include means and method, crew size, anticipated weather delay, equipment, material, risk management plan, and other details pertinent to completing the work timely. A planning and coordination conference may be requested and held upon the Contractor's request or at the request of the Engineer.

| | | |
|-----------------------------------|---------------------|---------------------|
| Table 2a | | |
| Interstate I-95 Northbound | | |
| County: Chesterfield | | |
| Single Lane Closures | | |
| Section | Weekday | Weekend |
| MP 47.19 to MP 75.77 | 9:00 PM to 6:00 AM | 11:00 PM to 9:00 AM |
| Double Lane Closures | | |
| Section | Weekday | Weekend |
| MP 47.19 to MP 75.77 | 10:00 PM to 6:00 AM | 11:00 PM to 7:00 AM |

| | | |
|-----------------------------------|---------------------|---------------------|
| Table 2b | | |
| Interstate I-95 Southbound | | |
| County: Chesterfield | | |
| Single Lane Closures | | |
| Section | Weekday | Weekend |
| MP 75.92 to MP 47.07 | 9:00 PM to 6:00 AM | 12:00 AM to 8:00 AM |
| Double Lane Closures | | |
| Section | Weekday | Weekend |
| MP 75.92 to MP 47.07 | 10:00 PM to 6:00 AM | 12:00 AM to 6:00 AM |

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Route 616 Closures and Flagging Operations

The Contractor shall have a single allowable 90 day road closure of Route 616 (Osborne Road). A disincentive of \$500 per day will be assessed for each day the closure is in place beyond the allowable timeframe.

See Table 3 for permitted times for flagging operations.

| Table 3 | | |
|---------------------------------|--------------------|--------------------|
| Route 616 (Osborne Road) | | |
| County: Chesterfield | | |
| Flagging Operation | | |
| Section | Daytime | Nighttime |
| At I-95 | 9:00 AM to 3:00 PM | 6:00 PM to 6:00 AM |

| Table 4a | | |
|---|-------------------------------|-------------------------------|
| TABLE OF USER FEES FOR LANE CLOSURES | | |
| Northbound I-95 | | |
| | Single Lane Closure | Double Lane Closure |
| Starting Time | per 15 minute interval | per 15 minute interval |
| 6:00 AM | (\$500) | (\$1,500) |
| 7:00 AM | (\$1,000) | (\$1,500) |
| 8:00 AM | (\$500) | (\$1,500) |
| 9:00 AM | (\$200) | (\$1,500) |
| 10:00 AM | (\$200) | (\$1,500) |
| 11:00 AM | (\$100) | (\$1,000) |
| 12:00 PM | (\$200) | (\$1,000) |
| 1:00 PM | (\$200) | (\$1,000) |
| 2:00 PM | (\$200) | (\$1,000) |
| 3:00 PM | (\$250) | (\$1,000) |
| 4:00 PM | (\$250) | (\$1,000) |
| 5:00 PM | (\$250) | (\$1,000) |
| 6:00 PM | (\$100) | (\$1,000) |
| 7:00 PM | (\$100) | (\$1,000) |
| Daily Cap | (\$16,200) | (\$66,000) |

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| Table 4b TABLE OF USER FEES FOR LANE CLOSURES Southbound I-95 | | |
|--|-------------------------------|-------------------------------|
| | Single Lane Closure | Double Lane Closure |
| Starting Time | per 15 minute interval | per 15 minute interval |
| 6:00 AM | (\$150) | (\$1,500) |
| 7:00 AM | (\$250) | (\$1,500) |
| 8:00 AM | (\$200) | (\$1,500) |
| 9:00 AM | (\$100) | (\$1,500) |
| 10:00 AM | (\$150) | (\$1,500) |
| 11:00 AM | (\$200) | (\$1,000) |
| 12:00 PM | (\$200) | (\$1,000) |
| 1:00 PM | (\$200) | (\$1,000) |
| 2:00 PM | (\$200) | (\$1,000) |
| 3:00 PM | (\$1,000) | (\$1,000) |
| 4:00 PM | (\$1,000) | (\$1,000) |
| 5:00 PM | (\$1,000) | (\$1,000) |
| 6:00 PM | (\$250) | (\$1,000) |
| 7:00 PM | (\$150) | (\$1,000) |
| Daily Cap | (\$20,200) | (\$66,000) |

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CONTRACT ID. NO.: C0000111466C01

SS109-002020-01

May 1, 2023

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 109—MEASUREMENT AND PAYMENT

SECTION 109—MEASUREMENT AND PAYMENT of the Specifications is amended as follows:

SECTION 109.08—Partial Payments is replaced in its entirety with the following:

(a) **General**

Partial payments will be based on a monthly progress estimate consisting of approximate quantities and value of work performed as determined by the Engineer. When the method of measurement for a Contract item is in units of each or lump sum, the value of work accomplished for partial payment will be determined on a pro rata basis. Partial payments will be made once each month for the work performed in accordance with the Contract requirements. The Contractor will be given the opportunity to review the monthly progress estimate prior to each partial payment. Upon final acceptance, one last monthly estimate will be prepared and any additional payment due will be vouchered for payment.

The monthly progress estimates will be prepared in accordance with the following schedule:

1. **Contractor companies whose name begins with the letter A through F:** The monthly progress estimate will be prepared on the 4th day of each month, beginning on the first 4th day following the date of the Contract execution, and on the same day of the succeeding months as the work progresses.
2. **Contractor companies whose name begins with the letter G through P:** The monthly progress estimate will be prepared on the 11th day of each month, beginning on the first 11th day following the date of the Contract execution, and on the same day of the succeeding months as the work progresses.
3. **Contractor companies whose name begins with the letter Q through Z:** The monthly progress estimate will be prepared on the 20th day of each month, beginning on the first 20th day following the date of the Contract execution, and on the same day of the succeeding months as the work progresses.

For contracts without a payment bond, the Contractor shall submit to the Engineer a letter from each materials supplier and subcontractor involved stating that the Contractor has paid or made satisfactory arrangements for settling all bills for materials and subcontracted work that was paid on the previous month's progress estimate. The Department will use the source of supply letter and approved subletting request to verify that certifications have been received for work that was paid on the previous monthly estimate. The Contractor shall furnish these and other certificates as are required as a prerequisite to the issuance of payment for the current monthly estimate.

The Department may withhold the payment of any partial or final estimate voucher or any sum(s) thereof from such vouchers if the Contractor fails to make payment promptly to all persons supplying equipment, tools, or materials; or for any labor he uses in the prosecution of the Contract work.

Unless otherwise provided under the terms of the Contract, interest shall accrue at the rate of one percent per month.

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Contractors doing business as an individual must provide their social security numbers; proprietorships, partnerships, and corporations must provide their federal employer identification numbers.

(b) Payment to Subcontractors

Payment to subcontractors shall be in accordance with the provisions of Code of Virginia § 2.2-4354 and § 2.2-4355 as follows.

1. Department has paid Contractor for Subcontractor's Work.

Upon the Department's payment to the Contractor for the subcontractor's portion of the work as shown on the monthly progress estimate and the receipt of payment by the Contractor for such work, the Contractor shall make compensation in full to the subcontractor. For the purposes of this Section, payment of the subcontractor's portion of the Work shall mean that payment has been issued for that portion of the Work that was identified on the monthly progress estimate for which the subcontractor has performed service.

The Contractor shall take one of the following two actions within 7 days after receipt of payment from the Department for the subcontractor's portion of the Work as shown on the monthly progress estimate:

- a. Pay the subcontractor for the proportionate share of the total payment received from the agency attributable to the Work performed by the subcontractor; or
- b. Notify the Department and subcontractor, in writing, of his intention to withhold all or a part of the subcontractor's payment along with the reason for nonpayment.

In the event payment is not made as required, the Contractor shall pay interest at the rate of one percent per month, unless otherwise provided in the Contract, to the subcontractor on all amounts that remain unpaid after 7 days, except for the amounts withheld as provided in this Section.

2. Department has not paid Contractor for Subcontractor's Work.

In the event that the Contractor has not received payment from the Department for work performed by a subcontractor under the Contract, the Contractor is liable for the entire amount owed to such subcontractor and shall pay such subcontractor within 60 days of the receipt of an invoice following satisfactory completion of the work for which the subcontractor has invoiced. The Contractor shall not be liable for amounts otherwise reducible due to the subcontractor's noncompliance with the terms of the Contract. However, in the event that the Contractor withholds all or part of the amount invoiced by the subcontractor under the terms of the Contract, the Contractor shall notify the subcontractor within 50 days of the receipt of such invoice, in writing, of his intention to withhold all or part of subcontractor's payment with the reason for nonpayment, specifically identifying the contractual noncompliance, the dollar amount being withheld, and the lower-tier subcontractor responsible for the contractual noncompliance. Payment by the party contracting with the Contractor shall not be a condition precedent to payment to any lower-tier subcontractor, regardless of the Contractor receiving payment for amounts owed to them. Any contrary provisions shall be unenforceable.

3. Nothing in this Section shall be construed to (i) apply to or prohibit the inclusion of any retainage provisions in a construction contract or (ii) apply to contracts awarded solely for

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professional services as that term is defined in Code of Virginia § 2.2-4301 where the Department is contracting directly with an architectural and engineering firm.

4. The Contractor shall include in each of its subcontracts provisions requiring each subcontractor to include or otherwise be subject to the same payment and interest requirements with respect to each lower tier subcontractor.
5. If the Contractor fails to make payment to the subcontractor within the time frames specified herein, the subcontractor shall notify the Engineer and the Contractor's bonding company in writing. The Contractor's bonding company shall be responsible for insuring payment in accordance with this Section and Section 107.01.

(c) Retainage

If the Engineer determines the Contractor's progress is unsatisfactory according to Section 108.03 or other applicable Contract documents, the Engineer will send a notice of unsatisfactory progress to the Contractor advising him of such determination. This notification will also advise the Contractor that five percent retainage of the monthly progress estimate is being withheld and will continue to be withheld for each month the Contractor's actual progress is determined to be unsatisfactory.

When the Engineer determines that the Contractor's progress is satisfactory in accordance with these requirements, the 5 percent retainage previously withheld because of unsatisfactory progress will be released in the next monthly progress estimate, and the remaining monthly progress estimates will be paid in full provided the Contractor's progress continues to be satisfactory.

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SS211-002020-02

May 15, 2023

VIRGINIA DEPARTEMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 211 – ASPHALT CONCRETE

SECTION 211 – ASPHALT CONCRETE of the Specifications is amended as follows:

Section 211.01 – Description is replaced with the following:

Asphalt concrete shall consist of a combination of mineral aggregate and asphalt material mixed mechanically in a plant specifically designed for such purpose.

An equivalent single-axle load (ESAL) will be established by the Engineer, and SUPERPAVE mix types may be specified as one of the types listed as follows:

| Mix Type ¹ | Equivalent Single-Axle Load (ESAL) Range (millions) | Minimum Asphalt Performance Grade (PG) ² | Nominal Maximum Aggregate Size ³ |
|-----------------------|---|---|---|
| SM-4.75A | 0 to 3 | 64S-16 | No. 4 |
| SM-4.75D | 3 to 10 | 64H-16 | No. 4 |
| SM-4.75E | 3 to 10 | 64E-22 | No. 4 |
| SM-9.0A | 0 to 3 | 64S-16 | 3/8 in |
| SM-9.0D | 3 to 10 | 64H-16 | 3/8 in |
| SM-9.0E | Above 10 | 64E-22 | 3/8 in |
| SM-9.5A | 0 to 3 | 64S-16 | 3/8 in |
| SM-9.5D | 3 to 10 | 64H-16 | 3/8 in |
| SM-9.5E | Above 10 | 64E-22 | 3/8 in |
| SM-12.5A | 0 to 3 | 64S-16 | 1/2 in |
| SM-12.5D | 3 to 10 | 64H-16 | 1/2 in |
| SM-12.5E | Above 10 | 64E-22 | 1/2 in |
| IM-19.0A | Less than 10 | 64S-16 | 3/4 in |
| IM-19.0D | 10 to 20 | 64H-16 | 3/4 in |
| IM-19.0E | 20 and above | 64E-22 | 3/4 in |
| BM-25.0A | All ranges | 64S-16 | 1 in |
| BM-25.0D | Above 10 | 64H-16 | 1 in |

¹SM = Surface Mixture; IM = Intermediate Mixture; BM = Base Mixture

²**Minimum Asphalt Performance Grade (PG)** is defined as the minimum binder performance grade for the job mix formulas as determined by AASHTO T170 or AASHTO M332.

³**Nominal Maximum Aggregate Size** is defined as one sieve size larger than the first sieve to retain more than 10 percent aggregate.

Asphalt concrete shall conform to the requirements for the mix type designated on the plans or elsewhere in the Contract for use.

At the Contractor's option, an approved Warm Mix Asphalt (WMA) additive or process may be used to produce the asphalt concrete mix type designated.

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Table II-12A – Standard Deviation is renamed Aggregate Properties and is replaced with the following:

TABLE II-12A
Aggregate Properties

| Mix Type | Coarse Aggregate Properties | | | Fine Aggregate Properties | |
|-----------|-----------------------------|-------------------|-------------------------|---------------------------|----------|
| | CAA | | ASTM D4791 | SE | FAA |
| | 1 fractured face | 2 fractured faces | F & E (5:1) % by weight | | |
| SM-4.75A | | | | 40% min | 40% min |
| SM-4.75D | | | | 45% min | 45% min |
| SM-4.75E | | | | 45% min | 45% min |
| SM-9.0 A | 85% min. | 80% min. | 10% max. ¹ | 40% min. | 40% min. |
| SM-9.0 D | 85% min. | 80% min. | 10% max. ¹ | 45% min. | 45% min. |
| SM-9.0 E | 95% min. | 90% min. | 10% max. ¹ | 45% min. | 45% min. |
| SM-9.5 A | 85% min. | 80% min. | 10% max. ¹ | 45% min. | 45% min. |
| SM-9.5 D | 85% min. | 80% min. | 10% max. ¹ | 45% min. | 45% min. |
| SM-9.5 E | 95% min. | 90% min. | 10% max. ¹ | 45% min. | 45% min. |
| SM-12.5 A | 85% min. | 80% min. | 10% max. ¹ | 45% min. | 45% min. |
| SM-12.5 D | 85% min. | 80% min. | 10% max. ¹ | 45% min. | 45% min. |
| SM-12.5 E | 95% min. | 90% min. | 10% max. ¹ | 45% min. | 45% min. |
| IM-19.0 A | 85% min. | 80% min. | 10% max. ¹ | 45% min. | 45% min. |
| IM-19.0 D | 95% min. | 90% min. | 10% max. ¹ | 45% min. | 45% min. |
| IM-19.0 E | 95% min. | 90% min. | 10% max. ¹ | 45% min. | 45% min. |
| BM-25.0 A | 80% min. | 75% min. | 10% max. ¹ | 45% min. | 45% min. |
| BM-25.0 D | 80% min. | 75% min. | 10% max. ¹ | 45% min. | 45% min. |

¹10 percent measured at 5:1 on maximum to minimum dimensions

Table II-13 – Asphalt Concrete Mixtures: Design Range is replaced with the following:

TABLE II-13
Asphalt Concrete Mixtures: Design Range

| Mix Type | Percentage by Weight Passing Square Mesh Sieves | | | | | | | | | | |
|---------------|---|--------|--------|------------------|--------|--------|-------|--------|--------|--------|---------|
| | 1 1/2 in | 1 in | 3/4 in | 1/2 in | 3/8 in | No. 4 | No. 8 | No. 16 | No. 30 | No. 50 | No. 200 |
| SM-4.75 A,D,E | | | | 100 ¹ | 95-100 | 90-100 | | 30-55 | | | 6-13 |
| SM-9.0 A,D,E | | | | 100 ¹ | 90-100 | 90 | 47-67 | | | | 2-10 |
| SM-9.5 A,D,E | | | | 100 ¹ | 90-100 | 58-80 | 38-67 | | 23 | | 2-10 |
| SM-12.5 A,D,E | | | 100 | 95-100 | 90 | 58-80 | 34-50 | | 23 | | 2-10 |
| IM-19.0 A,D,E | | 100 | 90-100 | 90 | -- | -- | 28-49 | | max | | 2-8 |
| BM-25.0 A,D | 100 | 90-100 | 90 | -- | -- | -- | 19-38 | | | | 1-7 |
| C (Curb Mix) | | | | 100 | 92-100 | 70-75 | 50-60 | | 28-36 | 15-20 | 7-9 |

¹A production tolerance of 1% will be applied to this sieve regardless of the number of tests in the lot.

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Table II-14 – Mix Design Criteria is replaced with the following:

TABLE II-14
Mix Design Criteria

| Mix Type | VTM (%) Production | VFA (%) Design | VFA (%) Production | Min. VMA (%) | Fines/Asphalt Ratio | No. of Gyrations N Design |
|-------------------------|-----------------------|----------------------|-----------------------|--------------------|------------------------|---------------------------------|
| SM4.75A ^{2,4} | 3.0-6.0 | 70-75 | 70-80 | 16.5 | 1.0-2.0 | 50 |
| SM4.75D ^{2,4} | 3.0-6.0 | 70-75 | 70-80 | 16.5 | 1.0-2.0 | 50 |
| SM4.75E ^{2,4} | 3.0-6.0 | 70-75 | 70-80 | 16.5 | 1.0-2.0 | 50 |
| SM-9.0A ^{1,2} | 2.0-5.0 | 75-80 | 70-85 | 17.0 | 0.6-1.3 | 50 |
| SM-9.0D ^{1,2} | 2.0-5.0 | 75-80 | 70-85 | 17.0 | 0.6-1.3 | 50 |
| SM-9.0E ^{1,2} | 2.0-5.0 | 75-80 | 70-85 | 17.0 | 0.6-1.3 | 50 |
| SM-9.5A ^{1,2} | 2.0-5.0 | 75-80 | 70-85 | 16.0 | 0.7-1.3 | 50 |
| SM-9.5D ^{1,2} | 2.0-5.0 | 75-80 | 70-85 | 16.0 | 0.7-1.3 | 50 |
| SM-9.5E ^{1,2} | 2.0-5.0 | 75-80 | 70-85 | 16.0 | 0.7-1.3 | 50 |
| SM-12.5A ^{1,2} | 2.0-5.0 | 73-79 | 68-84 | 15.0 | 0.7-1.3 | 50 |
| SM-12.5D ^{1,2} | 2.0-5.0 | 73-79 | 68-84 | 15.0 | 0.7-1.3 | 50 |
| SM-12.5E ^{1,2} | 2.0-5.0 | 73-79 | 68-84 | 15.0 | 0.7-1.3 | 50 |
| IM-19.0A ^{1,2} | 2.0-5.0 | 69-76 | 64-83 | 14.0 | 0.6-1.3 | 50 |
| IM-19.0D ^{1,2} | 2.0-5.0 | 69-76 | 64-83 | 14.0 | 0.6-1.3 | 50 |
| IM-19.0E ^{1,2} | 2.0-5.0 | 69-76 | 64-83 | 14.0 | 0.6-1.3 | 50 |
| BM-25.0A ^{2,3} | 1.0-4.0 | 67-87 | 67-92 | 13.0 | 0.6-1.3 | 50 |
| BM-25.0D ^{2,3} | 1.0-4.0 | 67-87 | 67-92 | 13.0 | 0.6-1.3 | 50 |

¹Binder content should be selected at 4.0% air voids for A & D mixes, 3.5% air voids for E mix.

²Fines-asphalt ratio is based on effective binder content.

³Base mix shall be designed at 2.5% air voids. BM-25A shall have a minimum binder content of 4.4% unless otherwise approved by the Engineer. BM-25D shall have a minimum binder content of 4.6% unless otherwise approved by the Engineer.

⁴ Binder content shall be selected at 5.0 percent air voids.

211.02—Materials (m)- is replaced with the following

(m) Warm Mix Asphalt (WMA) additives or processes shall be approved by the Department prior to use and shall be obtained from the Department's ApprovedList No. 66. When using an approved chemical additive, it shall be added at a rate of not less than 0.50 percent by weight of the total asphalt content of the mixture unless otherwise indicated on the Department's ApprovedList No.66.

Section 211.03(d)8 – For surface mixes is replaced with the following:

For surface mixes, permeability test data shall be submitted in accordance with VTM-120 using either single point verification or the regression method for each surface mix having a different gradation. The specimen height shall be one inch for SM-4.75 mix types. If the average of the permeability results from the single point verification method exceeds 150×10^{-5} cm/sec, or if the regression method predicts a permeability exceeding 150×10^{-5} cm/sec at 7.5% voids, the Contractor shall redesign the mixture to produce a permeability number less than 150×10^{-5} cm/sec.

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Section 211.04(a) – Types SM-9.0A, SM-9.0D, SM-9.0E, SM-9.5A, SM-9.5D, SM-9.5E, SM-12.5A, SM-12.5D, and SM-12.5E asphalt concrete is renamed Types SM-4.75A, SM-4.75D, SM-4.75E, SM-9.0A, SM-9.0D, SM-9.0E, SM-9.5A, SM-9.5D, SM-9.5E, SM-12.5A, SM-12.5D, and SM-12.5E asphalt concrete and replaced with the following:

Types SM-4.75A, SM-4.75D, SM-4.75E, SM-9.0A, SM-9.0D, SM-9.0E, SM-9.5A, SM-9.5D, SM-9.5E, SM-12.5A, SM-12.5D, and SM-12.5E asphalt concrete shall consist of crushed stone, crushed slag, or crushed gravel and fine aggregate; slag or stone screenings; or a combination thereof combined with asphalt binder.

For all surface mixes, except where otherwise noted, no more than 5% of the aggregate retained on the No. 4 sieve and no more than 20% of the total aggregate may be polish-susceptible. At the discretion of the Engineer, SM-9.5AL or SM-12.5AL may be specified and polish susceptible aggregates may be used (without percentage limits).

Unless Type C (curb mix) is specified by the Engineer in the Contract, SM-9.0, SM-9.5, and SM-12.5 mix types are acceptable for use in the construction of asphalt curbing.

Section 211.04(e) – Type SM-9.5, SM-12.5, IM-19.0 and BM-25.0 asphalt concrete is renamed Type SM-4.75, SM-9.5, SM-12.5, IM-19.0 and BM-25.0 asphalt concrete and amended to replace the first paragraph with the following:

Type SM-4.75, SM-9.5, SM-12.5, IM-19.0 and BM-25.0 asphalt concrete may be designated E (polymer modified), or stabilized (S). Asphalt concrete mixtures with the E designation may not be stabilized.

Table II-15 – Process Tolerance is replaced with the following:

TABLE II-15
Process Tolerance

| Tolerance on Each Laboratory Sieve and Binder Content: Percent Plus and Minus | | | | | | | | | | | | | |
|--|-----------------------------|-------------|-----------|-----------|-----------|-------------|--------------|--------------|---------------|---------------|---------------|----------------|-------------|
| No. Tests | Top Size¹ | 1 ½" | 1" | ¾" | ½" | 3/8" | No. 4 | No. 8 | No. 16 | No. 30 | No. 50 | No. 200 | A.C. |
| 1 | 0.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 6.0 | 5.0 | 2.0 | .60 |
| 2 | 0.0 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 4.3 | 3.6 | 1.4 | 0.43 |
| 3 | 0.0 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 3.3 | 2.8 | 1.1 | 0.33 |
| 4 | 0.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 3.0 | 2.5 | 1.0 | 0.30 |
| 5 | 0.0 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 2.7 | 2.2 | 0.9 | 0.27 |
| 6 | 0.0 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 2.4 | 2.0 | 0.8 | 0.24 |
| 7 | 0.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 2.3 | 1.9 | 0.8 | 0.23 |
| 8 | 0.0 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.1 | 1.8 | 0.7 | 0.21 |
| 12 | 0.0 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 1.7 | 1.4 | 0.6 | 0.17 |

¹Defined as the sieve that has 100% passing as defined in Table II-13.

Section 211.08 – Acceptance is amended by replacing the sixth paragraph with the following:

Binder content will be measured as extractable binder or weight after ignition. The Contractor shall submit a copy of burn tickets from an ignition oven to the Engineer and all the original tickets shall be available upon Engineer's request. The Engineer shall be notified within 24 hours from testing of a report edit if the date and time on a ticket do not match information submitted in PLAID. Original tickets shall be maintained on file by the Contractor for a period of 5 years or until final acceptance of the applicable contract, whichever is greater.

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Section 211.09 – Adjustment System is amended by replacing the first paragraph and following table with the following:

If a lot of material does not conform to the acceptance requirements of Section 211.08, the Department will determine adjustment points as follows:

**Adjustment Points for Each 1% the Gradation Is Outside the
Process Tolerance Permitted In Table II-15**

| Sieve Size | (Applied in 0.1% increments) |
|-------------------|-------------------------------------|
| 1 1/2 in | 1 |
| 1 in | 1 |
| 3/4 in | 1 |
| 1/2 in | 1 |
| 3/8 in | 1 |
| No. 4 | 1 |
| No. 8 | 1 |
| No. 16 | 1 |
| No. 30 | 2 |
| No. 50 | 2 |
| No. 200 | 3 |

ORDER NO.: K60
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SS220-002020-01

August 28, 2020

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 220 – CONCRETE CURING MATERIALS

SECTION 220 – CONCRETE CURING MATERIALS of the Specifications is amended as follows:

Section 220.02(a) – Waterproof paper is replaced with the following:

Waterproof paper shall conform to ASTM C171. One side shall be composed of white, light-reflecting paper.

Section 220.02(b) – PE film is replaced with the following:

PE film shall conform to ASTM C171 except that its nominal thickness shall be 3.0 mils. The thickness at any point shall be at least 2.5 mils.

Section 220.02(c) – Burlap and PE film is replaced with the following:

Burlap and PE film may be used in combination. They shall be bonded securely so that they cannot be easily separated in a dry or saturated condition. White PE film shall conform to the reflectance requirements of ASTM C171. Burlap shall conform to Section 220.02(f). The combination product shall have a total weight of 11 ounces per square yard with 11 threads of burlap per inch.

Section 220.02(f) – Burlap is inserted as follows:

Burlap used by itself shall conform to AASHTO M 182, Class 3, except the weight of each sample may vary by 10%. Acceptance shall be based on the average weight of all samples submitted according to AASHTO M 182, Table 3. If any individual sample is outside the 10% tolerance, the lot will be rejected.

ORDER NO.: K60
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SS223-002020-02

April 4, 2023

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 223 – STEEL REINFORCEMENT

SECTION 223 – STEEL REINFORCEMENT of the Specifications is amended as follows:

SECTION 223.02(a) – Reinforcement is replaced as follows:

1. **Deformed bars** shall conform to ASTM A615, Grade 40 or 60; or ASTM A706, Grade 60. Longitudinal bars for continuous reinforced hydraulic cement concrete pavement shall be Grade 60.
2. **Plain bars** shall conform to ASTM A615, Grade 40 or 60; or ASTM A706, Grade 60, deformation waived. When used as a dowel, material may be a plain bar conforming to the requirements of ASTM A615, Grade 40 or 60, or a plain dowel conforming to the requirements of ASTM A709, Grade 36; or ASTM A706, Grade 60.
3. **Welded wire fabric** shall conform to ASTM A1064. When used in continuously reinforced hydraulic cement concrete pavement wire fabric shall be deformed, furnished in flat sheets, and shall conform to ASTM A1064, Grade 70.
4. **Structural steel** shall conform to Section 226.
5. **Bar mats** shall conform to ASTM A184.
6. **Spiral wire** shall conform to AASHTO M32 or ASTM A1064.
7. Wire mesh for use in gabions shall be made of galvanized steel wire at least 0.105 inch, 12 gage, in diameter. The tensile strength of the wire shall be at least 60,000 pounds per square inch. Wire mesh shall be galvanized in accordance with ASTM A641, Class 3. When PVC coating is specified, it shall be at least 0.015 inch in thickness and shall be black.

Wire shall be welded to form rectangular openings or twisted to form hexagonal openings of uniform size. The linear dimension of the openings shall be not more than 4 1/2 inches. The area of the opening shall be not more than 9 square inches. The unit shall be nonraveling. Nonraveling is defined as the ability to resist pulling apart at any of the twists or connections forming the mesh when a single wire strand in a section is cut.

ORDER NO.: K60
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SS234-002020-01

May 6, 2022

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 234 – GLASS BEADS AND RETROREFLECTIVE OPTICS

SECTION 234 – GLASS BEADS FOR REFLECTORIZING TRAFFIC MARKINGS of the Specifications is replaced as follows:

SECTION 234 – GLASS BEADS AND RETROREFLECTIVE OPTICS

234.01 – Description

This specification covers glass beads and retroreflective optics applied on the surface or incorporated into traffic-marking materials so as to produce a retroreflective surface.

234.02 – Detail Requirements

Glass beads and retroreflective optics shall be supplied from a supplier listed on Materials Approval List No. 76.

The Contractor shall provide a written certification that each batch of glass beads or retroreflective optics used in or on VDOT pavement markings meets VDOT specifications and does not exceed the AASHTO M 247 maximum concentration limits for Lead and Arsenic.

- (a) **Glass beads** shall have a composition designed to be highly resistant to traffic wear and weather. Materials other than glass will be allowed if the pavement marking product was tested on the NTPEP test deck with the alternative bead material.

Glass beads shall have a Refractive Index of 1.50-1.79 when tested as per AASHTO T 346.

Glass beads shall conform to AASHTO M 247, except that at least 80 percent of the beads shall be round when tested in accordance with ASTM D 1155, Procedure B.

- (b) **Retroreflective Optics** shall have a concentration designed to be highly resistant to traffic wear and weather. Retroreflective Optics shall be composed of glass beads, ceramic materials, or a combination of glass beads or ceramic materials affixed to a glass bead core.

Retroreflective Optics shall have a Refractive Index of 1.8 or higher when tested as per AASHTO T 346.

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SS235-002020-01

May 6, 2022

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 235 – RETROREFLECTORS

SECTION 235 – RETROREFLECTORS of the Specifications is deleted and replaced as follows:

235.01 – Description

Retroreflectors are retroreflective surfaces that redirect the vehicle headlights back to the driver to delineate the road. The retroreflective surface may consist of a plastic prismatic reflector or retroreflective sheeting. Retroreflectors are used with:

- Pavement Markers (Permanent and Temporary)
- Delineators (Guardrail, Barrier, Flexible Post, Road Edge)

Pavement markers and Delineators shall be approved by reviewing performance data from one or both of the following test programs:

- (a) AASHTO's National Transportation Product Evaluation Program (AASHTO/NTPEP). Test data values used for approval may be based upon the data generated per the applicable NTPEP Work Plan.
- (b) VDOT Test Facility – VDOT may elect to evaluate performance from their own test facility.

235.02 – Detail Requirements

- (a) **Inlaid Pavement Markers** – Holders for inlaid pavement markers shall be made of polycarbonate plastic nominally 4.75 inches wide excluding breakaway tabs, and shall be able to hold retroreflectors from the Department's Approved List 22 under Inlaid Pavement Markers. The top of the the retroreflector shall be 1/8 inch below the pavement surface when installed with the breakaway positioning tabs resting on the pavement surface.

Retroreflectors for inlaid pavement markers shall have a nominal width of 4 inches excluding the holders.

- (b) **Pavement Markers (Temporary)** – Refer to VTM-70 for testing and approval
- (c) **Pavement Markers (Permanent)** – Refer to VTM-70 for testing and approval
- (d) **Delineators** – Refer to VTM-70 for testing and approval
- (e) **Aluminum panels for delineators** shall be at least 0.064 inch thick conforming to ASTM B-209, alloy 5052.

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SS236-002020-01

May 14, 2021

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 236 – WOOD PRODUCTS

SECTION 236 WOOD PRODUCTS of the Specifications is amended as follows:

236.02 – Detail Requirements is replaced with the following:

(a) **Structural timber and lumber** shall conform to AASHTO M168. The species and grade of structural lumber shall be as shown on the plans. .

Except as otherwise specified, the species and grade of structural lumber, timber, and posts for the following applications shall be as follows:

1. **Bridges** shall be at least 1,550(psi) Fb (Fiber Bending) and:
 - 5 inch by 5 inch and larger: Southern Pine, No. 1 Dense.
 - 2 inch through 4 inch by 2 inch through 4 inch: Southern Pine, No. 1 Dense.
 - 2 inch through 4 inch by 5 inch and through 6 inch: Southern Pine, Non-Dense Select Structural
 - 2 inch through 4 inch by 8 inch only: Southern Pine, Non-Dense Select Structural.
 - 2 inch through 4 inch by 10 inch only: Southern Pine, Select Structural.
 - 2 inch through 4 inch by 12 inch only: Southern Pine, Select Structural.
2. **Signs** shall be at least 1,100 (psi) Fb with material being dressed on all sides and:
 - 4 inches and less in the least dimension: Southern Pine, No. 2.
 - Over 4 inches in the least dimension: Southern Pine, No. 1.
3. **Guardrail** shall be at least 1550 (psi) Fb Southern Pine, No. 1 Dense.
4. **Fence** shall be Southern Pine, No. 2, for line, corner, and brace units.
5. **Signalization and electrical service** shall conform to ANSI Class 05.1. Sawn material, both rough and dressed, shall be certified by the mill as to grade and shall be grade marked in accordance with the grading rules and basic provisions of the American Lumber Standards (PS-20-70) by a lumber grading or inspection bureau or agency approved by the Department. The grade mark shall be applied after dressing if the sawn material is dressed.

(b) **Timber piles** shall conform to ASTM D25. Piles shall be clean peeled and have a butt circumference of at least 31 inches. The Engineer will accept piles for fender systems or other nonload bearing uses under the following criteria provided the piles can be properly driven: A straight line from the center of the butt to the center of the tip may lie partly outside the body of the pile, but the distance between

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the line and pile shall be not more than 1/2 percent of the length of the pile or 3 inches, whichever is smaller.

Points for timber piles shall be steel or cast iron and of a shape that will allow a secure connection to the pile and withstand driving.

Timber piles shall be branded prior to shipment with the supplier brand, year of treatment, species of timber and preservative treatment, retentions, class, and length. Brand symbols shall conform to AWPA M6.

- (c) **Wood Preservatives** - Wood preservatives shall conform to the requirements of the American Wood Protection Association (AWPA) U1 Standards. The AWPA designates the different wood exposure conditions in the following "Use Category System":

UC4A: Above ground, ground contact, fresh water contact or other conditions favorable to wood deterioration. (For Example: sign posts, fence posts and gates).

UC4B: Ground contact in severe environments, critically important components and salt water splash zones (For Example: bridge timbers, bridge decking, guardrail posts and offset blocks).

UC4C: Ground contact in very severe environments, or climates with an extremely high potential for deterioration of critical structural components.
(For Example: foundation pilings).

UC5B: Wood exposed to salt and brackish water (For Example: piles, bracing and bulk-heads).

Wood preservatives for Highway Construction and Hand-Contact Surfaces, listed in Tables 1 and 2 below shall be used according to their suitability for the wood exposure condition and shall not be used interchangeably.

1. Wood used for **Highway Construction** (including but not limited to - bicycle trails, pedestrian overlooks, maintenance applications for posts (sign, fence, guardrail), bridge decking, gates, stair treads, and offset blocks, piles, timbers, and composites) shall be treated with the following preservative per **Table 1** below:

Chromated Copper Arsenate (CCA)

Creosote

Pentachlorophenol (PCP)

Dichloro Octyl Isothiazolin (DCOI)

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Table 1 – Southern Yellow Pine Treatments & Retentions for Highway Construction per AWWA

| Commodity Specifications | | Use Category | Preservative Retentions | | | |
|--------------------------|---|--------------|-------------------------|-----------------|------|------|
| | | | Waterborne (pcf) | Oil borne (pcf) | | |
| Desig | Wood Usage | | CCA | Creosote | PCP | DCOI |
| A | Sawn Products: Boards, lumber and timber | UC4A | 0.40 | 10.0 | 0.50 | 0.15 |
| | Lumber and Timber products for bridge structures, bridge decking, gates, and stair treds | UC4C | 0.60 | 12.0 * | 0.50 | 0.2 |
| B | Posts: Round, 1/2 and 1/4 round, building, fence and sign posts, poles < 16 feet in length. | UC4A | 0.40 | N/A | N/A | 0.13 |
| | Guardrail Posts and offset blocks | UC4B | 0.50 | N/A | N/A | 0.17 |
| E | Round Timber Pilings: Pilings and foundations for land and fresh water use | UC4C | 0.80 | 12.0 | 0.60 | 0.2 |
| F | Wood Composites: Plywood | UC4A | 0.40 | 10.0 | 0.50 | 0.2 |
| | **Glue laminated members (glue then treat) | UC4A | N/A | 10.0 | 0.60 | 0.2 |
| | **Glue laminated members (treat then glue) | UC4A | 0.40 | 10.0 | 0.60 | 0.2 |
| | Laminated veneer lumber | UC4A | N/A | 10.0 | N/A | N/A |
| G | Marine Applications (in or above salt water, brackish water, or tidal water) Plywood & Solid Sawn | UC5B | 2.5 | 25.0 | N/A | N/A |
| | Piles (outer zone/inner zone) | UC5B | 2.5/1.5 | 20.0 | N/A | N/A |
| | Sawn - Dual treatment: CCA with CR | UC5B | 1.5 | 20.0 | N/A | N/A |
| | Piles - Dual treatment: CCA with CR | UC5B | 1.0 | 20.0 | N/A | N/A |

***Creosote (CR) preservative is not allowed for bridge decks.**

****For Glue laminated members Contractor must certify glue is compatible with treatment**

- Wood used for **Hand-Contact Surfaces** (including but not limited to handrails, playground equipment, and picnic tables shall be treated with the following non-arsenical, water-borne preservatives per **Table 2** below:

Alkaline Copper Quat (ACQ)
Copper Azole (CA)
Micronized Copper Azole (MCA)

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| Table 2 – Southern Yellow Pine Treatments & Retentions for Hand-Contact Surfaces per AWPA | | | | | |
|--|---|-------------------------|--------------------------------|-----------------------------|------------------------------|
| Commodity Specifications | | Use Category | Preservative Retentions | | |
| Designation | Wood Usage | | Waterborne (pcf) | | |
| | | | ACQ- A,B,C,D ** | CA-B CA-C ** | MCA, MCA-C ** |
| A | Sawn Products: Boards, lumber and timber for picnic tables, handrails, playground equipment | UC4B | 0.60 | 0.31 | 0.31 |
| F | Wood Composites: Plywood for picnic tables, handrails, playground equipment | UC4B | 0.60 | 0.31 | 0.31 |

**** Note – ACQ, CA, MCA - Many wood treatments can be highly corrosive to metal under some conditions.** Fasteners or connectors that will be in contact with wood using ACQ, CA, MCA wood preservative treatments shall be either 304 or 316 stainless steel or hot-dipped galvanized steel that conforms to ASTM A153 or ASTM A653, Class G185. The Engineer will not permit the use of mechanically galvanized steel hardware or fasteners with ACQ, CA, MCA treated wood. Wood treated with ACQ, CA, MCA shall be separated from steel or aluminum beams or posts using a non-metallic, rubber flashing.

Treatment shall conform to these additional requirements:

1. Waterborne preservatives shall be used for timber where a clean surface is desirable. The moisture content of wood material shall be not more than 19 percent at the time of treatment.
2. Oilborne preservatives (Pentachlorophenol, Creosote, Copper Naphthenate) may be used for timber that is not to be painted. Timbers treated with Pentachlorophenol, Creosote, or Copper Naphthenate shall be free of excess preservative on the wood surface. VDOT allows oilborne preservatives for special projects.
3. Field Cuts to Treated Wood - All cuts, pile cutoffs, bolt holes, field cuts and damage which penetrates the treated zone shall be protected in accordance with AWPA Standard M4. In cases in which the originally used preservative is not available for field use, copper naphthenate with minimum 2% copper metal shall be used. In all cases 3 heavy brushed applications of any preservative shall be used, with adequate penetration time between applications.
4. For any product not listed, refer to the latest AWPA, U1 Standard.
5. Treated timber shall be supplied only from facilities on Approved List # 45.

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SS246-002020-02

May 6, 2022

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 246 – PAVEMENT MARKING

SECTION 246 – PAVEMENT MARKING of the Specifications is amended as follows:

Section 246.02 – Detail Requirements is amended to replace the fifth through seventh paragraphs with the following:

Pavement marking materials shall produce a retroreflective line, message, legend or symbol of specified thickness, width or design in accordance with the MUTCD and Contract requirements.

Pavement marking material shall have the pigment, glass beads, retroreflective optics, and filler well dispersed in the resin, and shall be free from skins, dirt, and foreign objects.

Glass beads and retroreflective optics shall conform to Section 234.

Section 246.02(a) – Approval of Pavement Markings is amended to replace the second paragraph of the second bullet with the following:

When pavement markings are installed on the NTPEP test deck or the VDOT facility, the material's thickness, beads/retroreflective optics, and formulation shall be documented to ensure the equivalent thickness, beads/retroreflective optics and formulation are installed on VDOT roadways following approval.

Section 246.02(b) – Certifications is replaced with the following:

The pavement marking material manufacturer shall certify each batch or lot of material supplied and installed is the same product (thickness, retroreflective optics package and formulation) that was tested and approved on the AASHTO/NTPEP or VDOT test facility in accordance with the Materials Division, Manual of Instructions for Certification I and II Materials. The certification shall include the NTPEP test number from the Materials Division's Approved Products List. The Contractor shall retain the manufacturer's certifications.

Section 246.02(c) – Warranty Requirements is amended to replace the first paragraph with the following:

Pavement marking products shall carry the warranties as supplied by the manufacturer of the individual marking types (classes) for the specific timeframes per type and class and the material requirements for retroreflectivity, durability, color, luminance (Y%), and adhesion as referenced herein. Warranties shall be those commercially supplied or those unique to the Commonwealth in the case of certain products, such as Type B, Class VI preformed pavement marking tape as detailed herein. Manufacturers' warranties shall be obtained by the Contractor and assigned to the Department in writing prior to final acceptance. Warranty periods shall begin on the date of receipt at the project as verified by delivery tickets signed by the Engineer.

Section 246.03(a) – Paint Pavement Marking Materials (Type A) is renamed **Section 246.03(a) – Conventional or Cold Weather Paint Marking Materials (Type A, Class I)** and amended to replace the first paragraph with the following:

Type A, Class I paint material shall be a fast-drying, waterborne, nonleaded, acrylic or modified acrylic resin paint suitable for use on both asphalt and hydraulic cement concrete pavement surfaces

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and shall be selected from the Materials Division's Approved Products List No. 20. Type A, Class I material shall be designed to be applied at approximately 15 mils wet film thickness in conjunction with AASHTO M 247 Type I beads as per Section 234 of the Specifications.

Type A, Class I cold weather paint shall be capable of being both applied and remaining fully adhered to the surface at temperatures below 40 °F.

Section 246.03(a)1e – IR Scan from NTPEP is replaced with the following:

e. IR Scan from NTPEP.

Section 246.03(b) – High Build Paint Marking Materials (Type A, Class II) is added as follows:

Type A, Class II Paint material shall be a fast-drying, waterborne, nonleaded, acrylic or modified acrylic resin paint suitable for use on both asphalt and hydraulic cement concrete pavement surfaces and shall be selected from the Materials Division's Approved Products List No. 20. Type A, Class II material shall be designed to be applied at approximately 27 mils wet film thickness.

1. **Initial Approval** - Maintained retroreflectivity, color (including luminance), and durability shall conform to the following requirements after the material has been installed on the test deck for 1 year:

a. **Maintained Retroreflectivity:** The photometric quantity to be measured is the coefficient of retroreflected luminance (R_L) in accordance with ASTM E1710 for 30-meter geometry. R_L shall be expressed in millicandelas per square foot per foot-candle when measured in the skipline or centerline areas:

| Coefficient of Retroreflected Luminance (R_L) (mcd/ft²/fc) Paint | | |
|---|----------------|--------------------------|
| Color | Initial | 1 Year In-Service |
| White | 300 | 125 |
| Yellow | 225 | 100 |

- b. **Day and Nighttime Color and Luminance (Y%):** Measured according to ASTM D6628.
- c. **Durability:** Paint shall have a durability rating of at least 8 when determined in the wheel path area when tested in accordance with the NTPEP Work Plan.
- d. **Skid Resistance:** The initial skid resistance shall be at least 45 BPN when tested according to ASTM E303, if available.
- e. **IR Scan from NTPEP.**

2. **Batch Testing**

Paint batch testing shall be performed by the Department on samples obtained from the point of manufacture or from the field in accordance with the Materials Division's Manual of Instructions. The test results shall be compared against NTPEP lab test results and the Specifications. Testing shall be performed to determine the following physical requirements and properties:

- a. **Solids, (% weight)** according to ASTM D2369: Acceptable range from NTPEP results (+/- 2%).
- b. **Pigment (% weight)** according to ASTM D3723: Acceptable range from NTPEP results (+/- 2%).

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- c. **Density (wt/gal.)** according to ASTM D1475: Acceptable range from NTPEP results (+/-0.3 lbs/gal).
- d. **Viscosity (KU)** according to ASTM D562: Acceptable range from NTPEP results (+/-5KU).
- e. **Contrast Ratio** according to ASTM D2805 (2°,D 65): Paint shall show a dry hiding quality that will give a contrast ratio of at least 0.96 at (15 mil) wet film thickness.
- f. **Day Color, Luminance (Y%) - (without Drop-on Beads):**

Color testing results shall conform to the chromaticity coordinate limits that follow. Color determination for paint materials will be made without drop-on beads at least 24 hours after application in accordance with ASTM D6628.

| Day Color, Chromaticity Coordinates (Without Drop-on Beads), High Build Paint | | | | | | | | | |
|--|----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| | x | y | x | y | x | y | x | y | Y% |
| White | 0.355 | 0.355 | 0.305 | 0.305 | 0.285 | 0.325 | 0.335 | 0.375 | 80.0 Min |
| Yellow | 0.493 | 0.473 | 0.518 | 0.464 | 0.486 | 0.428 | 0.469 | 0.452 | 50.0-60.0 |

- g. **Settling properties:** Settling shall be no less than a rating of 8 when tested in accordance with the NTPEP Work Plan.
- h. **Freeze-thaw and heat stability:** Paint shall show no coagulation or change in viscosity greater than +/- 5 KU when tested in accordance with the NTPEP Work Plan.
- i. **Water resistance:** Paint shall show no blistering, peeling, wrinkling, softening, or loss of adhesion when tested in accordance with the NTPEP Work Plan.
- j. **VOC:** The VOC content shall be no greater than 150 grams/liter when tested in accordance with EPA Method 24.
- k. **Flash point:** Paint shall have a flash point of at least 201 degrees F when tested in accordance with ASTM D93, Pensky-Martens Closed Cup.
- l. **Infrared (IR) Scan:** Shall match IR scan from NTPEP.

Section 246.03(b) – Thermoplastic Marking Materials (Type B, Class I) is renumbered as 246.03(c) and replaced as follows:

Thermoplastic material shall be suitable for use on asphalt and hydraulic cement concrete pavement surfaces and shall be selected from the Materials Division’s Approved Products List No. 43.

The binder shall be either alkyd or hydrocarbon based. If an alkyd thermoplastic is used, the binder shall consist of synthetic resins, at least one of which is solid at room temperature, and high-boiling plasticizers. At least one-half of the binder composition shall be a maleic-modified glycerol ester of resin and shall be at least 10 percent by weight of the entire material formulation.

Thermoplastic marking materials shall be capable of application at pavement surface temperatures of 50 degrees Fahrenheit and above on all asphalt and hydraulic cement concrete pavement surfaces. Thermoplastic material shall be capable of successfully fusing to itself and previously applied thermoplastic pavement markings.

- 1. **Initial Approval** - Maintained retroreflectivity, color, luminance (Y%), and durability shall conform to the following requirements after the material has been installed on the test deck for 1 year:

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- a. **Maintained Retroreflectivity:** The photometric quantity to be measured is the coefficient of retroreflected luminance (R_L) in accordance with ASTM E1710 for 30-meter geometry when measured in the skip line area.

| Coefficient of Retroreflected Luminance (R_L) (mcd/ft²/fc) Thermoplastic | | |
|---|----------------|--------------------------|
| Color | Initial | 1 Year In-Service |
| White | 300 | 250 |
| Yellow | 250 | 200 |

- b. **Day and Nighttime Color and Luminance (Y%):** According to ASTM D6628
- c. **Durability:** Thermoplastic shall have a durability rating of at least 8 as determined in the wheel path area when tested in accordance with the NTPEP Work Plan.
- d. **Skid Resistance:** The initial skid resistance shall be at least 45 BPN when tested per ASTM E303, if available.

2. **Batch Testing:**

Thermoplastic batch testing will be performed by the Department on samples obtained from the point of manufacture or from the field in accordance with the Materials Division's Manual of Instructions. The tests results will be compared against the following specifications and requirements:

- a. **Pigment and Glass Bead (% Weight)** according to ASTM D4451 82.0% Max
- b. **Intermix Glass Bead Content (% Weight)** according to AASHTO T 250 and ASTM D4797 30.0% Min
- c. **TiO₂ (%) for white thermoplastic** according to ASTM D1394 or equivalent method 10.0% Min
- d. **Binder (%)** according to AASHTO T 250/ASTM D4451 18.0% Min
- e. **Calcium Carbonate and Inert Fillers** 42.0 % Max
- f. **Day Color, Luminance (Y%) (Without Drop-on Beads):** Color testing results shall conform to the chromaticity coordinate limits that follow. Color determination for thermoplastic materials will be made without drop-on beads after cooling in accordance with AASHTO T 250 and ASTM D6628.

| Day Color, Chromaticity Coordinates (Without Drop-on Beads), Thermoplastic | | | | | | | | | |
|---|----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| | x | y | x | y | x | y | x | y | Y% |
| White | 0.355 | 0.355 | 0.305 | 0.305 | 0.285 | 0.325 | 0.335 | 0.375 | 80.0 Min |
| Yellow | 0.499 | 0.466 | 0.545 | 0.455 | 0.518 | 0.432 | 0.485 | 0.454 | 40.0-60.0 |

- g. **Nighttime Yellow Color (with Drop-on Beads):** The initial nighttime color of yellow thermoplastic pavement marking material shall conform to the following CIE chromaticity coordinate requirements when tested in accordance with ASTM D6628 and VTM-111:.

| Night Time Color, Chromaticity Coordinates (with Drop-on Beads) Thermoplastic | | | | |
|--|---|---|---|---|
| Color | 1 | 2 | 3 | 4 |
| | | | | |

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| | x | y | x | y | x | y | x | y |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| Yellow | 0.486 | 0.439 | 0.520 | 0.480 | 0.560 | 0.440 | 0.498 | 0.426 |

- h. **Water absorption:** Materials shall not have more than 0.5 percent retained water by weight when tested in accordance with ASTM D570, Procedure A.
- i. **Softening point:** Materials shall have a softening point of at least 194 degrees F as determined in accordance with ASTM E28.
- j. **Specific gravity:** The specific gravity of the thermoplastic compound at 77 degrees F shall be from 1.7 to 2.2.
- k. **Impact resistance:** The impact resistance shall be at least 10 inch-pounds at 77 degrees F after the material has been heated for 4 hours at 400 degrees F and cast into bars of 1-inch cross-sectional area, 3 inches long, and placed with 1 inch extending above the vise in a cantilever beam, Izod-type tester conforming to ASTM D256 using the 25 inch-pound scale.
- l. **No-Track Time:** Material shall set to bear traffic in not more than 2 minutes when the road temperature is 50 degrees F or above.
- m. **Intermixed Glass beads:** Glass beads shall conform to Section 234.
- n. **Flashpoint:** The material flashpoint shall be no less than 500 degrees F when tested in accordance with ASTM D92.

Section 246.03(c) Preformed Thermoplastic Pavement Marking Material (Type B, Class II) is renumbered as 246.03(d).

Section 246.03(d)1 Initial approval is amended to replace the first paragraph with the following:

Maintained retroreflectivity, color, luminance (Y%), and durability shall conform to the following requirements after the material has been installed on the test deck for 1 year:

Section 246.03(d) Epoxy-Resin Pavement Marking Material (Type B, Class III) is renumbered as 246.03(e).

Section 246.03(e)1 Initial approval is amended to replace the first paragraph with the following:

Maintained retroreflectivity, color, luminance (Y%), and durability shall conform to the following requirements after the material has been installed on the test deck for 1 year:

Section 246.03(e) Polyurea Pavement Marking Material (Type B, Class VII) is renumbered as 246.03(f).

Section 246.03(f)1 Initial approval is amended to replace the first paragraph with the following:

Maintained retroreflectivity, color, luminance (Y%), and durability shall conform to the following requirements after the material has been installed on the test deck for 1 year:

Section 246.03(f) Permanent, Plastic-Backed, Preformed Tapes (Type B, Class IV and Type B, Class VI) is renumbered as 246.03(g).

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Section 246.03(g)1 Initial approval is amended to replace the first paragraph with the following:

Maintained retroreflectivity, color, luminance (Y%), durability, and adhesion shall conform to the following requirements after the material has been installed on the test deck for 1 year.

Section 246.03(g) – Temporary Pavement Marking Materials is renumbered as 246.03(h) and replaced with the following:

Temporary Pavement Marking Materials other than paint shall consist of Type D, Class III, removable, wet reflective tape and Type E removable black, non-reflective tape. Determination of conformance will include, but not be limited to, the evaluation of test data from AASHTO's NTPEP or other VDOT Test Facilities.

1. Wet Reflective, Removable Tape (Type D, Class III):

Wet reflective, removable tape shall be a durable, retro-reflective pliant material consisting of a mixture of polymeric materials, pigments, and glass beads (reflective optics) evenly distributed throughout its cross-sectional area and embedded into the surface. This tape shall be suitable for use on both asphalt and hydraulic cement concrete surfaces and shall be selected from the Department's Approved List 17.

a. **Initial Approval** - Maintained retroreflectivity (dry and wet), color, luminance (Y%), and adhesive bond rating shall conform to the following requirements after the material has been installed on the test deck for 90 days:

(1) **Maintained Dry Retroreflectivity:** The dry photometric quantity to be measured is the coefficient of retroreflected luminance (R_L) in accordance with ASTM E1710 for 30-meter geometry when measured in the skip line or centerline areas.

Coefficient of Retroreflected Luminance (R_L) (mcd/ft²/fc) Dry Retro Removable Tape-Type D, Class III

| Color | Initial | 90 Days In-Service |
|--------|---------|--------------------|
| White | 250 | 150 |
| Yellow | 200 | 100 |

(2) **Maintained Wet Retroreflectivity:** The wet photometric quantity to be measured is the coefficient of retroreflected luminance (R_L) in accordance with VTM 124 (Visual Evaluation or ASTM E2177, Recovery Method) when measured in the skip line or centerline areas.

Coefficient of Retroreflected Luminance (R_L) (mcd/ft²/fc) Wet Retro Removable Tape-Type D, Class III

| Color | Initial | 90 Days In-Service |
|--------|---------|--------------------|
| White | 150 | 100 |
| Yellow | 125 | 75 |

(3) **Day and Nighttime Color and Luminance (Y%):** According to ASTM D6628.

(4) **Adhesive Bond Rating:** The average adhesive bond rating (from transverse and longitudinal lines) shall be 3 or higher according the NTPEP Work Plan.

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- (5) **Skid Resistance:** The initial skid resistance shall be at least 45 BPN when tested according to ASTM E303, if available.
- (6) **Thickness:** Per the manufacturer's recommendation.
- (7) **Adhesion:** No line shall be displaced, torn or missing.

b. Batch Testing:

Wet reflective, removable tape batch testing will be performed by the Department on samples obtained from the point of manufacture or from the field in accordance with the Materials Division's Manual of Instructions. Test results shall be compared against the following specifications and requirements:

- (1) **Retroreflectivity:** Refer to initial requirements
- (2) **Day and Night Color and Luminance:** Refer to initial requirements
- (3) **Thickness:** Refer to initial requirements
- (4) **Width:** The width shall be no less than the nominal width and no greater than 1/8" of the nominal width.
- (5) **Length:** The length shall be no less than the length stated on the manufacturer's packaging.
- (6) **Skid Resistance:** Refer to initial requirements.

2. Removable Black, Non-Reflective Tape (Type E):

Removable black, non-reflective tape shall be a durable, pliant material consisting of a mixture of polymeric materials, pigments and a friction material evenly distributed throughout its cross-sectional area and embedded into the surface. Removable black, non-reflective tape shall be suitable for use on asphalt concrete pavement surfaces, and shall be selected from the Department's Approved List 17.

- a. **Initial Approval** - Maintained adhesive bond rating shall conform to the following requirements after the material has been installed on the test deck for 90 days:
 - (1) **Adhesive Bond Rating:** The average adhesive bond rating (from transverse and longitudinal lines) shall be 3 or higher according to the NTPEP Work Plan.
 - (2) **Skid Resistance:** The initial skid resistance shall be at least 45 BPN when tested according to ASTM E303, if available.
 - (3) **Thickness:** Per the manufacturer's recommendation.
 - (4) **Adhesion:** No line shall be displaced, be torn or missing.

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b. Batch Testing

Black removable, non-reflective tape batch testing will be performed by the Department on samples obtained from the point of manufacture or from the field in accordance with the Materials Division's Manual of Instructions. Test results shall be compared against the following specifications:

- (1) **Skid Resistance:** Refer to initial requirements
- (2) **Thickness:** Refer to initial requirements
- (3) **Width:** The width shall be no less than the nominal width and no greater than 1/8" of the nominal width.
- (4) **Length:** The length shall be no less than the length stated on the manufacturer's packaging.

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SS248-002020-01

May 26, 2023

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 248 – STONE MATRIX ASPHALT CONCRETE

SECTION 248 – STONE MATRIX ASPHALT CONCRETE of the Specifications is amended as follows:

248.02 – Materials (f) is amended by replacing the first paragraph with the following:

Antistripping Additive: An antistripping additive shall be used in all stone matrix asphalt mixes. It may be hydrated lime or a chemical additive from the Materials Division's Approved List No. 7, or a combination of both. When an approved chemical additive is used, it shall be added at a rate of not less than 0.30 percent by weight of the total asphalt content of the mixture unless otherwise indicated on the Department's Approved List No. 7.

Section 248.04 Acceptance is amended by replacing the third, fourth, fifth, sixth paragraphs with the following:

The Contractor shall check and report the percentage of flat and elongated particles (F&E) in the coarse aggregates of the mix design during production. Two of eight sub-lots from the first lot of material shall be selected for F&E verification when the Contractor samples the SMA material for acceptance (gradation and AC content). F&E testing shall be performed in accordance with VTM-121, after the gradation is performed. If passing results are obtained on each sample in the first lot, then F&E testing shall be performed on a frequency of every second lot of material produced (i.e., Lots 3, 5, 7, etc.) by randomly selecting two sub-lots. If the F&E of the mix exceeds the specified limits, the Contractor shall stop production and notify the Engineer. Production shall not resume until the Contractor has taken corrective action and the Engineer has accepted the Contractor's means of correction. Once production has resumed, the Contractor shall determine the F&E of the mix for two consecutive lots by randomly selecting two sub-lots per lot. If passing results are obtained for these two lots, then the F&E testing frequency shall return to every second lot of material produced.

The Contractor shall check and report the VCA of the mix during production for each gyratory sample. If the VCA of the mix equals the VCA of the DRC, the Contractor shall immediately notify the Engineer, document the JMF changes in the Producer Lab Analysis and Information Details (PLAID) website, and provide corrective action. If the VCA of the mix exceeds the VCA of the DRC, the Contractor shall stop production, notify the Engineer, and remove and replace that day's production at no cost to the Department. Production shall not resume until the Contractor has taken corrective action and the Engineer has accepted the Contractor's means of correction.

If the Department determines that the mixture being produced does not conform to the approved job-mix formula or the volumetric properties in Table II-25, based on the Department or the Contractor's test results, the Contractor shall immediately make corrections to bring the mixture into conformance with the approved job-mix formula and Table II-25 or cease paving with that mixture. The Engineer will investigate and determine the acceptability of the mix placed since the previous passing sample.

The finished pavement shall be uniform, free of irregularities and smooth. If irregularities including segregation, rutting, raveling, flushing, fat spots, mat slippage, irregular color, irregular texture, roller marks, tears, gouges, streaks, uncoated aggregate particles, or broken aggregate particles are detected, the Contractor shall immediately notify the Engineer and address the determined irregularities with corrective action. When irregularities are noted, the acceptability of the finished mat shall be determined by the Engineer.

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The Engineer will limit subsequent paving operations using either a revised or another job-mix formula, which has not been verified as described herein, to a test run of 300 tons maximum if such material is to be placed in Department project work. The Engineer will not allow any further paving for the Department using that revised mixture until the acceptability of that mixture has received the Engineer's approval based on the 300-ton constraint.

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SS315-002020-04

June 16, 2023

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 315 – ASPHALT CONCRETE PLACEMENT

SECTION 315 – ASPHALT CONCRETE PLACEMENT of the Specifications is replaced with the following:

315.01 – Description

This work shall consist of constructing one or more courses of asphalt concrete on a prepared foundation in accordance with these Specifications and within the specified tolerances for the lines, grades, thicknesses, and cross sections shown on the plans or established by the Engineer. At the Contractor's option, the asphalt concrete mix may be produced using a warm-mix additive or warm-mix process approved by the Department. When used, the temperature placement limitations for Warm Mix Asphalt (WMA) shall apply.

This work shall also consist of constructing asphalt concrete curb and rumble strips in accordance with these Specifications, plan details, and the Standard Drawings.

315.02 – Materials

- (a) **Asphalt concrete** shall conform to Section 211. The Contractor shall alter the design if SUPERPAVE design densities begin to exceed 98 percent of the Theoretical Maximum Density (TMD) during construction.
- (b) **Asphalt for Tack Coat** shall conform to Section 210 and shall be applied according to Section 310.
- (c) **Asphalt for prime coat** shall conform to Section 210 and shall be applied according to Section 311.
- (d) **Curb backup material** shall be asphalt concrete conforming to any surface or intermediate mixture listed in Table II-13 and Table II-14.
- (e) **Liquid asphalt coating (emulsion) for rumble strips** shall conform to Section 210. The Contractor shall use CSS-1h or CQS-1h asphalt emulsions for centerline rumble strips. The CSS-1h or CQS-1h liquid asphalt may be diluted by up to 30 percent at the emulsion manufacturer's facility.

315.03 – Equipment

- (a) **Hauling Equipment:** Trucks used for hauling asphalt mixtures shall have structurally sound, tight, clean, smooth metal or other non-absorptive, inert material bodies equipped with a positive locking metal tailgate. Surfaces in contact with asphalt mixtures shall be given a thin coat of aliphatic hydrocarbon invert emulsion release agent (nonpuddling), a lime solution, or other release agent materials on the Materials Division's Approved List No. 8. The beds of dump trucks shall be raised to remove excess release agent prior to loading except when a nonpuddling release agent is used. Only a nonpuddling agent shall be used in truck beds that do not dump. Each Contractor truck used for hauling asphalt shall be equipped with a tarpaulin or other type of cover acceptable to the Engineer that shall protect the mixture from moisture and foreign matter and prevent the rapid loss of heat during transportation.
- (b) **Asphalt Pavers:** The asphalt paver shall be designed and recommended by the Manufacturer for the type of asphalt to be placed and shall be operated in accordance with the Manufacturer's

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recommendations. The Contractor shall readily have and maintain on the project site any written recommendations from the Manufacturer of the mix relative to handling and placing of the mixture. In the absence of the Manufacturer's recommendations, the recommendations of the National Asphalt Pavement Association shall be followed. The paver shall be capable of producing a smooth uniform texture, dense joints, and a smooth riding surface even when screed extensions are used.

- (c) **Rollers:** Rollers shall be steel wheel, static or vibratory, or pneumatic tire rollers and shall be capable of reversing without backlash. The Contractor shall operate rollers at speeds slow enough to avoid displacement of the mixture. The number and weight of rollers shall be sufficient to compact the mixture to the required density while it is still in a workable condition. The Engineer will not allow the use of equipment that results in excessive crushing of aggregate or marring of the pavement surface. If the Contractor's equipment mars the surface of the pavement during construction to the extent that imperfections cannot satisfactorily be corrected or produces permanent blemishes, the Engineer will require the Contractor to discontinue the use of that particular equipment and replace that equipment with satisfactory units.
- (d) **Rotary Saw:** The Contractor shall supply a gasoline-powered rotary saw with a carbide blade for cutting test samples from the pavement. The Contractor shall provide gasoline, oil, additional carbide blades, and maintenance for the rotary saw. The Contractor shall cool the pavement prior to sawing the sample. As an alternative, the Contractor may furnish the necessary equipment for coring and testing 4-inch core samples in accordance with VTM-22.
- (e) **Material Transfer Vehicle (MTV):** When required in the Contract, the Contractor shall furnish a self-propelled MTV storage unit capable of receiving material from trucks, storing the material, and transferring the material from the unit to a paver hopper insert via a conveyor system. The paver hopper insert and unit shall have a combined minimum storage capacity of 15 tons. The storage unit or paver hopper insert must be able to remix the material in order to produce a uniform, non-segregated mix having a uniform temperature prior to placing the asphalt material on the roadway surface.

315.04 – Placement Limitations

The Contractor shall not place asphalt concrete mixtures when weather or surface conditions are such that the material cannot be properly handled, finished, or compacted. The surface upon which asphalt mixtures is to be placed shall be free of standing water, dirt, and mud and the base temperature shall conform to the following:

(a) Asphalt Concrete Produced with Warm Mix Asphalt Additives or Processes:

The Contractor shall note on the delivery ticket that the load is Warm Mix Asphalt.

- 1. **When the base temperature is 40 degrees F and above:** The Engineer will permit lay-down at any temperature below the maximum limits given in Section 211.08.
- 2. **When the mixture temperature is below 200 degrees F:** The Contractor will not be allowed to place the material.

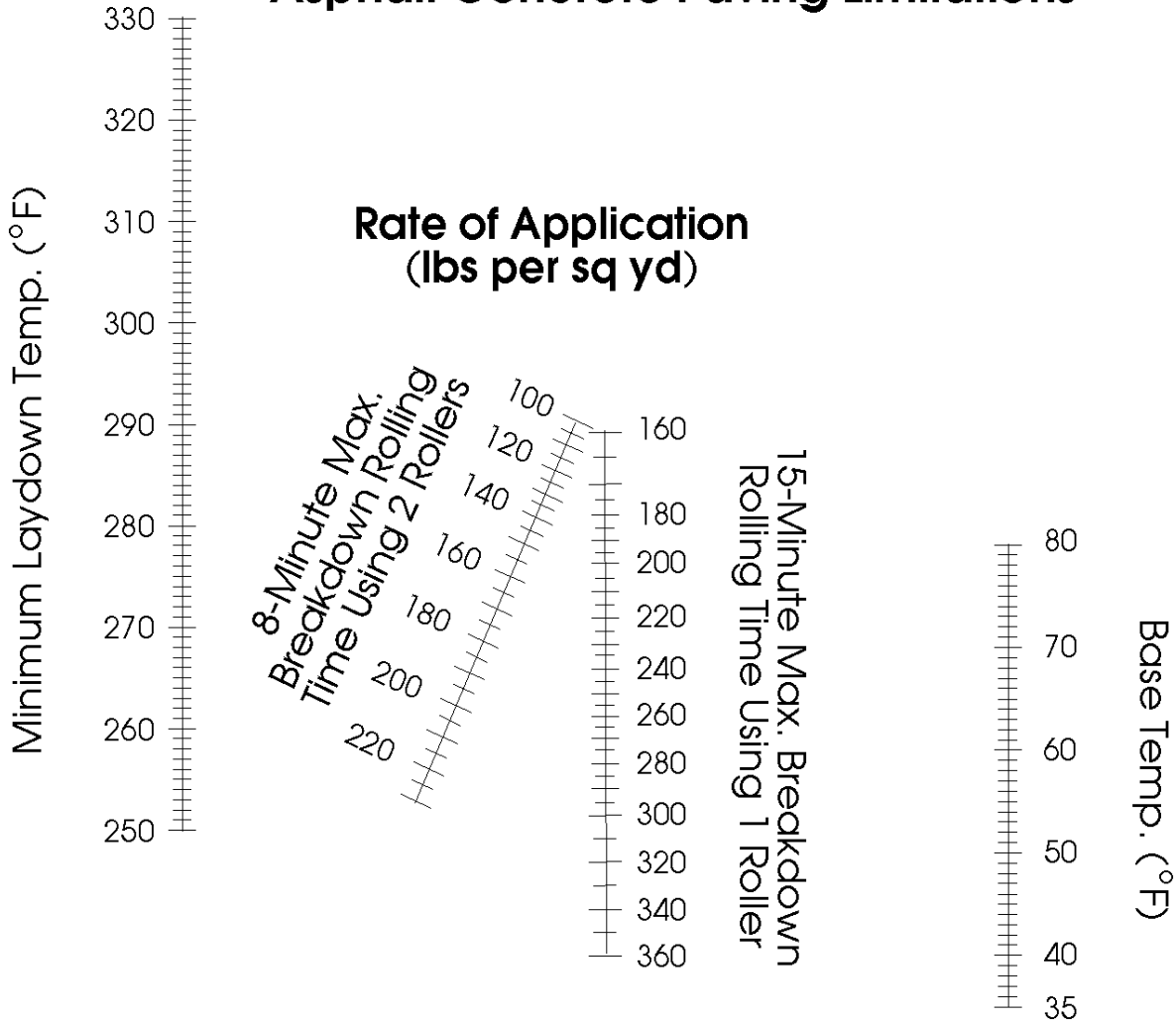
(b) Asphalt Concrete Produced without Warm Mix Asphalt Additives or Processes:

- 1. **When the base temperature is above 80 degrees F:** The Engineer will allow laydown of the mixture at any temperature conforming to the limits specified in Section 211.
- 2. **When the base temperature is between 40°F and 80°F** the Contractor shall use Table III-2 to determine the minimum laydown temperature of the asphalt concrete mixes. At no time shall the

base temperature for base (BM) and intermediate (IM) mixes be less than 40°F. At no time shall the laydown temperature for BM and IM mixes be less than 250°F.

TABLE III-2
Cold Weather Paving Limitations

Asphalt Concrete Paving Limitations



The minimum base and laydown temperatures for surface mixes (SM) shall never be less than the following:

| PG Binder/Mix Designation | Percentage of Reclaimed Asphalt Pavement (RAP) Added to Mix | Minimum Base Temperature | Minimum Placement Temperature |
|---------------------------|---|--------------------------|-------------------------------|
| PG 64S-22 (A) | <=25% | 40°F | 250°F |
| PG 64S-22 (A) | >25% | 50°F ² | 270°F ² |
| PG 64H-22 (D) | <=30% | 50°F ² | 270°F ² |
| PG 64E-22 (E) | <=15% | 50°F ² | 290°F ² |

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| | | |
|---------------|-------|--------------------|
| PG 64S-22 (S) | <=30% | 50°F ² |
| | | 290°F ² |

3. **When the laydown temperature is between 301 degrees F and 325 degrees F:** The number of compaction rollers shall be the same number as those required for 300 degrees F.

Intermediate and base courses that are placed at rates of application that exceed the application rates shown in Table III-2 shall conform to the requirements for the maximum application rate shown for 8-minute and 15-minute compaction rolling as per number of rollers used.

If the Contractor is unable to complete the compaction rolling within the applicable 8-minute or 15-minute period, the Engineer will either require the placing of the asphalt mixture to cease until sufficient rollers are used or other corrective action be taken to complete the compaction rolling within the specified time period.

The Contractor shall complete compaction rolling prior to the mat cooling down to 175 degrees F. Finish rolling may be performed at a lower mat temperature.

The Contractor shall not place the final asphalt pavement finish course until temporary pavement markings will no longer be required.

(c) **SM-4.75 Mixtures Placement:**

1. The minimum placement temperature shall be 290°F regardless of WMA use.
2. The minimum ambient and base temperature shall be 50°F. The Contractor shall employ a MTV during the placement of SM-4.75 mixtures when either the ambient or base temperature is between 50°F and 60°F.

315.05 – Procedures

- (a) **Base Course:** The Contractor shall prepare the subgrade or subbase as specified in Section 305. The Contractor shall grade and compact the course to the required profile upon which the pavement is to be placed, including the area that will support the paving equipment.
- (b) **Conditioning Existing Surface:** The surface on which the asphalt concrete is to be placed shall be prepared in accordance with the applicable specifications and shall be graded and compacted to the required profile and cross section.

When specified in the Contract, before placement of asphalt concrete, the Contractor shall seal longitudinal and transverse joints and cracks by the application of an approved crack sealing material in accordance with Section 322.

1. **Priming and Tacking:** The Contractor shall paint contact surfaces of curbing, gutters, manholes, and other structures projecting into or abutting the pavement and cold joints of asphalt with a thick, uniform coating of asphalt prior to placing the asphalt mixture.

The Contractor shall apply a tack or prime coat of asphalt conforming to the applicable requirements of Section 311 or Section 310 and as specified below. Liquid asphalt classified as cutbacks or emulsions shall be applied ahead of the paving operations, and the time interval between applying and placing the paving mixture shall be sufficient to ensure a tacky residue has formed to provide maximum adhesion of the paving mixture to the base. The Contractor shall not place the mixture on tack or prime coats that have been damaged by traffic or contaminated by foreign material. Traffic shall be excluded from such sections.

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- a. **Priming aggregate base or subbase:** The Engineer will not require priming with asphalt material on aggregate subbase or base material prior to the placement of asphalt base, intermediate or surface layers unless otherwise specified in the Contract.
- b. **Tacking:** Tack at joints, adjacent to curbs, gutters, or other appurtenances shall be applied with a hand wand or with spray bar at the rate of 0.2 gallon per square yard. At joints, the tack applied by the hand wand or a spray bar shall be 2 feet in width with 4 to 6 inches protruding beyond the joint for the first pass. Tack for the adjacent pass shall completely cover the vertical face of the pavement mat edge so that slight puddling of asphalt occurs at the joint, and extend a minimum of 1 foot into the lane to be paved. Milled faces that are to remain in place shall be tacked in the same way for the adjacent pass. Use of tack at the vertical faces of longitudinal joints will not be required when paving is performed in echelon.

The tack coat shall be eliminated on asphalt saturated (rich) sections or those that have been repaired by the extensive use of asphalt patching mixtures when directed by the Engineer.

Tack shall not be required atop asphalt stabilized open-graded material drainage layers.

Tack shall be applied between the existing asphalt surface and each asphalt course placed thereafter.

- 2. **Removing depressions and elevating curves:** Where irregularities in the existing surface will result in a course more than 3 inches in thickness after compaction, the Contractor shall bring the surface to a uniform profile by patching with asphalt concrete and thoroughly tamping or rolling the patched area until it conforms with the surrounding surface. The mixture used shall be the same as that specified for the course to be placed.

When the Contractor elects to conduct operations to eliminate depressions, elevate curves, and place the surface course simultaneously, the Contractor shall furnish such additional spreading and compacting equipment as required to maintain the proper interval between the operations.

- (c) **Placing and Finishing:** The Contractor shall not place asphalt concrete until the Engineer approves the surface upon which it is to be placed.

The Contractor's equipment and placement operations shall properly control the pavement width and horizontal alignment. The Contractor shall use an asphalt paver sized to distribute asphalt concrete over the widest pavement width practicable. Wherever practicable, and when the capacity of sustained production and delivery is such that more than one paver can be successfully and continuously operated, pavers shall be used in echelon to place the wearing course in adjacent lanes. Crossovers, as well as areas containing manholes or other obstacles that prohibit the practical use of mechanical spreading and finishing equipment may be constructed using hand tools. However, the Contractor shall exercise care to obtain the required thickness, jointing, compaction, and surface smoothness in such areas.

The longitudinal joint in one layer shall offset that in the layer immediately below by approximately 6 inches or more. The joint in the wearing surface shall be offset 6 inches to 12 inches from the centerline of the pavement if the roadway comprises two traffic lanes. The joint shall be offset approximately 6 inches from the lane lines if the roadway is more than two lanes in width. The longitudinal joint shall be uniform in appearance. If the offset for the longitudinal joint varies from a straight line more than 2 inches in 50 feet on tangent alignment, or from a true arc more than 2 inches in 50 feet on curved alignment, the Contractor shall seal the joint using a water-proof sealer at no cost to the Department. The Contractor shall recommend a sealant and installation procedure to the Engineer for approval before proceeding. If the offset for the longitudinal joint varies from a straight line more than 3 inches in 50 feet on tangent alignment, or from a true arc more than 3 inches in 50

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feet on curved alignment, the Engineer may reject the paving. The Engineer will not require offsetting layers when adjoining lanes are paved in echelon and the rolling of both lanes occurs within 15 minutes after laydown.

The Contractor shall have a certified Asphalt Field Level II Technician present during all paving operations. Immediately after placement and screeding, the surface and edges of each layer shall be inspected by the Asphalt Field Level II Technician to ensure compliance with the asphalt placement requirements and be straightedged to verify uniformity and smoothness. The Asphalt Field Level II Technician shall make any corrections to the placement operations, if necessary, prior to compaction.. The finished pavement shall be uniform and free of irregularities. If irregularities, including but not limited to segregation or flushing, are identified during the paving operation, the Contractor shall immediately notify the Engineer and address the irregularities with corrective action. If the irregularities continue, the Contractor shall cease the paving operation and not resume until corrective measures have been approved by the Department. When irregularities are noted, the limits of the finished mat shall be determined by the Engineer. The limits of the deficient area of the finished mat shall be removed and replaced at no cost to the Department.

The Contractor's Asphalt Field Level II Technician shall be present during all density testing.

Asphalt concrete placement shall be as continuous as possible and shall be scheduled such that the interruption occurring at the completion of each day's work shall not detrimentally affect the partially completed work. Material that cannot be spread and finished in daylight shall not be dispatched from the plant unless the Engineer approves the use of artificial lighting. When paving is performed at night, the Contractor shall provide sufficient light to properly perform and thoroughly inspect every phase of the operation. Such phases include cleaning planed surfaces, applying tack, paving, compacting, and testing. Lighting shall be provided and positioned so as to not create a blinding hazard to the traveling public.

The Contractor shall ensure that the roller does not pass over the end of freshly placed material during the compaction of asphalt concrete except when a transverse construction joint is to be formed. Edges of pavement shall be finished true and uniform.

Asphalt concrete SUPERPAVE pavement courses shall be placed in layers not exceeding five times the Nominal Maximum Aggregate Size (NMAS) in the asphalt concrete. The maximum thickness may be reduced if the mixture cannot be adequately placed in a single lift and compacted to the required uniform density and smoothness. The minimum thickness for a pavement course shall be no less than 2.5 times the NMAS of the asphalt concrete. The NMAS for each mix shall be defined as one sieve size larger than the first sieve to retain more than 10 percent aggregate as shown in the design range specified in Section 211.03, Table II-13. The Contractor may place base courses in irregularly shaped areas of pavement such as transitions, turn lanes, crossovers, and entrances in a single lift.

The Contractor shall square up overlays in excess of 220 pounds per square yard or lanes with a milled depth greater than 2 inches prior to opening to traffic.

The Contractor shall cut drainage outlets through the shoulder at locations the Engineer designates, excluding curb and gutter sections, on the milled roadway areas that are to be opened to traffic. Plan and prosecute the milling operation to avoid trapping water on the roadway and restore drainage outlets to original grade once paving operations are completed, unless otherwise directed by the Engineer. The cost for cutting and restoring the drainage slots in the roadway shoulder shall be included in the price bid for other items of work.

The Contractor shall plan and prosecute a schedule of operations so that milled roadways shall be overlaid with asphalt concrete as soon as possible. In no instance shall the time lapse exceed 14 days after the milling operations, unless otherwise specified in Section 515 or other provisions in the contract. The Contractor shall keep milled areas of the roadway free of irregularities and obstructions that may create a hazard or annoyance to traffic in accordance with Section 104.

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The Contractor shall use a short ski or shoe to match the grade of the newly overlaid adjacent travel lane on primary, interstate, and designated secondary routes. Unless otherwise directed by the Engineer, a 24-foot minimum automatic grade control ski shall be used on asphalt mixtures on divided highways, with the exception of overlays that are less than full width and the first course of asphalt base mixtures over aggregate subbases. Care shall be exercised when working along curb and gutter sections to provide a uniform grade and joint.

The Contractor shall construct the final riding surface to tie into the existing surface by an approved method, which shall include the cutting of a notch into the existing pavement. In addition to notching, the Contractor may use an asphalt mix design containing a fine-graded mix to achieve a smooth transition from the new asphalt concrete overlay to the existing pavement, with the approval of the Engineer. The material shall be of a type to ensure that raveling will not occur. The cost for constructing tie-ins in the asphalt concrete overlay shall be included in the asphalt concrete contract unit price.

Prior to application of tack coat and commencement of paving operations if, in the opinion of the Engineer, the existing pavement surface condition may detrimentally affect or prevent the bond of the new overlay, the Contractor shall clean the existing pavement surface of all accumulated dust, mud, or other debris. At no point shall soil, aggregate, or other potential bond breaker material be stored on the pavement surface, unless otherwise approved by the Engineer. If the Contractor wishes to stockpile materials on the pavement surface, the Contractor shall provide documentation to the Engineer for approval on the means and methods that will be used to ensure it will not detrimentally affect or prevent the bond of the next pavement layer. This includes all base, intermediate and surface asphalt layers.

The Contractor shall ensure the surface remains clean until commencement of, and during, paving operations. The cost for cleaning and surface preparation shall be included in the asphalt concrete contract unit price.

The Contractor shall employ a Material Transfer Vehicle (MTV) during the placement of surface mixes (SM) on all Interstate routes. If equipment within the paving train breaks down, paving shall be discontinued once the material on-site has been placed and no more material shall be shipped from the asphalt plant.

When required in the Contract, a MTV shall be used during the placement of designated asphalt mixes on full lane width applications.

- (d) **Compacting:** Immediately after the asphalt mixture is placed, struck off, and surface irregularities are corrected, the mixture shall be thoroughly and uniformly compacted by rolling. Rolling shall be a continuous process, insofar as practicable, and all parts of the pavement shall receive uniform compaction.

The asphalt surface shall be rolled when the mixture is in the proper condition. Rolling shall not cause undue displacement, cracking, or shoving of the placed mixture.

The Contractor shall use the number, weight, and type of rollers sufficient to obtain the required compaction while the mixture is in a workable condition. The sequence of rolling operations and the selection of roller types shall provide the specified pavement density.

Rolling shall begin at the sides of the placement and proceed longitudinally parallel with the center of the pavement, each pass overlapping at least 6 inches, gradually progressing to the crown of the pavement. When abutting a previously placed lane, rolling shall begin at the outside unconfined side and proceed toward the previously placed lane. On superelevated curves, rolling shall begin at the low side and proceed to the high side by overlapping longitudinal passes parallel with the centerline.

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The Contractor shall correct displacements occurring as a result of reversing the direction of a roller or other causes at once by the use of rakes or lutes and the addition of fresh mixture when required. Care shall be taken in rolling not to displace or distort the line and grade of the edges of the asphalt mixture. Edges of finished asphalt pavement surfaces shall be true curves or tangents. The Contractor shall correct irregularities in such areas.

The Contractor shall keep the wheels/drums of the rollers properly moistened with water, water mixed with a very small quantity of detergent or other Engineer approved material to prevent adhesion of the mixture to the rollers. The Engineer will not allow the use or presence of excess liquid on the rollers.

The Contractor shall thoroughly compact the mixture along forms, curbs, headers, walls, and other places not accessible to rollers with hot hand tampers, smoothing irons, or mechanical tampers,. On depressed areas, a trench roller or cleated compression strips may be used under the roller to ensure proper compression.

For SM-4.75 mixes, breakdown rolling shall be accomplished with steel wheel rollers with a minimum weight of 10 tons. SM-4.75 mixes shall receive at least three breakdown roller passes before intermediate and finish rolling.

The Contractor shall protect the surface of the compacted course until the material has cooled sufficiently to support normal traffic without marring.

(e) **Density** will be determined in accordance with Method A for all interstate and limited access routes, and for primary and secondary routes with an ADT of at least 2,000 and at least 20 feet in width. Method B will be used for all other routes. Control Strips will not use Method A or B, but will use the methods described in Section 315.05(e)1a.

1. The Contractor shall perform roller pattern and control strip density testing on surface, intermediate, and base courses in accordance with VTM-76. The Contractor shall have a certified Asphalt Field Technician II perform all density testing.

Density shall be determined with a thin-lift nuclear gauge conforming VTM-81 or from the testing of plugs/cores taken from the roadway where the mixture was placed. Density test locations shall be marked and labeled in accordance with VTM-76. When acceptance testing is performed with a nuclear gauge, the Contractor shall have had the gauge calibrated within the previous 12 months by an approved calibration service. In addition, the Contractor shall maintain documentation of such calibration service for the 12-month period from the date of the calibration service. The required density of the compacted course shall not be less than 98.0 percent or more than 102.0 percent of the target control strip density.

Nuclear density roller pattern and control strip density testing shall be performed on asphalt concrete overlays placed directly on surface treatment roadways and when overlays are placed at an application rate less than 125 pounds per square yard, based on 110 pounds per square yard per inch, on any surface. In these situations, the Engineer will not require sawed plugs or core samples and the minimum control strip density of 92.5 of TMD will not be required. The required density of the compacted course shall not be less than 98.0 percent or more than 102.0 percent of the target control strip.

The Engineer will divide the project into "control strips" and "test sections" for the purpose of defining areas represented by each series of tests.

a. **Control Strip:** Control strips shall be constructed in accordance with these specifications and VTM-76.

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The term *control strip density* is defined as the average of 10 determinations selected at stratified random locations within the control strip.

The Contractor shall construct one control strip at the beginning of work on each roadway and shoulder course and on each lift of each course. The Engineer will require the Contractor to construct an additional control strip whenever a change is made in the type or source of materials; whenever a significant change occurs in the composition of the material being placed from the same source; or when there is a failing test strip. During the evaluation of the initial control strip, the Contractor may continue paving operations, however, paving and production shall be discontinued during construction and evaluation of any additional control strips. If two consecutive control strips fail, subsequent paving operations shall not begin or shall cease until the Contractor recommends corrective actions to the Engineer and the Engineer approves the Contractor proceeding with the corrective action(s). If the Contractor and the Engineer mutually agree that the required density cannot be obtained because of the condition of the existing pavement structure, the target control strip density shall be determined from the roller pattern that achieves the optimum density and this target control strip density shall be used on the remainder of the roadway that exhibits similar pavement conditions.

Either the Engineer or the Contractor may initiate the construction of an additional control strip at any time.

The length of the control strip shall be approximately 300 feet and the width shall not be less than 6 feet. On the first day of construction or beginning of a new course, the control strip shall be started between 500 and 1,000 feet from the beginning of the paving operation. The Contractor shall construct the control strip using the same paving, rolling equipment, procedures, and thickness as shall be used for the remainder of the course being placed.

The Contractor's Asphalt Field Level II Technician shall take one reading at each of 10 stratified random locations. No determination shall be made within 12 inches of the edge of any application width for surface and intermediate mixes or within 18 inches of the edge of any application width for base mixes. The average of these 10 determinations shall be the control strip density recorded to the nearest 0.1 pound per cubic foot. The minimum control strip density shall be determined in accordance with VTM-76.

The control strip shall be considered a lot. If the control strip density conforms to the requirements of 92.5% of TMD for surface, intermediate and base mix, the Engineer will consider the control strip to be acceptable and the control strip density shall become the target control strip density.

If the Engineer determines that the control strip requirements of 92.5% of TMD for surface, intermediate and base mix cannot be met due to in-situ pavement conditions, Method 'B' will be used for acceptance and payment and density adjustments will be waived.

Otherwise, if the density does not conform to the requirements specified of 92.5% of TMD for surface, intermediate and base mix, the tonnage placed in the control strip and any subsequent paving prior to construction of another control strip will be paid for in accordance with Table III-3. If the control strip density is below 88% TMD, then that tonnage shall be removed from the roadway at no cost to the Department. At the discretion of the Engineer, the material may be accepted at 75% of the contract unit price. The Contractor shall take corrective action(s) to comply with the density requirement of a minimum of 92.5% of TMD.

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TABLE III-3
Control Strip Requirement and Payment Schedule for SM, IM and BM mixes

| % TMD | % of Payment |
|--------------------------------|--------------|
| Greater than 96.5 ¹ | 95 |
| 92.5– 96.5¹ | 100 |
| 90.0-92.4 | 90 |
| 88.0-89.9 | 80 |
| Less than 88.0 | Removal |

¹For Base Mix only, the range for 100% pay shall be 92.5-97.0% of TMD.

- b. **Test section (lot):** For the purposes of both Contractor quality control and determining acceptance, the Engineer will consider each day's production as a lot unless the paving length is less than 3,000 linear feet or more than 7,500 linear feet, regardless of the method of acceptance (Method A or B). When paving is less than 3,000 feet, that day's production will be combined with the previous day's production or added to the next day's production to create a lot as described below.

The standard size of a lot will be 5,000 linear feet (five 1,000 foot sublots) of any pass 6 feet or greater made by the paving train for the thickness of the course. If the Engineer approves, the lot size may be increased to 7,500 linear foot lots with five 1,500 foot sublots when the Contractor's normal daily production exceeds 7,000 feet. Pavers traveling in echelon will be considered as two passes. When a partial lot occurs at the end of a day's production or upon completion of the project, the lot size will be redefined as follows:

- If the partial lot contains one or two sublots, the sublots will be added to the previous lot.
- If the partial lot contains three or four sublots, the partial lot will be redefined to be an entire lot.

The Contractor shall test each lot for density by taking a nuclear density gauge reading from two random test sites selected by the Engineer within each sublot. When saw plugs or cores are used to determine acceptance, a single test site will be selected by the Engineer. Test sites will not be located within 12 inches of the edge of any application width for surface and intermediate mixes or within 18 inches of the edge of any application width for base mixes.

The Engineer will compare the average of the subplot density measurements to the target nuclear density, or for plugs and cores, to the target percent of theoretical maximum density achieved on the control strip to determine the acceptability of the lot. The Contractor shall immediately notify the Engineer and institute corrective action if two consecutive sublots produce density results less than 98% or more than 102% of the target control strip density.

Density testing for acceptance will not be performed on areas too thin or irregular to test accurately, such as open-graded friction courses, and wedge-and-leveling courses. Areas that are difficult to compact due to subgrade support or space limitations, including but not limited to crossovers and gore areas, will be placed in accordance with Section 315.05(e)2.

For purposes of density determination, acceptance, and payment, Main Pavement is defined to include travel lanes, shoulders 6 feet or greater, turn lanes, ramps, and acceleration and deceleration lanes.

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(1) Method 'A' (plugs or cores)

Any pay adjustment will only be applied to Main Pavement.

The Contractor shall perform acceptance testing for density for each subplot by obtaining one plug, defined as a sawed 4-inch by 4-inch specimen, or one 4-inch-diameter core, at a single random test site selected by the Engineer. More than one plug or core can be taken if the original sample is damaged.

The sub-lot site shall be marked as described in VTM-76. The bulk specific gravity of the plugs or cores shall be determined in accordance with VTM-6. The density of the plugs or cores shall be determined in accordance with VTM-22, except that the daily Rice values obtained by the contractor for the mix will be used for calculating percent density (instead of using the 5-day running average as noted in VTM-22).

Plugs or cores shall be taken from the pavement during the paving shift and bulked in the presence of the Engineer unless otherwise approved. The Department reserves the right to have the plugs or cores bulked on the project site. In the event of any uncertainty around the bulking procedures or results, the Department further reserves the right to re-bulk the samples. The Contractor will have the right to witness the re-bulking. The Contractor will be responsible for maintaining the cores until approved for disposal by the Department.

The Contractor shall number subplot test sites sequentially per lot, mark these on the pavement, fill them with the paving mixture, and compact them prior to the completion of each day of production.

The Contractor shall clean and straighten any irregular edges before filling and compacting. Liquid tack material shall be applied so it visibly covers all plug or core hole surfaces (sides, bottom, etc.). Asphalt concrete mixture available on the same day of paving, or other permanent patching material as approved by the Engineer, shall be placed into the plug or core hole and compacted with a 10-pound weighted hand tool or greater compactive effort with rollers or other equipment available on-site and approved by the Engineer.

The tonnage of each lot for the pay adjustment will be based on the lot's width and length and the mixture application rate as designated in the Contract or as revised by the Engineer. Payment will be made in accordance with Table III-4A.

TABLE III-4A
Payment Schedule for Method A Lot Densities for SM, IM and BM mixes

| % TMD | % of Payment |
|--------------------------------|--------------|
| Greater than 96.5 ¹ | 95 |
| 92.5 – 96.5 ¹ | 100 |
| 90.0–92.4 | 90 |
| 88.0 – 89.9 | 80 |
| Less than 88.0 | Removal |

¹ For Base Mix only, the range for 100% pay shall be 92.5-97.0% TMD.

If a minimum of 80% of each test section lot's core/plug samples is no lower than 92.5% of TMD and the lot average results in 100% payment, then the Engineer will increase the unit bid price for AC mixture by 5%. BM-25.0D+0.4 and BM-25.0D+0.8 shall not be eligible for five percent pay increase. No increase will be applied if core/plug samples are cut outside of the paving shift unless otherwise approved by the Engineer; any applicable density pay reduction from Table III-4A may still apply.

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If any subplot(s) are lower than 88.0% of TMD then those sublots shall be removed from the roadway at no cost to the Department. If the lot average is below 88.0% of TMD then that test section shall be removed from the roadway at no cost to the Department.

Longitudinal joints shall also be tested for density using a nuclear density gauge at each test site in the subplot. For surface and intermediate mixes, the edge of the gauge shall be placed within 4 inches of the joint. For base mixes, the edge of the gauge shall be placed within 6 inches of the joint. The Contractor shall not place the gauge over top of the joint. The joint density value shall be recorded. The Contractor shall report to the Engineer and institute corrective action if a single longitudinal joint density reading is less than 95% of the target control strip density. The Engineer will not use the values obtained from the joint readings in payment calculation. The Contractor shall furnish the test data developed during the day's paving to the Engineer by the end of the day's operations.

(2) Method 'B' (nuclear gauge)

Any pay adjustment will only be applied to Main Pavement.

The Contractor shall test each lot for density by taking a nuclear density gauge reading from two random test sites selected by the Engineer within each subplot. Test sites will not be located within 12 inches of the edge of any application width for surface and intermediate mixes or within 18 inches of the edge of any application width for base mixes.

The Engineer will compare the average of the subplot density measurements to the target nuclear density, or for cores, to the target percent of theoretical maximum density achieved on the control strip to determine the acceptability of the lot. Once the average density of the lot has been determined, the Engineer will not allow the Contractor to provide additional compaction to raise the average. The Contractor shall immediately institute corrective action if two consecutive sublots produce density results less than 98% or more than 102% of the target control strip density.

Longitudinal joints shall also be tested for density using a nuclear density gauge at each test site in the subplot. For surface and intermediate mixes, the edge of the gauge shall be placed within 4 inches of the joint. For base mixes, the edge of the gauge shall be placed within 6 inches of the joint. The Contractor shall not place the gauge over top of the joint. The joint density value shall be recorded. The Contractor shall report to the Engineer and institute corrective action if a single longitudinal joint density reading is less than 95 percent of the target control strip density. The Engineer will not use the values obtained from the joint readings in payment calculation. The Contractor shall furnish the test data developed during the day's paving to the Engineer by the end of the day's operations.

The tonnage of each lot for the pay adjustment will be based on the lot's width and length and the mixture application rate as designated in the Contract or as revised by the Engineer. Payment will be made in accordance with the requirements of Table III-4B.

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TABLE III-4B
Payment Schedule for Method B Lot Densities

| % of Target Control Strip Density | % of Payment |
|--|----------------------|
| Greater than 102.0 | 95 |
| 98.0 to 102.0 | 100 |
| 97.0 to less than 98.0 | 95 |
| 96.0 to less than 97.0 | 90 |
| Less than 96.0, but (% of Target Control Strip Density x %TMD control strip cores) > 88% | 75 |
| Less than 96.0, and (% of Target Control Strip Density x %TMD control strip cores) ≤ 88% | Removal ¹ |

1. If any lot produces density results less than 96.0% of Target, and (%of Target Control Strip Density x % TMD control strip cores) ≤ 88%, then that lot shall be removed from the roadway at no cost to the Department.

(3) Verification, Sampling, and Testing (VST)

The Engineer at any time on any project may perform lot density verification testing regardless of whether Method A or B is being used for density acceptance. Lot density verification is performed by testing plugs or cores. The Contractor shall be responsible for taking plugs or cores for testing. The Engineer will perform verification testing of the plugs or cores.

On surface, intermediate, and base mixes, the Contractor shall take two plugs or cores per VST lot at locations selected by the Engineer. If the Engineer determines the density of the plugs or cores does not conform to the requirements for the lot in question or the same payment percentage determined by the Contractor's testing for that lot, then the Contractor may request additional sampling to be invoked. The Contractor shall take one additional plug or core from the remaining sublots. Payment for that lot, based on the results of the initial two plugs or cores or referee procedure, will be in accordance with the Table III-4A for Method A on the basis of the percentage of the theoretical maximum density or Table III-4B for Method B on the basis of the percentage of the control strip bulk density achieved.

2. **Surface, intermediate, and base courses** not having a sufficient quantity of material to run a roller pattern and control strip, and unique sections defined on the Plans or within the Contract that are 3500 feet or less and at least 6 feet in width shall be compacted to a minimum density of 92.5 percent as determined in accordance with VTM-22. The Contractor shall be responsible for cutting cores or sawing plugs for testing by the Department. One plug or core shall be obtained within the first 500 feet of small quantity paving and every 1000 feet thereafter for testing by the Department. Plug or core locations shall be randomly selected by the Engineer. If the density is determined to be less than the minimum, the Engineer will make payment in accordance with Table III-5.

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TABLE III-5
Payment Schedule for Surface, Intermediate and Base Courses (Not sufficient quantity to perform density roller pattern and control strip)

| % TMD | % of Payment |
|-------------------------------|----------------------|
| Greater than or equal to 92.5 | 100 |
| 90.0-92.4 | 90 |
| 88.0-89.9 | 80 |
| Less than 88.0 | Removal ¹ |

1. Removal shall be at no cost to the Department.

Any section in which a mixture (e.g., SM-9.0) is being placed at an application rate of less than 125 pounds per square yard (based on 110 pounds per square yard per inch) that does not have a sufficient quantity of material for a roller pattern and control strip shall be compacted by rolling a minimum of three passes with a minimum 8-ton roller. The Engineer will not require density testing.

For asphalt patching or paving widths narrower than 6 feet in width, the minimum density of 91.5 percent of the maximum theoretical density will be determined in accordance with VTM-22. The Contractor is responsible for cutting cores or sawing plugs. One set of cores or plugs shall be obtained within the first 20 tons of material and every 100 tons thereafter for testing by the Contractor or the Department. The Engineer will randomly select plug or core locations. If the density is less than the 91.5 percent, payment will be made on the tonnage within the 20 or 100 ton lot in accordance with Table III-6.

TABLE III-6
Payment Schedule for Surface, Intermediate and Base Courses (Asphalt Patching)

| % TMD | % of Payment |
|-------------------------------|----------------------|
| Greater than or equal to 91.5 | 100 |
| 90.0-91.4 | 95 |
| 88. 1-89.9 | 90 |
| Less than or equal to 88.0 | Removal ¹ |

1. Removal shall be at no cost to the Department.

(f) **Joints:** Transverse joints shall be formed by cutting back on the previous run to expose the full depth of the course. A coat of asphalt shall be applied to contact surfaces of transverse joints just before additional mixture is placed against the previously rolled material.

Joints adjacent to curbs, gutters, or adjoining pavement shall be formed by hand placing sufficient mixture to fill any space left uncovered by the paver. The joint shall then be set up with rakes or lutes to a height sufficient to receive full compression under the rollers.

(g) **Rumble Strips:** This work shall consist of constructing rumble strips or rumble stripes on mainline shoulders or centerlines of highways by cutting concave depressions into existing asphalt concrete surfaces as shown on the Standards Drawings and as directed by the Engineer. Rumble stripes are defined as edgeline or centerline rumble strips with permanent longitudinal pavement markings subsequently installed within the rumble strip grooves.

Rumble strips and rumble stripes shall be installed in accordance with the RS-Series Standard Drawings. The Contractor shall demonstrate to the Engineer the ability to achieve the desired surface regarding alignment, consistency, and conformity with these Specifications and the Standard Drawings before beginning production work on mainline shoulders or centerlines. The test site shall

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be approximately 25 feet longitudinally at a location mutually agreed upon by the Contractor and Engineer.

Pavement markings for rumble stripes shall be applied after the grooves have been cut. The grooves shall be thoroughly cleaned and the surface prepared before pavement marking application, in accordance with the Standard Drawings and Section 704. Overspray of pavement marking materials shall not extend more than one inch beyond the lateral position of the pavement marking line shown in the RS-Series Standard Drawings.

Rumble strips shall not be installed on shoulders of bridge decks, in acceleration or deceleration lanes, on surface drainage structures, or in other areas identified by the Engineer.

Waste material resulting from the operation shall be removed from the paved surface and shall be disposed of in accordance with Section 106.04.

- (h) **Saw-Cut Asphalt Pavement:** This work shall consist of saw-cutting the existing asphalt pavement to a depth as shown on the plans or as directed by the Engineer.
- (i) **Coating designed surface cuts:** Designed Surface Cuts are roadway features installed by cutting or grinding into a road surface, for example, Rumble strips, rumble stripes, and plastic inlaid marker grooves.

Designed Surface Cuts shall be coated with liquid asphalt coating (emulsion) when the Designed Surface Cuts are being cut into an existing asphalt surface (i.e. more than one year since placement); when new Designed Surface Cuts are being cut into the pavement surface in conjunction with a surface treatment, latex emulsion, or slurry seal pavement operation; or when the proposed plant mix surface is less than one inch deep.

Liquid asphalt coating (emulsion) shall not be used when Designed Surface Cuts are being cut into new pavement, or being cut in conjunction with plant mix paving operations where the proposed plant mix surface is one inch or greater in depth.

When liquid asphalt coating (emulsion) is required, the Contractor shall coat the entire rumble strip area with the liquid asphalt coating (emulsion) using a pressure distributor following the cutting and cleaning of the depressions of waste material. For rumble strips installed on the shoulder, the approximate application rate shall be 0.1 gallons per square yard. For centerline rumble stripes and plastic inlaid marker grooves, the approximate application rate shall be 0.05 gallons per square yard. The application temperature shall be between 160 degrees F and 180 degrees F. For shoulder rumble strips and plastic inlaid marker grooves, overspray shall not extend more than 2 inches beyond the width of the cut depressions and shall not come in contact with pavement markings.

If liquid asphalt coating (emulsion) is applied before installation of the plastic inlaid marker, then the bottom of the plunge cut shall be protected during liquid asphalt coating (emulsion) application so as to avoid inhibiting the ability of the marker epoxy to bond to the bottom of the plunge cut. If the liquid asphalt coating (emulsion) is applied after the plastic inlaid marker has been installed, then the retroreflector shall be protected during the liquid asphalt coating (emulsion) application to prevent the coating material from dirtying or damaging the retroreflector, with the protection removed after the coating has been completed.

315.06 – Pavement Samples

The Contractor shall cut samples from the compacted pavement for depth and density testing. Samples shall be taken for the full depth of the course at the locations selected by the Engineer. The removed

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pavement shall be replaced with new mixture and refinished. No additional compensation will be allowed for furnishing test samples and reconstructing areas from which they were taken.

315.07—Pavement Tolerances

- (a) **Surface Tolerance:** The Engineer will test the pavement surface by using a 10-foot straight-edge. The variation of the surface from the testing edge of the straightedge between any two contacts with the surface shall not be more than 1/4 inch. The Contractor shall correct humps and depressions exceeding the specified tolerance or the defective work shall be removed and replaced with new material.
- (b) **Finished Grade Tolerance:** Finished grade elevations shall be within +/-0.04 foot of the elevations indicated in the plans after placement of the final pavement layer unless otherwise specified, provided the actual cross slope does not vary more than 0.20 percent from the design cross slope indicated in the plans, and the plan depth thickness conforms to the thickness tolerances specified herein.

If the Engineer determines either the finished grade elevations or cross slope exceed the specified tolerances, the Contractor shall submit a corrective action plan to the Engineer for approval.

- (c) **Thickness Tolerance:** The thickness of the base course will be determined by the measurement of cores as described in VTM-32.

Acceptance of asphalt concrete base course for depth will be based on the mean result of measurements of samples taken from each lot of material placed. A lot of material is defined as the quantity being tested for acceptance except that the maximum lot size will be 1 mile of 24-foot-width base course.

A lot will be considered acceptable for depth if the mean result of the tests is within the following tolerance of the plan depth for the number of tests taken:

| Plan Depth | 1 test | 2 tests | 3 tests | 4 tests |
|------------|--------|---------|---------|---------|
| ≤4" | 0.6" | 0.5" | 0.4" | 0.3" |
| >4" ≤8" | 0.9" | 0.7" | 0.5" | 0.4" |
| >8" ≤12" | 1" | 0.9" | 0.7" | 0.5" |
| >12" | 1.2" | 1" | 0.8" | 0.6" |

If an individual depth test exceeds the one test tolerance for the specified plan depth, the Engineer will exclude that portion of the lot represented by the test from the lot. If an individual test result indicates that the depth of material represented by the test is more than the tolerance for one test, the Contractor will not be paid for that material in excess of the tolerance throughout the length and width represented by the test. If an individual test result indicates that the depth of the material represented by the test is deficient by more than the one test tolerance for the plan depth, the Contractor shall correct the base course represented by the test as specified hereinafter.

If the mean depth, based on two or more tests, of a lot of material is excessive (more than the plan depth specified in the contract), the Engineer will not pay the Contractor for any material in excess of the tolerance throughout the length and width of the lots represented by the tests.

If the mean depth, based on two or more tests, of a lot of material is deficient (less than the plan depth specified in the contract) by more than the allowable tolerance, the Contractor will be paid for the quantity of material that has been placed in the lot. Any required corrective action will be determined by the Engineer.

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For excessive depth base courses, the rate of deduction from the tonnage allowed for payment as base course will be calculated at a weight of 115 pounds per square yard per inch of depth in excess of the tolerance. For sections of base course that are deficient in depth by more than the one test tolerance and less than two and half times the one test tolerance, the Contractor shall furnish and place material specified for the subsequent course to bring the base course depth within the tolerance. This material will be measured on the basis of tonnage actually placed, determined from weigh tickets, and will be paid for at the contract unit price for the base course material. Such material shall be placed in a separate course. If the deficiency is more than two and half times the one test tolerance, the Contractor shall furnish and place base course material to bring the base course thickness within the tolerance. Corrections for deficient base course depth shall be made in a manner to provide a finished pavement that is smooth and uniform. Sections requiring significant grade adjustments which have been previously identified and documented by the Engineer as being outside of the control of the Contractor will be exempt from deduction or corrective action.

When the Contract provides for the construction or reconstruction of the entire pavement structure, the surface and intermediate courses shall be placed at the rate of application shown on the plans within an allowable tolerance of ± 5 percent of the specified application rate for application rates of 100 pounds per square yard or greater and within 5 pounds per square yard for application rates of less than 100 pounds per square yard. The Engineer will deduct the amount of material exceeding the allowable tolerance from the quantities eligible for payment.

When the Contract provides for the placement of surface or intermediate courses over existing pavement, over pavements constructed between combination curb and gutter, or in the construction or reconstruction of shoulders, such courses shall be placed at the approximate rate of application as shown on the plans. However, the specified rate of application shall be altered where necessary to produce the required riding quality.

315.08 – Measurement and Payment

Asphalt concrete base will be measured in tons and will be paid for at the contract unit price per ton. This price shall include preparing and shaping the subgrade or subbase, constructing and finishing shoulders and ditches, and removing and replacing unstable subgrade or subbase.

Asphalt concrete will be measured in tons and will be paid for at the contract unit price per ton. Net weight information shall be furnished with each load of material delivered in accordance with Section 211. Batch weights will not be permitted as a method of measurement unless the Contractor's plant is equipped in accordance with Section 211, in which case the cumulative weight of the batches will be used for payment.

Asphalt used in the mixtures, when a pay item, will be measured in tons in accordance with Section 109.01 except that transporting vehicles shall be tare weighed prior to each load. The weight will be adjusted in accordance with the percentage of asphalt indicated by laboratory extractions.

Tack coat, when a pay item, will be measured and paid for in accordance with Section 310 of the Specifications. When not a pay item, it shall be included in the price for other appropriate pay items.

Asphalt curb backup material will be measured in tons and will be paid for at the contract unit price per ton. This price shall include placing, tamping, and compacting.

Liquid Asphalt Cement, when a pay item, will be measured in tons in accordance with Section 109.01 except that transporting vehicles shall be tare weighed before each load. When used in the mixture, the weight will be adjusted in accordance with the percentage of asphalt indicated by laboratory extractions.

Warm Mix Asphalt (WMA) additive or process will not be measured for separate payment, the cost of which, shall be included in the contract unit prices of other appropriate items.

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Rumble strips will be measured in linear feet and will be paid for at the contract unit price per linear foot of mainline pavement or shoulder where the rumble strips are actually placed and accepted, excluding the test site. This distance will be measured longitudinally along the center line of pavement (mainline) or edge of pavement (shoulders) with deductions for bridge decks, acceleration/deceleration lanes, surface drainage structures, and other sections where the rumble strips were not installed. This price shall include installing, cleaning up debris and disposing of waste material. The test site will not be measured for payment but shall be included in the unit price for rumble strip.

Liquid asphalt coating will be measured in square yards and will be paid for at the Contract square yard price. This price shall include cleaning Designed Surface Cuts before application of the coating, furnishing and applying coating, and protection of all retroreflectors.

Saw-cut asphalt concrete pavement will be measured in linear feet for the depth specified and will be paid for at the contract unit price per linear foot, which price shall be full compensation for saw-cutting the asphalt pavement to the depth specified, cleaning up debris and disposal of waste material.

These prices for asphalt shall also include heat stabilization additive(s), furnishing samples, and maintaining traffic.

Patching will be paid for at the contract unit price for the various items used unless a reconditioning item is included in the Contract.

Payment will be made under:

| Pay Item | Pay Unit |
|---------------------------------------|-----------------|
| Asphalt concrete base course (Type) | Ton |
| Asphalt concrete (Type) | Ton |
| Asphalt concrete curb backup material | Ton |
| Liquid asphalt cement | Ton |
| Liquid asphalt coating | Square yard |
| Rumble Strip Standard) | Linear foot |
| Saw-cut asphalt concrete (depth) | Linear foot |

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SS321-002020-02

May 4, 2023

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 321 – TRENCH WIDENING

SECTION 321 – **TRENCH WIDENING** of the Specifications is amended as follows:

321.01 – Description

This work shall consist of installing asphalt concrete mixtures into a constructed trench to widen shoulders and travel lanes up to but not including the surface mix in accordance with the Plans and Specifications and as directed by the Engineer.

321.02 – Material

- (f) **Materials** shall conform to Section 211.02 and 315.02.
- (g) **Trench widening material** IM-19.0A shall be used for IM-19.0A(T) and IM-19.0D shall be used for IM-19.0D(T). Where BM-25.0(T) is designated, either BM-25.0A or BM-25.0D shall be used by the Contractor.

321.03 – Placement Limitations

The Contractor shall not place asphalt concrete mixtures when weather or surface conditions are such that the material cannot be properly handled, finished, or compacted. The surface upon which asphalt concrete mixtures is to be placed shall be free of standing water, dirt, and mud and the base temperature shall conform to Section 315.04.

321.04 – Procedure

- (a) **Trench Widening Route Types:** The minimum lift density as determined according to VTM-22 is based on the type of trench widening as defined below and specified in the Contract. Where trench widening is 2 feet in width, compaction may be performed with small single drum walk-behind rollers or other mechanical means acceptable to the Engineer.
 - 1. **Type 1:Paved Shoulder Only** shall be installed on routes where the widening will serve as a paved shoulder and will not be subjected to constant traffic. The painted edge line will not be on the trench widening. The minimum density requirement will not be enforced and plugs/cores are not required for this type of trench widening. Steel double drum rollers weighing at least 8 tons shall perform compaction of the asphalt concrete. At least five passes shall be completed.
 - 2. **Type 2:Widened Travel Lane and Paved Shoulder** shall be installed on routes where the widening will serve as a wider travel lane and paved shoulder that will be subjected to traffic. The widening will not include removal of existing travel lane pavement, i.e., inside the edge line marking. The painted edge line will be on the trench widening. The minimum density applies to this type of trench widening.
 - 3. **Type 3:Repaired Travel Lane and Paved Shoulder** shall be used on routes where the widening will include a portion of the existing travel lane, serve as a paved shoulder and will be subjected to traffic as a part of the travel lane. The widening will include removal of existing pavement, i.e., inside the edge line marking. The painted edge line will be on the trench widening. The minimum density applies to this type of trench widening.

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(b) Trench widening routes shall be widened by trenching on one or both sides of the existing roadway and placing Trench Widening Material in accordance with the width and depth specified for that route.

The depth of the base course will be determined by the measurement of cores as described in VTM-32 and 315.07(c), unless otherwise approved by the Engineer. Any remaining material, after final grading, shall be classified as excess material, and will be disposed of according to Section 106.04 of the Specifications or as directed by the Engineer.

The trench shall be shaped to have vertical sides with the width, depth and type specified in the Contract (2-foot minimum to 6-foot maximum width); be free of excess material; and shall be tacked against the existing pavement side before Trench Widening Material is placed.

The Contractor shall ensure that disruption to driveways, entrances, mailboxes, and intersections are minimized and that precautions are taken to ensure that roadway drainage does not pond on the roadway surface.

321.05 – Acceptance

Where density requirements apply, the Contractor is responsible for cutting cores or sawing plugs for density testing. One plug or core per course of material shall be obtained within the first 500 feet and every 2,500 feet thereafter of the trench widening route for testing by the Contractor or the Department. Core and plug locations shall be randomly selected within each section. If the density achieved is less than 91.5% of the maximum theoretical density for the Type 2 or 3 trench widening routes, payment adjustment will be made on the actual tonnage within the 500- or 2,500-foot lot according to Table III-6 in Section 315.

321.06- Measurement and Payment

Asphalt Concrete Type BM-25.0(T), IM-19.0A(T) or IM-19.0D(T) will be measured in tons and will be paid for at the Contract ton price. This price shall include furnishing and placing the Trench Widening Material, trenching, tack, grading and disposing of excess material.

Payment will be made under:

| Pay Item | Pay Unit |
|-----------------------------------|-----------------|
| Asphalt Concrete Type BM-25.0(T) | Ton |
| Asphalt Concrete Type IM-19.0A(T) | Ton |
| Asphalt Concrete Type IM-19.0D(T) | Ton |

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SS407-002020-02

November 1, 2022

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 407 – STEEL AND OTHER METAL STRUCTURES

SECTION 407 – STEEL AND OTHER METAL STRUCTURES of the Specifications is amended as follows:

Section 407.04 – Fabrication Procedures is amended by replacing the seventh, eighth, and ninth paragraphs with the following:

The Contractor shall furnish a complete mill analysis showing chemical and physical results from each heat of steel for all units prior to fabrication. Before cutting, pieces of steel other than steel conforming to ASTM A709, Grade 36, that are to be cut to smaller-sized pieces shall be legibly marked with the ASTM A6 specification identification color code or the material specification designation. The identification color code of the latest system adopted under ASTM A6 shall be used to identify material. Any markings that indicate direction of roll shall be transferred to each new piece before cutting the new piece from the larger plate.

If requested by the Engineer, the Contractor shall furnish an affidavit from the fabricator certifying that the fabricator has marked and maintained the identification of steel in accordance with these specifications throughout the fabrication operation.

Section 407.06(c) – Assembly of Structural Connections Using High-Strength Bolts is amended by replacing the first paragraph with the following:

Assembly of Structural Connections Using High-Strength Bolts: Field connections shall be made with high-strength bolts 7/8-inch in diameter fabricated in accordance with ASTM F3125, Grade A325 unless otherwise specified. The Engineer will give consideration to the substitution of adequately designed welded connections if requested in writing by the Contractor.

Section 407.06(c)1 – Bolts, nuts, and washers is replaced with the following:

Bolts, nuts, and washers: Bolts, nuts, and washers shall conform to Section 226 and shall each be from one manufacturer on any one structure unless otherwise approved by the Engineer. In addition, each bolt, nut, and washer combination, when installed, shall be from the same rotational-capacity lot. Prior to installation, the Contractor shall perform a field rotational-capacity test on two nut, bolt, and washer assemblies for each diameter and length in accordance with VTM 135. Bolts fabricated in accordance with ASTM F3125, Grade A490 and galvanized bolts fabricated in accordance with ASTM F3125, Grade A325 shall not be reused. Retightening previously tightened bolts, which may have been loosened by the tightening of adjacent bolts, shall not be considered a reuse. Other bolts may be reused only if approved by the Engineer. Threads of plain (uncoated) bolts shall be oily to the touch when installed. Galvanized nuts shall be lubricated by lubricant containing a visible dye. Threads of weathered or rusted bolts shall be cleaned of loose rust, scale, and debris and relubricated. Lubricant shall be as recommended by the fastener manufacturer.

Section 407.06(c)3 – Installation is amended by replacing the second paragraph with the following:

When bolts fabricated in accordance with ASTM F3125, Grade A490 are used with steel having yield points less than 40 kips per square inch, hardened washers shall be installed under the nut and bolt head.

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Section 407.06(c)3 – Installation is amended by replacing the eighth paragraph with the following:

The required minimum bolt tension is equal to 70% of specified minimum tensile strengths of bolts rounded to the nearest kip as specified in ASTM F3125 for Grades A325 and A490. *Snug tight* is defined as the tightness attained when a power wrench begins to impact solidly or when the bolts are firmly hand tightened with a spud wrench such that the complete area of the connecting surfaces are brought into firm contact with each other. Snug tightening shall progress systematically from the most rigid part of the connection to the free edges, and then the bolts of the connection shall be retightened in a similar systematic manner as necessary until all bolts are simultaneously snug tight and the connection is fully compacted.

Section 407.06(c)3b – Direct Tension Indicators (DTI) is amended by replacing the first paragraph with the following:

Direct Tension Indicators (DTI): Direct tension indicator washers shall be used for all high strength bolts, and installation shall be in accordance with Section 407.06(c)3; however, the indicator washer shall not be considered a substitute for the required hardened washer under the turned element. The indicator washer may be considered a substitute for the hardened washer required under the unturned element when bolts conforming to ASTM F3125, Grade A490 are used with steel conforming to ASTM A709, Grade 36. Direct tension-indicator washers shall not be painted or coated with any epoxy or similar material prior to installation. The normal installation shall consist of the load indicator washer being placed under the unturned bolt head or unturned nut. However, if conditions require installation under the turned bolt portion, a hardened flat washer or nut face washer shall be fitted against the tension-indicating protrusions. Tension-indicating washers shall not be substituted for the hardened washers required with short-slotted or oversized holes but may be used in conjunction with them.

Table IV-3 – Bolt Tension is replaced with the following:

TABLE IV-3
Bolt Tension

| Bolt Size | Required Min. Bolt Tension (lb.) | |
|-----------|----------------------------------|------------------|
| | Grade A325 Bolts | Grade A490 Bolts |
| 1/2 | 12,000 | 15,000 |
| 5/8 | 19,000 | 24,000 |
| 3/4 | 28,000 | 35,000 |
| 7/8 | 39,000 | 49,000 |
| 1 | 51,000 | 64,000 |
| 1 1/8 | 56,000 | 80,000 |
| 1 1/4 | 71,000 | 102,000 |
| 1 3/8 | 85,000 | 121,000 |
| 1 1/2 | 103,000 | 148,000 |

Section 407.06(i) – Finishing is amended by replacing the third paragraph with the following Areas of weathering steel that are designated to be painted shall be cleaned and coated in accordance with Section 411.

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SS411-002020-01

November 1, 2022

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 411 – PROTECTIVE COATING OF METAL IN STRUCTURES

SECTION 411 – PROTECTIVE COATING OF METAL IN STRUCTURES of the Specifications is amended as follows:

Section 411.06(a) – Shop Coating is amended by inserting the following after the fourth paragraph:

Areas of weathering steel that are designated to be painted shall be thoroughly cleaned to no less than 6 inches outside the designated area and coated with an approved System B, Group I coating system.

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SS512-002020-03

July 1, 2022

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 512 – MAINTAINING TRAFFIC

SECTION 512 – MAINTAINING TRAFFIC of the Specifications is amended as follows:

Section 512.02(f) – Temporary (Construction) signs is replaced with the following:

Temporary (Construction) signs shall have retroreflective sign sheeting in accordance with Sections 247 and 701.

Sign substrates for rigid temporary signs and temporary overlay panels shall be fabricated of either aluminum at least 0.080-inches thick, conforming to Section 229.02(a); 0.4-inch-thick corrugated polypropylene; 0.4-inch-thick corrugated polyethylene plastic; or 0.079-inch-thick aluminum/plastic laminate as approved by the Engineer. Sign substrates shall be smooth, flat, and free of metal burrs or splinters.

Sign substrate materials for signs mounted on drums, Type 3 barricades, and portable sign stands shall be as specified below and shall be the same material that was used when the device was approved in accordance with National Cooperative Highway Research Program (NCHRP) Report 350 or MASH.

Sign Substrates for Type 3 Barricades and Portable Sign Stands

Rollup sign
0.4 inch thick corrugated polypropylene or polyethylene plastic
0.079 inch thick aluminum/plastic laminate

Sign Substrates for Drums

0.4 inch thick corrugated polypropylene or polyethylene plastic

Section 512.03 – Procedures is amended by replacing the sixth and seventh paragraphs with the following:

The Contractor shall correct ineffective or unacceptable work zone traffic control devices immediately unless allowed otherwise by the Contract.

The color of Automated Flagger Assistance Device trailers, arrow board trailers, portable traffic control signal trailers, ITS trailer equipment, and portable changeable message sign trailers and sign frames shall be either Virginia highway orange (DuPont Color No. LF74279 AT or color equivalent) or federal yellow. The back traffic facing trailer frame, where the signal and brake lights are located, shall be fully covered with 2 inch high retroreflective sheeting conforming to Section 247.02(c). The sheeting shall have alternating 11 inch wide vertical red stripes and 7 inch wide vertical white stripes.

The Contractor shall locate, remove, and dispose of all existing asphalt-embedded Snowplowable Raised Pavement Marker (SRPM) castings which lie within a travel lane that has been shifted during construction for three months or longer. The cavity left by the removal of the existing marker shall be cleaned of debris, filled with an approved mix design for resurfacing or material found on the Department's Approved List 78, and compacted before shifting traffic.

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Section 512.03(a) – Temporary Signs is replaced with the following:

Temporary Signs: The Contractor shall furnish, install, remove, relocate, and maintain temporary signs and sign panels necessary for prosecution of the work which shall include but not be limited to, maintenance of traffic, off project detour signs, and begin and end of road work signs for construction, maintenance, permit, utility, and incident management activities. Installation shall be in accordance with Section 701. The Contractor shall also furnish and install those signs not listed in the *VWAPM*, the *MUTCD*, or the Contract (such as “Turn Lane Open with arrow” and “Grooved Pavement Ahead”) that may be required by the Engineer.

Signs shall be fabricated in accordance with the *MUTCD*, *VWAPM*, the FHWA Standard Highway Signs and Markings book (including its Supplement), and the Virginia Standard Highway Signs book. If the Contractor proposes a sign message not included in the Plans, *VWAPM*, or *MUTCD*, then the Contractor shall submit a sign fabrication detail to the Engineer for approval before fabrication. The sign fabrication detail shall include sign size, legend, font, legend dimensions, radius, border, margins, sheeting type, and colors.

The Contractor shall relocate, cover, uncover, remove, and reinstall existing signs that conflict with the signs needed for maintenance of traffic. Covering of existing signs shall be accomplished in accordance with Section 701.03(d).

The Contractor shall ensure an unrestricted view of sign messages. The Contractor shall furnish and install flags for temporary signs, as directed by the Engineer; however flags will not be required for use on portable sign supports.

Sign location, lateral placement, and mounting height shall conform to the *VWAPM*, the *MUTCD*, the Contract, and as directed by the Engineer. The Contractor shall furnish all sign supports and hardware for use with temporary signs.

When the sign sequence is not provided in the plans, either by illustration or reference to a typical traffic control figure in the *VWAPM*, the Contractor shall submit a sketch of his proposed sign sequencing and positioning to the Engineer for approval before installation.

Temporary signs shall be mounted using wooden post supports, square tube sign post supports, or portable sign stands, except where noted otherwise on the Plans. Portable sign stands shall not be used longer than three consecutive days (72 continuous hours). Wooden and square tube post installations shall be in accordance with Standard Drawing WSP-1.

Portable sign stands manufactured on or before December 31, 2019 may be used if they are in good working condition, conform to NCHRP Report 350 Test Level 3 or MASH, and are a product shown on the Traffic Control Device Pre-Approval list. Portable sign stands manufactured after December 31, 2019 shall conform to MASH and shall be a product shown on the Department’s Approved List for MASH Approved Products. The Contractor shall submit a certification letter stating the brands and models of portable sign stands to be used along with a copy of the certification letters indicating compliance with NCHRP Report 350 Test Level 3 or MASH. Portable sign stands shall support a 20 square foot sign in sustained winds of 50 mph or wind gusts of passing vehicles without tipping over, walking, or rotating more than ± 5 degrees about its vertical axis.

Portable sign stands shall include decals, stenciling, or some other durable marking system that indicates the manufacturer and model number of the stands. Such marking shall be of sufficient size so it is clearly legible to a person in a standing position.

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The Contractor shall erect, maintain, move, and be responsible for the security of sign panels and shall ensure an unrestricted view of sign messages for the safety of traffic.

Section 512.03(g)2b(1) – Drums is replaced with the following:

Drums shall be round or partially round; made from plastic; have a minimum height of 36 inches; have a cross-sectional width no less than 18 inches in any direction; have a closed top; and shall conform to the VWAPM. Drums shall be designed to allow for separation of ballast and drum upon vehicular impact but not from wind and vacuum created by passing vehicles. The base of the unit height shall not exceed 5 inches. Two-piece drums may have a flared drum foundation, a collar not exceeding 5 inches in height and be of suitable shape and weight to provide stable support. One-piece drums that comply with these requirements may be used.

The Contractor shall furnish and install signs (Stop, Chevron, keep Right, etc.) for drums when directed by Engineer. Signs used on drums shall be tested for conformance with NCHRP 350, Test Level 3, and/or MASH requirements and shall be made of the same material used in the test. The Contractor may use other materials allowed by the FHWA acceptance letter when approved by the Engineer.

Section 512.03(g)2b(3) – Direction indicator barricades is deleted.

Section 512.03(h) –Traffic Barrier Service is replaced with the following:

Traffic Barrier Service shall be of sufficient length to provide anchorage and protection of traffic and personnel in work areas.

The Contractor shall begin continuous progressive prosecution of the work protected by the barrier once the barrier is in place until its completion. If the Contractor ceases to continuously prosecute such work, the Engineer may cause the Contractor to discontinue operations in other areas on the project and concentrate work efforts behind the traffic barrier service until that work is completed. The Contractor shall remove the traffic barrier service when the Engineer determines work is completed to the extent that traffic barrier service is no longer required.

While performing work activities, workers and equipment shall remain behind the protection of the traffic barrier service except as approved by the Engineer. Work outside traffic barrier service protection shall only proceed under the protection and direction of approved traffic control devices or flagger service to safeguard workers and traffic in advance of and at the point the traffic barrier service is opened for ingress or egress adjacent to the travel lane. The Engineer will not permit any equipment extending into an open travel lane.

Barrier openings for access to the work area may be provided only along tangent sections or along curved sections on the inside of traffic and shall be limited to the minimum length required for equipment access. The Contractor shall delineate and maintain normal pavement alignment at the barrier opening with Type D pavement marking.

At ingress openings, the exposed end of the barrier service shall be provided with a temporary impact attenuator approved by the Engineer. At egress openings, the exposed end shall be transitioned at a rate that complies with the VWAPM. For speeds below 30 mph, the transition flare rate shall be the same as that indicated for 30 mph. An impact attenuator will not be required at the exposed end of egress openings in barrier service provided the deflection angle between the pavement edge and the ends of the barrier service openings is 20 degrees or more.

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Repairs to traffic barrier service shall match existing barrier so that positive connections can be maintained.

Delineators and barrier panels shall have reflectorized sheeting conforming to Section 247, shall be from the Department's Approved List 23, and shall be installed on traffic barrier service in accordance with the VWAPM.

The Contractor shall maintain the structural integrity of the barrier and its alignment while it is in use and shall maintain any associated warning lights, barrier delineators, barrier panels, and other devices in functional, clean and visible conditions at all times.

1. **Guardrail barrier service and terminal treatments** shall be installed in accordance with Section 505 except that the offset distance shall be as specified by the Engineer. The Contractor may be permitted to reuse guardrail or its hardware used for traffic barrier service guardrail for permanent installation provided the guardrail material is acceptable to the Engineer and conforms to Section 505 and the Standard Drawings for such guardrail. Marred galvanized surfaces shall be repaired in accordance with Section 233. Terminal treatments shall be permanently identified with a device specific Manufacturers' identification number by stamping or marking with a durable weather resistant material in accordance with § 33.2-274.1 of the Code of Virginia.
2. **Traffic barrier service** (concrete or longitudinal steel) shall be installed in accordance with the Plans and Standard Drawings or as directed by the Engineer, who will design according to Appendix A of the VWAPM. When traffic barrier ends at guardrail, fixed object attachment methods for construction zone shall be used to connect the barrier to the guardrail. Installation shall include additional guardrail posts and attachments as required. The traffic barrier, at a minimum, shall be tapered with the end of the barrier located behind the adjacent guardrail post in accordance with the VWAPM. Barrier connections shall be snug to prevent motion between sections.

Traffic barrier service used as a parapet shall be anchored as shown on the Plans or Section 500 of the Standard Drawings. Anchor holes in bridge decks shall be drilled with a rotary impact drill or other approved equipment that will limit damage to the deck. Anchor holes shall be located to avoid cutting reinforcing steel. Upon removal of the parapet, anchor holes shall be cleaned and filled with Type EP-4 or EP-5 epoxy mortar conforming to Section 243.

The Department will not permit the use of concrete traffic barrier service for permanent installations on bridge structures.

Traffic barrier service sections manufactured on or before December 31, 2019 and successfully tested to NCHRP 350 or MASH 2009 may be used until December 31, 2029, if they are in good working condition, and are a product shown on the Department's Approved Lists for NCHRP-350 or MASH Approved Products. Traffic barrier service sections manufactured after December 31, 2019, and all products in use after December 31, 2029, shall conform to MASH 2016 or its successor, and shall be from the Department's Approved List for Provisionally Approved MASH Products. All traffic barrier service runs shall be interlocking barrier of the same design or type.

The Contractor shall visually inspect all traffic barrier service shipped to a project before placing it in use. Concrete barrier sections shall be structurally sound with no concrete missing along the top, bottom, sides, or end sections of the barrier; no through cracks; and no exposed rebar. The Contractor shall promptly remove any traffic barrier service found by the Contractor or Engineer to be unacceptable due to inadequate structural integrity or functionality and replace the concrete barrier service at no cost to the Department.

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Concrete barrier service shall be cleaned or coated sufficiently to afford good visibility and uniformity of appearance.

The Engineer will review and must approve the layout and anchorage method for job specific applications before the barrier is authorized for installation.

With the approval of the Engineer, the Contractor may use additional traffic barriers for his convenience but at his own expense.

Section 512.03(i) – Impact Attenuator Service is replaced with the following:

Impact Attenuator Service: The Contractor shall install impact attenuator service at locations shown on the Plans or designated by the Engineer. An object marker for temporary impact attenuator shall be installed on the attenuator according to the details shown in the Standard Drawings. The object marker for impact attenuator service shall have reflective sheeting conforming to Section 247 featuring alternating diagonal black and orange 3 inch stripes sloping downward at an angle of 45 degrees in the direction vehicular traffic is to pass. Impact attenuators shall be permanently identified with a device specific Manufacturers' identification number by stamping or marking with a durable weather resistant material in accordance with § 33.2-274.1 of the Code of Virginia.

Impact Attenuator Service not shown on the Plans may be used at the request of the Contractor for the Contractor's convenience at the Contractor's expense.

All impact attenuator service shall be reviewed and approved by the State Location and Design Engineer before installation.

Impact Attenuators manufactured on or before December 31, 2019 and successfully tested to NCHRP 350 or the MASH 2009 may continue to be used until December 31, 2029. Impact Attenuators manufactured after December 31, 2019 shall meet MASH 2016 and shall be from the Department's Approved List for Provisionally Approved MASH Products.

Section 512.03(j)2c – Equipment is replaced with the following:

12 inch aluminum or polycarbonate traffic signal head sections with backplates mounted in the vertical display arrangement. Signal head sections may be mounted in the horizontal display arrangement when approved by the Engineer. Signal head sections and backplates shall conform to Section 238.

Section 512.03(k) – Temporary (Construction) Pavement Markings is replaced with the following:

Temporary (Construction) Pavement Markings shall be installed at locations shown on the Plans, the *VWAPM*, and as directed by the Engineer. Temporary pavement markings shall conform to Section 704 and be selected from the Department's Approved List 17. Temporary pavement markings are classified as Type A or B (temporary markings), Type D, Class III (removable tape), Type E (non-reflective black removable tape), and Flexible Temporary Pavement Markers (FTPMS).

The Contractor shall install temporary pavement markings in accordance with the manufacturer's recommendations, except that if the manufacturer's recommendation for material thickness and quantity of beads is less than that used when the material was tested by the NTPEP, the minimum product application rates shall conform to the NTPEP approved test rates for the specific marking. The Contractor shall furnish a copy of the manufacturer's installation

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recommendations, including the NTPEP data for product thickness and glass bead quantities to the Engineer.

The Contractor shall maintain the temporary pavement markings and shall correct any deficient markings by reapplying markings as directed or needed. The Department considers deficient any temporary pavement markings that provide inadequate guidance to motorists due to inadequate retroreflectivity, color qualities, or adherence to the pavement. The Engineer will make a visual nighttime inspection of all temporary pavement markings to identify areas where markings have inadequate retroreflectivity. Other deficient qualities may be identified by visual inspection at any time.

Markings that no longer adhere to the pavement, and may cause guidance problems for motorists, or are inadequately retroreflective as determined by the Engineer shall be replaced by the Contractor, with the following exceptions:

- Reapplication of skip line temporary pavement markings is not required unless the pavement marking does not adhere or inadequate retroreflectivity qualities are present for at least two consecutive skip lines.
- Reapplication of centerline (except skip lines) or edge line temporary pavement markings is not required unless the pavement marking does not adhere or inadequate retroreflectivity qualities are present for a continuous section of at least 70 feet.
- Reapplication of transverse markings is not required unless the pavement marking does not adhere or inadequate retroreflectivity qualities are present for a continuous section of at least 3 feet.

The Contractor may take retroreflectivity readings to counter visual observations by the Engineer as the basis for replacement of temporary pavement markings. These measurements shall be taken within 48 hours after the Contractor has been notified of the visual determination by the Engineer of deficient markings. The Engineer will grant additional time to the Contractor when inclement weather prevents accurate measurement of the temporary pavement markings.

The Contractor shall brush any form of debris from the marking before taking the retroreflectivity readings. Retroreflectivity measurements shall be taken in the presence of the Engineer using Contractor furnished equipment conforming to ASTM E1710. A copy of the operating instructions for the reflectometer shall be furnished to the Engineer before taking the measurements. The Contractor shall calibrate and operate the equipment in accordance with the manufacturer's instructions. The photometric quantity to be measured is the coefficient of retroreflected luminance (R_L), which shall be expressed as millicandelas per square foot per footcandle (mcd/sf/fc). Measurements shall be taken at three random locations within each area of markings that are suspected of being inadequately retroreflective. When the length of the questionable visually inspected area is greater than 1 mile, the Contractor shall take measurements at three locations per mile segment or portion thereof. Measurements for all lines shall be taken in the middle of the line horizontally. Measurements for skip lines shall be taken in the middle of their length. Measurements for transverse lines shall be taken outside of the wheel path locations. The Engineer will designate the locations along the line segments where the measurements shall be taken. The Contractor shall make a log of the measurements and their locations and provide a copy to the Engineer. When the average of the three readings for an area is below 100 mcd/sf/fc, the Contractor shall reapply the markings as indicated.

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Temporary (construction) pavement markings found in need of reapplication in accordance with these requirements shall be reapplied by the Contractor at no additional cost to the Department, with the following exceptions:

- Type D markings that have been under traffic for more than 180 days and requires reapplication will be paid for at the contract unit price when reapplied, unless the manufacturer's warranty coverage is still applicable.
- Markings damaged by the Department's snow removal or other maintenance and construction operations will be paid for at the contract unit price.

Deficient temporary pavement markings shall be replaced in the time specified in Section 704 for the maximum duration of unmarked roads.

Eradication for reapplication of Type A or B pavement markings is not required if allowed by the marking manufacturer, if the existing marking is well adhered and the total thickness of the existing and reapplied marking combined will not exceed 40 mils. If not well adhered, 90 percent of the existing markings shall be eradicated before reinstallation of the markings.

Existing Type D markings that are deficient (no longer retaining sufficient retroreflectivity) shall be removed before reapplication of new Type D, Class III markings.

1. **Temporary Type A or B pavement markings** shall be used where the roadway is to be resurfaced before changes in the traffic pattern or where pavement is to be demolished and traffic patterns will not change before demolition.
2. **Type D, Class III pavement markings** shall be used on final roadway surfaces or in areas where traffic patterns are subject to change before pavement is resurfaced, unless otherwise specified in the Contract.

On non-final pavement surfaces, the Contractor may install Type A or B pavement markings when the surface temperature of the pavement is below the manufacturer's minimum application temperature for a Type D pavement marking. In such cases, the Contractor shall select a Type A or B product known to perform the best under those temperature conditions. When a Type A or B pavement marking is used instead of a Type D pavement marking due to the surface temperature being below the manufacturer's minimum application temperature, the Contractor will be paid at the contract unit price for Type D pavement marking. This shall include the Type A or B marking and any necessary eradication of the Type A or B pavement marking.

3. **Type D, Class III contrast pavement markings** shall be used for all longitudinal temporary pavement markings on bridge decks and hydraulic cement concrete riding surfaces if all of the following are met:
 - The road has a speed limit of 45 MPH or greater.
 - The hydraulic cement concrete riding surface in question is at least 200 feet in length.
 - The temporary markings are planned for at least 30 days of use.

Type D, Class III contrast markings are not required for any markings that are parallel to and within one foot of existing guardrail or other longitudinal barrier.

4. **Type E pavement markings** shall be used to cover existing markings in accordance with paragraph (l) herein.

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5. **Flexible Temporary Pavement Markers (FTPMS)** may be used to simulate a temporary pavement marking line on the final surface, as an interim measure until the permanent pavement marking can be installed. FTPMS shall not be used in substitution for lines slated to be in place for more than 30 days.

FTPMS shall conform to Section 235 and shall consist of products from the Department's Approved List 22. All FTPM's shall be new product. FTPMS are suitable for use up to one year after the date of manufacture when stored in accordance with the manufacturer's recommendations.

FTPMS shall include a removable material covering the reflective lens to protect the lens from being obscured or damaged during the paving operation.

FTPMS spacing shall be as follows:

- When simulating solid lines, the FTPMS shall be placed every 20 feet.
- When simulating double lines, pairs of side-by-side FTPMS shall be placed every 20 feet.
- When simulating broken lines with a 10-foot-skip/30-foot-gap pattern, 3 FTPMS shall be used per skip (5 feet between each FTPM), with a 30-foot gap between simulated skips.
- When simulating dotted lines with a 3-foot skip/9-foot-gap pattern, 2 FTPMS shall be used per skip (3 feet between the two FTPMS), with a 9-foot gap between simulated skips.

FTPMS shall not be used to simulate transverse lines, symbol/message markings, or dotted lines with 2-foot dot/6-foot-gap pattern.

The color of FTPM units and their reflective surfaces shall be the same color (white or yellow) as the temporary pavement markings they are being used in substitution for.

FTPMS shall be installed at the same locations that permanent pavement markings will be installed.

For surface treatment, slurry seal or latex emulsion treatment operations, the appropriate FTPMS with protective covering shall be installed before placing the new treatment. The lens protective covering shall be kept in place during the final surface placement to protect the lens from being obscured or damaged by the paving operation. Upon completion of surface treatment, slurry seal or latex emulsion treatment placement, the Contractor shall remove the protective covering from the reflective lens of the FTPMS before leaving the work site. Failure to remove such covering shall result in the non-payment for that portion type (skip or solid) of temporary pavement marking.

For plant mix operations, the appropriate FTPMS shall be installed on the newly-placed pavement after the pavement is thoroughly compacted and has cooled to the FTPM manufacturer's recommended temperature for installation.

The Contractor shall maintain the FTPMS until the permanent pavement markings are installed. Damaged or missing FTPMS shall be replaced within 24 hours of discovery at the Contractor's expense with new FTPMS of the same manufacturing type, color and model. No more than one FTPM may be damaged or missing out of every skip line or dotted line simulated segment. No two consecutive FTPMS may be damaged or missing on a simulated solid line or double line application, and no more than 30% of the FTPMS may be damaged or missing on any measured 100-foot segment of simulated solid line.

Once applied, FTPMS will be considered for a single use. If a FTPM requires replacement before installation of permanent pavement markings, it shall be properly disposed of and replaced with a new FTPM at no additional cost to the Department.

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FTPMS shall be removed and properly disposed of when permanent pavement markings are installed. Used FTPMS removed from the pavement, including all containers, packaging, damaged FTPM's and all other miscellaneous items of waste, shall be appropriately disposed of in accordance with Section 106.04.

Section 512.03(I) – Eradicating Pavement Markings is replaced with the following:

Eradicating Pavement Markings: Markings that may conflict with desired traffic movement, as determined by the Engineer, shall be eradicated as soon as practicable: either immediately before the shifting of traffic or immediately thereafter and before the conclusion of the workday during which the traffic shift is made. Work shall be done in accordance with Section 704 except as noted herein.

The Contractor shall perform eradication by grinding, blasting, or a combination thereof. Blasting may be performed using water blasting, sand blasting, hydroblasting (combination of sand and water), or shot blasting. Water blasting and hydroblasting shall be done with equipment that includes a vacuum recovery system and capability to adjust the water pressure.

The Contractor may submit other methods for eradication for the Engineer's approval; however, the Department will not permit obscuring existing pavement markings with black paint or asphalt as a substitute for removal or obliteration. The Contractor shall minimize roadway surface damage when performing the eradication. The Contractor shall repair the pavement if eradication of pavement markings results in damage to or deterioration of the roadway presenting unsafe conditions for motorcyclists, bicyclists, or other road users. Pavement repair, when required, shall be performed using a method approved by the Engineer.

The Contractor shall ensure workers are protected in accordance with Section 107.17 when eradicating pavement markings.

The Contractor shall vacuum or collect the eradication residue (removed markings, debris, and water) during and immediately after the eradication operation. Dust shall be collected during the entire operation. The Contractor shall ensure that no debris enters inlets or waterways.

Eradication residue from the removal of any pavement markings is considered to be a nonhazardous waste material and shall be disposed of in a properly permitted waste disposal facility in accordance with applicable state and federal laws and regulations. The Department does not require Contractor testing of the eradication residue for the eight Resource Conservation Recovery Act metals.

When markings are removed for lane shifts, transitions, or other areas or conditions required in the VWAPM, 100% of the pavement marking shall be removed.

Type E pavement markings may be used to cover existing markings instead of eradication on asphalt concrete surfaces. The Contractor shall use this material to cover markings as indicated in the Plans or as directed by the Engineer. Type E pavement marking shall be applied in accordance with the manufacturer's recommendations. Type E markings shall not be adhered to the pavement for more than 120 days. Type E markings shall not be used on HCC surfaces or bridge decks.

When eradicating symbols and messages, the entire theoretical box bounding the outermost limits of the markings shall be uniformly eradicated.

Eradication of 24" lines shall be considered nonlinear marking eradication.

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Section 512.03(m) – Temporary Pavement Markers is renamed **Temporary Raised Pavement Markers** replaced with the following:

Temporary Raised Pavement Markers shall be installed with temporary pavement markings where required by the VWAPM and where directed by the Engineer. Temporary raised pavement markers shall not be used with Type E markings.

Temporary raised pavement markers shall be installed at the spacing required by the VWAPM, and as shown on Standard Drawing PM-8. . The Contractor may install two one-way markers instead of each two-way marker at no additional cost to the Department.

Temporary raised pavement markers shall be installed with a hot applied bitumen adhesive, except epoxy may be used on hydraulic cement concrete roadways and non-final surfaces of asphalt concrete roadways. Pavement damage caused by removing markers shall be repaired in kind by the Contractor at no additional cost to the Department.

The Contractor shall replace damaged, ineffective, or missing temporary raised pavement markers upon notification by the Engineer at no additional cost to the Department. Markers damaged by the Department's snow removal operations or other maintenance and construction operations, however, will be paid for at the contract unit price.

Section 512.03(p) –Temporary Pavement Message and Symbol Markings is replaced with the following:

Temporary Pavement Message and Symbol Markings shall be the color, shape, and size required by the MUTCD, Standard Drawing PM-10, and the Plans. The Contractor shall install message and symbol markings in accordance with MUTCD, Section 704, the VWAPM, and the Standard Drawings.

Temporary pavement message and symbol markings shall be installed and maintained using the material specified on the Plans in accordance with Section 512.03(k).

Pavement message/symbol markings shall be installed at locations shown on the Plans and at locations designated by the Engineer.

Temporary pavement message markings shall be maintained in accordance with Section 512.03(k). Retroreflective measurements conforming to Section 512.03(k) shall be taken out of the wheel path locations. The pavement message/symbol marking shall be replaced when the average of the three readings for the symbol/message is below 100 mcd/sf/ft.

Section 512.03(q) – Type 3 Barricades is replaced as follows:

Type 3 Barricades: Type 3 barricades shall conform to NCHRP Report 350, Test Level 3, or MASH. Type 3 barricades shall be selected from those shown on the Department's Traffic Control Device Pre-Approval List. The Contractor shall provide a certification letter stating the brands and models of Type 3 barricades from the list proposed for the project. Instead of using Type 3 barricades on the listing, the Contractor may use other brands and models, if he submits a copy of the FHWA acceptance letter indicating the proposed substitutes complies with Test Level 3 of NCHRP Report 350 or MASH before use.

Type 3 Barricades shall be installed and ballasted in accordance with the VWAPM.

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Section 512.03(r) – Truck-mounted or trailer mounted attenuators is replaced as follows:

Truck-mounted or trailer-mounted attenuators (TMAs): Truck-mounted and trailer-mounted attenuators manufactured on or prior to December 31, 2019 may be used if they are in good working condition, conform to Test Level 3 of NCHRP Report 350 or MASH, and are a product shown on the Department's Approved Lists for NCHRP-350 or MASH Approved Products. TMAs manufactured after December 31, 2019 shall conform to MASH Test Level 3 and shall be a product shown on the Department's Approved List for MASH Approved Products.

The Contractor shall submit catalog cuts/brochures of the TMA and a copy of the certification letter documenting NCHRP 350/MASH compliance of the specific TMA before their use on the project. TMAs shall be permanently identified with a device-specific manufacturers' identification number by stamping or marking with a durable weather resistant material in accordance with § 33.2-274.1 of the Code of Virginia.

The weight of the support vehicle shall be as recommended by the manufacturer of the Truck/Trailer-mounted attenuator. The Contractor shall provide a copy of the manufacturer's recommendations to the Engineer, a copy of the original weigh ticket for the support vehicle, and a self-certification letter stating the support vehicle has not been altered since the original weight ticket was issued. The weigh ticket shall contain adequate information to identify the ticket with the applicable support vehicle. A copy of the self-certification and weigh ticket shall be available in the support vehicle at all times and upon request.

Additional weight may be added to the support vehicle to achieve the range recommended by the manufacturer of the Truck/Trailer-mounted attenuator provided the total weight is properly balanced without overloading any one axle, and is within the Gross Vehicle Weight Recommendation of the support vehicle. The added weight shall be securely attached to the support vehicle to prevent movement during an impact or movement of the vehicle. The additional weight and attachment method shall be self-certified by the Contractor and a copy of the self-certification letter shall be with the support vehicle at all times or a final stage manufacturer's certification sticker may be placed on the inside door of the altered vehicle.

The Truck/Trailer-mounted attenuator shall be no less than 72 inches wide and no more than 96 inches wide. There shall be no additional devices such as signs, lights, and flag holders attached to the Truck/Trailer-mounted attenuator except those that were tested on the Truck/Trailer-mounted attenuator and provided by the manufacturer of the Truck/Trailer-mounted attenuator.

The support vehicle shall have at least one vehicle warning light functioning while in operation in accordance with the VWAPM. When allowed by the VWAPM, an electronic arrow operated in the caution mode may be used with the vehicle warning light. When installing and removing lane closures on a multilane roadway as well as when performing mobile operations, the support vehicle shall be equipped with both vehicle warning lights and an arrow board.

The support vehicle shall be operated and parked in accordance with the manufacturer's recommendations.

Limitations: Traffic control devices shall not be installed from or removed to the Truck/Trailer-mounted attenuator support vehicle. When the Truck/Trailer-mounted attenuator is deployed there shall be no unsecured material in the bed of the support vehicle except the additional secured weight or truck-mounted devices such as an arrow board, a changeable message sign, or truck mounted signs. There shall also be no additional devices such as signs, lights, and flag holders attached to the Truck/Trailer-mounted attenuator except those that were tested on the

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Truck/Trailer-mounted attenuator and provided by the manufacturer of the Truck/Trailer-mounted attenuator.

If the Truck/Trailer-mounted attenuator is impacted, resulting in damage that causes the unit to be ineffective, all work requiring the use of the Truck/Trailer-mounted attenuator shall cease until such time that repairs can be made or the Contractor provides another acceptable unit.

Section 512.03(s) – Portable Changeable Message Signs is amended to replace the second and third paragraphs with the following:

The sign shall be capable of sequentially displaying at least 2 phases of 3 lines of text each with appropriate controls for selection of messages and variable off-on times. Trailer-mounted PCMS shall be capable of displaying 3 lines of 8-character 18-inch text in a single phase, and vehicle-mounted PCMS shall be capable of displaying 3 lines of 8-character 10-inch text in a single phase. Each character module shall at a minimum use a five wide by seven high pixel matrix. The message shall be composed from keyboard entries.

Access to PCMS control mechanisms shall be physically locked at all times when deployed to deter message tampering.

The message shall be legible in any lighting condition. Motorists should be able to read the entire PCMS message twice while traveling at the posted speed.

The sign panel support shall provide for an acceptable roadway viewing height that shall be at least 7 feet from bottom of sign to crown of road.

Section 512.03(w) – Portable Temporary Rumble Strips (PTRS) is replaced as follows:

Portable Temporary Rumble Strip (PTRS):

A PTRS may be made of rubber or recycled rubber. It shall have a recessed, raised or grooved design to prevent movement and hydroplaning. PTRS color shall be in accordance with the VWAPM.

A PTRS shall consist of interlocking or hinged segments of equal length that prevent separation when in use. The combined overall usable length of the PTRS shall be between 10 feet 9 inches and 11 feet. The width of the PTRS shall be 12 to 13 inches. PTRS shall be between 5/8 inch and 1.0 inch in height. The weight of each roadway strip shall be between 100 and 120 pounds. The leading and departing edge taper shall be between 12 and 15 degrees.

Each roadway length of the PTRS shall have either a minimum of one cutout handle in the end of the rumble strip, or an interlocking segment which can be used as a handle for easy deployment or removal.

The manufacturer of the PTRS shall provide a signed affidavit that states the PTRS is able to withstand being run over by an 80,000 pound vehicle and retain its original placement with minor incidental movement of 6 inches or less during an 8 hour deployment. Incidental movement of the PTRS shall be parallel with other rumble strips in an array but shall not move so that its placement compromises the performance and safety of the other rumble strips, workers or the traveling public.

The PTRS shall be installed in accordance with manufacturers installation instructions, without the use of adhesives or fasteners.

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PTRS Placement shall be in accordance with the VWAPM.

Section 512.04 – Measurement and Payment is amended to replace the 13th paragraph with the following:

Impact attenuator service will be measured in units of each and will be paid for at the Contract each price for the type specified. This price shall include installing, maintaining, and removing impact attenuator and object marker. Impact attenuators used with barrier openings for equipment access will not be measured for separate payment but the cost thereof shall be included with other appropriate items. When impact attenuator service is moved to a new location, as directed or approved by the Engineer, the relocated terminal will be measured for separate payment. Payment for impact attenuator service will not be made until the work behind the corresponding barrier service is actively pursued.

Section 512.04 – Measurement and Payment is amended to replace the 16th paragraph with the following:

Temporary pavement markings will be measured in linear feet and will be paid for at the contract linear foot price for the type, class and width specified. This price shall include marking materials, glass beads, adhesive, preparing the surface, maintaining, removing removable markings when no longer required, inspections, and testing.

If the Contractor uses FTPMs to simulate the temporary pavement marking, they will be measured in linear feet and paid for at the linear foot price for the temporary marking material being simulated. That measurement shall represent all FTPMs required for that simulated line marking. No additional payment will be made if the Contractor elects to remove FTPMs and install other temporary pavement markings. This cost shall include furnishing, installing and maintaining the FTPMs, removable covers, surface preparation, quality control tests, daily log, guarding devices, removal, and disposal.

Section 512.04 – Measurement and Payment is amended to replace the 21st paragraph with the following:

Eradication of existing nonlinear pavement markings will be measured in square feet based on a theoretical box defined by the outermost limits of the nonlinear pavement markings as defined in Standard Drawing PM-10. Nonlinear pavement markings shall include but not be limited to, arrows, images, symbols, and messages. Eradication of existing nonlinear pavement markings will be paid for at the contract unit price per square foot. This price shall include removing nonlinear pavement markings, cleanup, and disposing of residue.

Section 512.04 – Measurement and Payment is amended to replace the 30th paragraph with the following:

Portable Temporary Rumble Strip (PTRS) Array will be measured in Days per array and will be paid for at the Contract Day price. An Array shall consist of three rumble strips. This price shall include installing, maintaining, removing devices when no longer required, and relocating throughout the day.

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Section 512.04 – Measurement and Payment is amended by revising the Pay Item Table as follows:

The following pay items are removed:

| Pay Item | Pay Unit |
|---------------------------------|-----------------|
| Portable temporary rumble strip | Each |

The following pay items are inserted:

| Pay Item | Pay Unit |
|---------------------------------------|-----------------|
| Portable temporary rumble strip array | Day |

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SS704-002020-02

May 6, 2022

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 704 – PAVEMENT MARKINGS AND MARKERS

SECTION 704 – PAVEMENT MARKINGS AND MARKERS of the Specifications is amended as follows:

Section 704.02 – Materials is amended to replace the first paragraph with the following:

For Type B, Class VI pavement marking materials that are to be applied to latex emulsion or slurry seal surfaces, the selected Type B, Class VI manufacturer shall be a manufacturer that approves and warrants their product for application on that type of surface.

Section 704.03 – Procedures is amended to replace the second paragraph with the following:

The Contractor shall have a certified Pavement Marking Technician present during all temporary pavement marking, permanent pavement marking, and pavement marker operations, except Flexible Temporary Pavement Marker (FTPM) installation.

Section 704.03 – Procedures is amended to replace the fourth through tenth paragraph with the following:

If the Contractor cannot have permanent pavement markings installed within the time limits specified, the Contractor shall install and maintain temporary pavement markings within the same time limits at no additional cost to the Department until the permanent pavement markings can be installed. Installation, maintenance, and removal or eradication of temporary pavement markings shall be according to Section 512.

The Contractor may mark the locations of proposed permanent markings on the roadway by installing premarking materials. Premarkings may be accomplished by installing removable tape, chalk, or lumber crayons, except pavement markings such as stop lines, crosswalks, messages, hatching, etc., shall be premarked using chalk or lumber crayons. Premarkings for yellow markings may be white or yellow. Premarkings for other colors shall be white.

When tape is used as a premarking material, premarking shall consist of 4- inch by 4-inch-maximum squares or 4-inch-maximum diameter circles spaced at 100-foot minimum intervals in tangent sections and 50-foot minimum intervals in curved sections. At locations where the pavement marking will switch colors (e.g., gore marking) the ends of the markings may be premarked regardless of the spacing.

When the Contractor uses chalk or lumber crayon as a premarking, the entire length of the proposed pavement marking may be premarked.

Premarkings shall be installed so their installation will not affect the adhesion of the permanent pavement markings. When removable tape is used as the premarking material and the lateral location of such premarkings to location of the final pavement markings exceeds 6 inches, the tape shall be removed at no additional cost to the Department.

The Contractor shall exercise caution and protect the public from damage while performing pavement marking operations. The Contractor shall be responsible for the complete preparation of the pavement surface, including, but not limited to, removing dust, dirt, loose particles, oily residues, curing compounds, concrete laitance, residues from eradication, and other foreign matter immediately before installing pavement markings. The pavement surface shall be clean and dry at the time of pavement marking installation and shall be tested in accordance with VTM

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94 before permanent installation, with the VTM 94 test results noted on Form C-85. The Contractor shall provide the equipment indicated in VTM 94 that are needed to perform the moisture test before application.

Section 704.03 – Procedures is amended by replacing the thirteenth paragraph with the following:

Non-truck mounted equipment shall be regulated to allow for calibration of the amount and type of material applied.

Section 704.03 – Procedures is amended to replace the eighteenth paragraph with the following:

Glass beads and retroreflective optics shall be applied at the rate specified herein or as specified in the Department's Approved List for the specific pavement marking product. Beads and optics shall be evenly distributed over the entire lateral and longitudinal surface of the marking. The Contractor shall apply beads to the surface of liquid markings with a bead dispenser attached to the applicator that shall uniformly dispense beads simultaneously on and into the just-applied marking. The bead dispenser shall be equipped with a cut-off control synchronized with the applied marking material cut off control so that the beads are applied totally on the marking. Beads shall be applied while the liquid marking is still fluid, resulting in approximately 60% embedment in the marking's surface. Beads installed on crosswalks and stop lines on roadways with curbs only (no gutter) may be hand applied for two feet at the end of each line next to the curb with 100 percent of the beads embedded 50% to 60% into the marking's surface.

Section 704.03(a)1 – Type A markings is replaced with the following:

Type A markings shall be applied in accordance with the manufacturer's installation instructions. When applying atop existing pavement markings, the existing marking shall first be swept or eradicated to the extent necessary to ensure that the surface of the existing marking is clean, chalk free (not powdery), and well adhered.

Glass beads for Type A, Class I markings shall be AASHTO M 247 Type 1 Beads applied at a minimum rate of 6 pounds per gallon of paint

Retroreflective optics for Type A, Class II markings shall be applied as noted in the Department's Approved List 20 for the selected pavement marking product.

The Contractor may substitute Type A, Class I cold weather paint (traffic paint designed for application at temperatures below 40 °F) for Type A, Class I conventional paint at no additional cost to the Department. Cold weather paint shall be from the Department's Approved List 20.

Section 704.03(a)2 – Type B markings is amended to replace the third paragraph with the following:

Non-truck mounted equipment for application of thermoplastic material shall include an extrude die with a burner, temperature controller, agitator, and mechanical bead applicator to allow for the correct amount of material to be applied.

Section 704.03(a)2a – Thermoplastic (Class I) is amended to replace the fourth through sixth paragraphs with the following:

Thermoplastic shall not be applied over existing pavement markings of materials other than paint or thermoplastic, unless the existing marking is 90 percent percent worn away or eradicated. When applying thermoplastic over existing paint or thermoplastic, the existing marking shall first be swept or eradicated to the extent necessary to ensure that the surface of the existing marking is clean, chalk free (not powdery), and well adhered.

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Thermoplastic marking material shall be applied at thickness of 90 mils (\pm 5 mils) above the riding surface, whether dense or open graded surface.

Glass beads and retroreflective optics shall be surface applied at the rate of 10 pounds per 100 square feet unless specified otherwise on the Materials Division's Approved Products List 43 for the specific thermoplastic product.

Section 704.03(a)2b – Preformed thermoplastic (Class II) is amended to replace the first and second paragraphs with the following:

Preformed thermoplastic (Class II) material shall be installed in accordance with the manufacturer's installation instructions. A primer or sealer manufactured by or recommended by the preformed thermoplastic manufacturer shall be applied to all hydraulic cement concrete surfaces and to asphalt concrete surfaces in accordance with the manufacturer's installation instructions.

Preformed thermoplastic shall not be applied over existing pavement markings of materials other than paint or thermoplastic, unless the existing marking is 90 percent worn away or eradicated. When applying preformed thermoplastic over existing paint or thermoplastic, the existing marking shall first be swept or eradicated to the extent necessary to ensure the surface of the existing marking is clean, chalk free (not powdery), and well adhered.

Permanent transverse rumble strips shall be applied using two strips of white Type B, Class II material. The bottom strip shall be 250 mils thick and 4 inches wide, and the top strip shall be 125 mils thick and 2 inches wide (centered atop the bottom strip), unless noted otherwise in the plans. Transverse rumble strips shall be installed in arrays as per the Standard Drawings and the plans.

Section 704.03(b) – Pavement messages and symbols markings is amended to replace the second paragraph with the following:

Surface temperature at time of application shall be in accordance with manufacturer's installation instructions. If the installation instructions do not specify minimum surface temperature, then the markings shall not be installed unless the surface temperature at time of application is 50°F or higher. Surface temperature requirements shall not be considered met if the temperature is forecasted to drop below the minimum within two hours of application. The Contractor may heat the pavement for a short duration to dry the pavement surface and bring the surface temperature to within the allowable temperatures for pavement marking installation, at no extra cost to the Department. Heat torch temperatures shall not exceed 300°F. The Contractor shall monitor pavement temperature to ensure it does not rise above 120°F at any time. Any damage to the pavement shall be promptly repaired at no extra cost to the Department.

Message and symbol markings include, but shall not be limited to, those detailed in Standard Drawing PM-10.

The sizes and shapes of symbols and characters shall match the size and shape specified in Standard Drawing PM-10 or elsewhere in the Contract. Hand-drawn or "stick" symbols or characters will not be allowed.

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Table VII-3 is replaced with the following:

TABLE VII-3
Pavement Markings

| Type | Class | Name | Film Thickness (mils) | Pavement Surface | Application Limitations | Appr. List No. |
|------|-------|--|--|------------------|---|----------------|
| A | I | Conventional or Cold-Weather Traffic Paint | 15 ± 1 when wet | AC HCC | May be applied directly after paving operations | 20 |
| A | II | High Build Traffic Paint | 25 ± 2 when wet | AC HCC | May be applied directly after paving operations | 20 |
| B | I | Thermoplastic Alkyd | 90 ± 5 | AC HCC | May be applied directly after paving operations | 43 |
| | I | Thermoplastic Hydrocarbon | 90 ± 5 when dry | AC HCC | Do not apply less than 30 days after paving operations | 43 |
| | II | Preformed Thermoplastic | 120-130 | AC HCC | Manufacturers installation instructions | 73 |
| | III | Epoxy resin | 20 ± 1 when wet | AC HCC | Manufacturers installation instructions | 75 |
| | IV | Plastic-backed preformed Tape | 60 - 120 | AC HCC | Manufacturer's installation instructions | 17 |
| | VI | Patterned preformed Tape | 20 min ¹ 65 min ² | AC HCC | (Note 4) | 17 |
| | VII | Polyurea | 20 ± 1 | AC HCC | Manufacturer's installation instructions | 74 |
| D | III | Wet Reflective Removable tape | (Note 3) | AC HCC | Temporary pavement marking | 17 |
| E | | Removable black tape (Non-Reflective) | (Note 3) | AC | Temporary pavement marking for covering existing markings | 17 |

¹Thinnest portion of the tape's cross section.

²Thickest portion of the tape's cross section.

³In accordance with manufacturer's installation instructions.

⁴In accordance with the manufacturer's installation instructions, except that Type B, Class VI markings on new plant mix asphalt surfaces shall be inlaid into the freshly installed asphalt surface and not surface-applied.

Section 704.03(d)1 – Snowplowable raised pavement markers is renamed **Section 704.03(d)1 – Inlaid Pavement Markers** and replaced as follows:

Inlaid Pavement Markers shall be installed with retroreflectors with front-side and back-side colors as per Standard Drawing PM-8.

The Contractor shall not install markers on existing bridge decks. Inlaid Pavement Markers shall be installed on new bridge decks where required by the Plans.

Inlaid Pavement Markers shall be placed in relation to pavement joints and cracks as follows:

- In existing Asphalt Concrete pavement, new or existing Hydraulic Cement Concrete pavement, and bridge decks, the edge of the groove shall be at least 2 inches from pavement joints and cracks, ensuring that the finished line of markers is straight in accordance with the tolerance for pavement markings specified in Section 704.03 of the

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Specifications. Offset from the longitudinal joint shall take precedence over straightness of the line of markers.

- In new Hydraulic Cement Concrete pavement or when installed in conjunction with new latex modified microsurfacing or slurry seal treatments, the edge of the groove shall be at least 2 inches from all longitudinal and transverse surface course pavement joints and 1 inch maximum off alignment from the corresponding pavement marking line. The finished line of markers shall be straight in accordance with the tolerance for pavement markings specified in Section 704.03 of the Specifications. Straightness of the line of markers and alignment with the corresponding pavement marking line takes precedence over offset from the surface course joint.

Retroreflectors shall be affixed to holders, using an adhesive from the Department's Approved List 22 (Inlaid Pavement Markers) prior to installation.

Inlaid Pavement Markers shall be installed as per Standard Drawing PM-8.

Tapered grooves and plunge cuts shall be cut using diamond blades that can accurately control the groove dimensions, resulting in smooth uniform tapers and smooth groove bottoms and ensuring the pavement does not tear or ravel. The Contractor shall remove all dirt, grease, oil, loose or unsound layers, and any other material from the groove which would reduce the bond of the adhesive. Pavement surfaces shall be maintained in a clean and dry condition until the marker is placed.

Holders shall be installed in the same shift as grooving.

The epoxy adhesive shall be thoroughly mixed until it is uniform in color, and applied in accordance with the manufacturer's installation instructions. The Contractor shall partially fill the plunge cut with sufficient epoxy adhesive such that the epoxy adhesive bed area is equal to the bottom area of the holder. The Contractor shall then set the holder in the epoxy adhesive such that the breakaway tabs are resting on the road surface, the holder is centered in the cut, and then fill in additional epoxy adhesive if necessary so the entire perimeter of the holder is completely surrounded in epoxy, with the epoxy level with the edge of the holder in accordance with the manufacturer instructions.

The Contractor shall remove all adhesive and foreign matter from the face of the retroreflector or replace the retroreflector if adhesive and foreign matter cannot be removed. The marker shall be replaced if it is not properly positioned and adhered in the plunge cut.

Section 704.03(d)2 – Raised Pavement Markers is renamed **Nonplowable Raised Pavement Markers** and is replaced with the following:

Nonplowable raised pavement markers shall be bonded to the surface in accordance with the manufacturer's installation instructions. The bonding material shall be from the Department's Approved List 22 for the specific marker.

Section 704.04 – Measurement and Payment is amended to replace the fifth paragraph with the following:

Pavement markers will be measured in units of each for the type specified and will be paid for at the contract unit price per each. This price shall include surface preparation, furnishing, installing, prismatic retroreflectors, pavement cutting, adhesive, holders, quality control tests, and daily log.

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Section 704.04—Measurement and Payment is amended by revising the Pay Item Table as follows:

The following pay items are removed:

| Pay Item | Pay Unit |
|------------------------------------|---------------------|
| Pavement message marking (Message) | Each or Linear Foot |

The following pay items are inserted:

| Pay Item | Pay Unit |
|--|---------------------|
| Pavement message marking (Message, Type or class material) | Each or Linear Foot |



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

General Permit No.: VAR10

Effective Date: July 1, 2019

Expiration Date: June 30, 2024

GENERAL VPDES PERMIT FOR DISCHARGES OF STORMWATER FROM CONSTRUCTION ACTIVITIES

AUTHORIZATION TO DISCHARGE UNDER THE VIRGINIA STORMWATER MANAGEMENT PROGRAM AND THE VIRGINIA STORMWATER MANAGEMENT ACT

In compliance with the provisions of the Clean Water Act, as amended, and pursuant to the Virginia Stormwater Management Act and regulations adopted pursuant thereto, operators of construction activities are authorized to discharge to surface waters within the boundaries of the Commonwealth of Virginia, except those specifically named in State Water Control Board regulations that prohibit such discharges.

The authorized discharge shall be in accordance with the registration statement filed with the Department of Environmental Quality, this cover page, Part I - Discharge Authorization and Special Conditions, Part II - Stormwater Pollution Prevention Plan, and Part III - Conditions Applicable to All VPDES Permits as set forth in this general permit.

PART I

DISCHARGE AUTHORIZATION AND SPECIAL CONDITIONS

A. Coverage under this general permit.

1. During the period beginning with the date of coverage under this general permit and lasting until the general permit's expiration date, the operator is authorized to discharge stormwater from construction activities.
2. This general permit also authorizes stormwater discharges from support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) located on-site or off-site provided that:
 - a. The support activity is directly related to the construction activity that is required to have general permit coverage for discharges of stormwater from construction activities;
 - b. The support activity is not a commercial operation, nor does it serve multiple unrelated construction activities by different operators;
 - c. The support activity does not operate beyond the completion of the last construction activity it supports;
 - d. The support activity is identified in the registration statement at the time of general permit coverage;
 - e. Appropriate control measures are identified in a stormwater pollution prevention plan and implemented to address the discharges from the support activity areas; and
 - f. All applicable state, federal, and local approvals are obtained for the support activity.

B. Limitations on coverage.

1. Post-construction discharges. This general permit does not authorize stormwater discharges that originate from the site after construction activities have been completed and the site, including any support activity sites covered under the general permit registration, has undergone final stabilization. Post-construction industrial stormwater discharges may need to be covered by a separate VPDES permit.
2. Discharges mixed with nonstormwater. This general permit does not authorize discharges that are mixed with sources of nonstormwater, other than those discharges that are identified in Part I E (Authorized nonstormwater discharges) and are in compliance with this general permit.
3. Discharges covered by another state permit. This general permit does not authorize discharges of stormwater from construction activities that have been covered under an individual permit or required to obtain coverage under an alternative general permit.

4. Impaired waters and total maximum daily load (TMDL) limitation.
 - a. Nutrient and sediment impaired waters. Discharges of stormwater from construction activities to surface waters identified as impaired in the 2016 § 305(b)/303(d) Water Quality Assessment Integrated Report or for which a TMDL wasteload allocation has been established and approved prior to the term of this general permit for (i) sediment or a sediment-related parameter (i.e., total suspended solids or turbidity) or (ii) nutrients (i.e., nitrogen or phosphorus) are not eligible for coverage under this general permit unless the operator develops, implements, and maintains a stormwater pollution prevention plan (SWPPP) in accordance with Part II B 5 of this permit that minimizes the pollutants of concern and, when applicable, is consistent with the assumptions and requirements of the approved TMDL wasteload allocations and implements an inspection frequency consistent with Part II G 2 a.
 - b. Polychlorinated biphenyl (PCB) impaired waters. Discharges of stormwater from construction activities that include the demolition of any structure with at least 10,000 square feet of floor space built or renovated before January 1, 1980, to surface waters identified as impaired in the 2016 § 305(b)/303(d) Water Quality Assessment Integrated Report or for which a TMDL wasteload allocation has been established and approved prior to the term of this general permit for PCB are not eligible for coverage under this general permit unless the operator develops, implements, and maintains a SWPPP in accordance with Part II B 6 of this permit that minimizes the pollutants of concern and, when applicable, is consistent with the assumptions and requirements of the approved TMDL wasteload allocations, and implements an inspection frequency consistent with Part II G 2 a.
5. Exceptional waters limitation. Discharges of stormwater from construction activities not previously covered under the general permit effective on July 1, 2014, to exceptional waters identified in 9VAC25-260-30 A 3 c are not eligible for coverage under this general permit unless the operator develops, implements, and maintains a SWPPP in accordance with Part II B 7 of this permit and implements an inspection frequency consistent with Part II G 2 a.
6. There shall be no discharge of floating solids or visible foam in other than trace amounts.
 - C. Commingled discharges. Discharges authorized by this general permit may be commingled with other sources of stormwater that are not required to be covered under a state permit, so long as the commingled discharge is in compliance with this general permit. Discharges authorized by a separate state or VPDES permit may be commingled with discharges authorized by this general permit so long as all such discharges comply with all applicable state and VPDES permit requirements.
 - D. Prohibition of nonstormwater discharges. Except as provided in Parts I A 2, I C, and I E, all discharges covered by this general permit shall be composed entirely of stormwater associated with construction activities. All other discharges including the following are prohibited:
 1. Wastewater from washout of concrete;
 2. Wastewater from the washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials;

3. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;
4. Oils, toxic substances, or hazardous substances from spills or other releases; and
5. Soaps, solvents, or detergents used in equipment and vehicle washing.

E. Authorized nonstormwater discharges. The following nonstormwater discharges from construction activities are authorized by this general permit when discharged in compliance with this general permit:

1. Discharges from firefighting activities;
2. Fire hydrant flushings;
3. Waters used to wash vehicles or equipment where soaps, solvents, or detergents have not been used and the wash water has been filtered, settled, or similarly treated prior to discharge;
4. Water used to control dust that has been filtered, settled, or similarly treated prior to discharge;
5. Potable water sources, including uncontaminated waterline flushings, managed in a manner to avoid an instream impact;
6. Routine external building wash down where soaps, solvents or detergents have not been used and the wash water has been filtered, settled, or similarly treated prior to discharge;
7. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (or where all spilled or leaked material has been removed prior to washing); where soaps, solvents, or detergents have not been used; and where the wash water has been filtered, settled, or similarly treated prior to discharge;
8. Uncontaminated air conditioning or compressor condensate;
9. Uncontaminated ground water or spring water;
10. Foundation or footing drains where flows are not contaminated with process materials such as solvents;
11. Uncontaminated excavation dewatering, including dewatering of trenches and excavations that have been filtered, settled, or similarly treated prior to discharge; and
12. Landscape irrigation.

F. Termination of general permit coverage.

1. The operator of the construction activity shall submit a notice of termination in accordance with 9VAC25-880-60, unless a registration statement was not required to be submitted in accordance with 9VAC25-880-50 A 1 c or A 2 b for single-family detached residential structures, to the VSMP authority after one or more of the following conditions have been met:

- a. Necessary permanent control measures included in the SWPPP for the site are in place and functioning effectively and final stabilization has been achieved on all portions of the site for which the operator has operational control. When applicable, long term responsibility and maintenance requirements for permanent control measures shall be recorded in the local land records prior to the submission of a complete and accurate notice of termination and the construction record drawing prepared;
 - b. Another operator has assumed control over all areas of the site that have not been finally stabilized and obtained coverage for the ongoing discharge;
 - c. Coverage under an alternative VPDES or state permit has been obtained; or
 - d. For individual lots in residential construction only, final stabilization as defined in 9VAC25-880-1 has been completed, including providing written notification to the homeowner and incorporating a copy of the notification and signed certification statement into the SWPPP, and the residence has been transferred to the homeowner.
2. The notice of termination shall be submitted no later than 30 days after one of the above conditions in subdivision 1 of this subsection is met.
 3. Termination of authorization to discharge for the conditions set forth in subdivision 1 a of this subsection shall be effective upon notification from the department that the provisions of subdivision 1 a of this subsection have been met or 60 days after submittal of a complete and accurate notice of termination in accordance with 9VAC25-880-60 C, whichever occurs first.
 4. Authorization to discharge terminates at midnight on the date that the notice of termination is submitted for the conditions set forth in subdivisions 1 b through 1 d of this subsection unless otherwise notified by the VSMP authority or department.
 5. The notice of termination shall be signed in accordance with Part III K of this general permit.
- G. Water quality protection.
1. The operator shall select, install, implement, and maintain control measures as identified in the SWPPP at the construction site that minimize pollutants in the discharge as necessary to ensure that the operator's discharge does not cause or contribute to an excursion above any applicable water quality standard.
 2. If it is determined by the department that the operator's discharges are causing, have reasonable potential to cause, or are contributing to an excursion above any applicable water quality standard, the department, in consultation with the VSMP authority, may take appropriate enforcement action and require the operator to:
 - a. Modify or implement additional control measures in accordance with Part II C to adequately address the identified water quality concerns;
 - b. Submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is attaining water quality standards; or

- c. Submit an individual permit application in accordance with 9VAC25-870-410 B 3.

All written responses required under this chapter shall include a signed certification consistent with Part III K.

PART II

STORMWATER POLLUTION PREVENTION PLAN

A. Stormwater pollution prevent plan.

1. A stormwater pollution prevention plan (SWPPP) shall be developed prior to the submission of a registration statement and implemented for the construction activity, including any support activity, covered by this general permit. SWPPPs shall be prepared in accordance with good engineering practices. Construction activities that are part of a larger common plan of development or sale and disturb less than one acre may utilize a SWPPP template provided by the department and need not provide a separate stormwater management plan if one has been prepared and implemented for the larger common plan of development or sale.
2. The SWPPP requirements of this general permit may be fulfilled by incorporating by reference other plans such as a spill prevention control and countermeasure (SPCC) plan developed for the site under § 311 of the federal Clean Water Act or best management practices (BMP) programs otherwise required for the facility provided that the incorporated plan meets or exceeds the SWPPP requirements of Part II B. All plans incorporated by reference into the SWPPP become enforceable under this general permit. If a plan incorporated by reference does not contain all of the required elements of the SWPPP, the operator shall develop the missing elements and include them in the SWPPP.
3. Any operator that was authorized to discharge under the general permit effective July 1, 2014, and that intends to continue coverage under this general permit, shall update its stormwater pollution prevention plan to comply with the requirements of this general permit no later than 60 days after the date of coverage under this general permit.

B. Contents. The SWPPP shall include the following items:

1. General information.
 - a. A signed copy of the registration statement, if required, for coverage under the general VPDES permit for discharges of stormwater from construction activities;
 - b. Upon receipt, a copy of the notice of coverage under the general VPDES permit for discharges of stormwater from construction activities (i.e., notice of coverage letter);
 - c. Upon receipt, a copy of the general VPDES permit for discharges of stormwater from construction activities;
 - d. A narrative description of the nature of the construction activity, including the function of the project (e.g., low density residential, shopping mall, highway, etc.);
 - e. A legible site plan identifying:

- (1) Directions of stormwater flow and approximate slopes anticipated after major grading activities;
 - (2) Limits of land disturbance including steep slopes and natural buffers around surface waters that will not be disturbed;
 - (3) Locations of major structural and nonstructural control measures, including sediment basins and traps, perimeter dikes, sediment barriers, and other measures intended to filter, settle, or similarly treat sediment, that will be installed between disturbed areas and the undisturbed vegetated areas in order to increase sediment removal and maximize stormwater infiltration;
 - (4) Locations of surface waters;
 - (5) Locations where concentrated stormwater is discharged;
 - (6) Locations of any support activities, including (i) areas where equipment and vehicle washing, wheel wash water, and other wash water is to occur; (ii) storage areas for chemicals such as acids, fuels, fertilizers, and other lawn care chemicals; (iii) concrete wash out areas; (iv) vehicle fueling and maintenance areas; (v) sanitary waste facilities, including those temporarily placed on the construction site; and (vi) construction waste storage; and
 - (7) When applicable, the location of the on-site rain gauge or the methodology established in consultation with the VSMP authority used to identify measurable storm events for inspection as allowed by Part II G 2 a (1) (ii) or Part II G 2 b (2).
2. Erosion and sediment control plan.
- a. An erosion and sediment control plan designed and approved in accordance with the Virginia Erosion and Sediment Control Regulations (9VAC25-840), an "agreement in lieu of a plan" as defined in 9VAC25-840-10 from the VESCP authority, or an erosion and sediment control plan prepared in accordance with annual standards and specifications approved by the department.
 - b. All erosion and sediment control plans shall include a statement describing the maintenance responsibilities required for the erosion and sediment controls used.
 - c. An approved erosion and sediment control plan, "agreement in lieu of a plan," or erosion and sediment control plan prepared in accordance with department-approved annual standards and specifications, implemented to:
 - (1) Control the volume and velocity of stormwater runoff within the site to minimize soil erosion;
 - (2) Control stormwater discharges, including peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion;

- (3) Minimize the amount of soil exposed during the construction activity;
 - (4) Minimize the disturbance of steep slopes;
 - (5) Minimize sediment discharges from the site in a manner that addresses (i) the amount, frequency, intensity, and duration of precipitation; (ii) the nature of resulting stormwater runoff; and (iii) soil characteristics, including the range of soil particle sizes present on the site;
 - (6) Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal, and maximize stormwater infiltration, unless infeasible;
 - (7) Minimize soil compaction and, unless infeasible, preserve topsoil;
 - (8) Ensure initiation of stabilization activities, as defined in 9VAC25-880-1, of disturbed areas immediately whenever any clearing, grading, excavating, or other land-disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 days; and
 - (9) Utilize outlet structures that withdraw stormwater from the surface (i.e., above the permanent pool or wet storage water surface elevation), unless infeasible, when discharging from sediment basins or sediment traps.
3. Stormwater management plan.
- a. Except for those projects identified in Part II B 3 b, a stormwater management plan approved by the VSMP authority as authorized under the Virginia Stormwater Management Program (VSMP) Regulation (9VAC25-870), or an "agreement in lieu of a stormwater management plan" as defined in 9VAC25-870-10 from the VSMP authority, or a stormwater management plan prepared in accordance with annual standards and specifications approved by the department.
 - b. For any operator meeting the conditions of 9VAC25-870-47 B of the VSMP regulation, an approved stormwater management plan is not required. In lieu of an approved stormwater management plan, the SWPPP shall include a description of, and all necessary calculations supporting, all post-construction stormwater management measures that will be installed prior to the completion of the construction process to control pollutants in stormwater discharges after construction operations have been completed. Structural measures should be placed on upland soils to the degree possible. Such measures must be designed and installed in accordance with applicable VESCP authority, VSMP authority, state, and federal requirements, and any necessary permits must be obtained.
4. Pollution prevention plan. A pollution prevention plan that addresses potential pollutant-generating activities that may reasonably be expected to affect the quality of stormwater discharges from the construction activity, including any support activity. The pollution prevention plan shall:
- a. Identify the potential pollutant-generating activities and the pollutant that is expected to be exposed to stormwater;

- b. Describe the location where the potential pollutant-generating activities will occur, or if identified on the site plan, reference the site plan;
- c. Identify all nonstormwater discharges, as authorized in Part I E of this general permit, that are or will be commingled with stormwater discharges from the construction activity, including any applicable support activity;
- d. Identify the person responsible for implementing the pollution prevention practice or practices for each pollutant-generating activity (if other than the person listed as the qualified personnel);
- e. Describe the pollution prevention practices and procedures that will be implemented to:
 - (1) Prevent and respond to leaks, spills, and other releases including (i) procedures for expeditiously stopping, containing, and cleaning up spills, leaks, and other releases; and (ii) procedures for reporting leaks, spills, and other releases in accordance with Part III G;
 - (2) Prevent the discharge of spilled and leaked fuels and chemicals from vehicle fueling and maintenance activities (e.g., providing secondary containment such as spill berms, decks, spill containment pallets, providing cover where appropriate, and having spill kits readily available);
 - (3) Prevent the discharge of soaps, solvents, detergents, and wash water from construction materials, including the clean-up of stucco, paint, form release oils, and curing compounds (e.g., providing (i) cover (e.g., plastic sheeting or temporary roofs) to prevent contact with stormwater; (ii) collection and proper disposal in a manner to prevent contact with stormwater; and (iii) a similarly effective means designed to prevent discharge of these pollutants);
 - (4) Minimize the discharge of pollutants from vehicle and equipment washing, wheel wash water, and other types of washing (e.g., locating activities away from surface waters and stormwater inlets or conveyance and directing wash waters to sediment basins or traps, using filtration devices such as filter bags or sand filters, or using similarly effective controls);
 - (5) Direct concrete wash water into a leak-proof container or leak-proof settling basin. The container or basin shall be designed so that no overflows can occur due to inadequate sizing or precipitation. Hardened concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wastes. Liquid concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wash waters and shall not be discharged to surface waters;
 - (6) Minimize the discharge of pollutants from storage, handling, and disposal of construction products, materials, and wastes including (i) building products such as asphalt sealants, copper flashing, roofing materials, adhesives, and concrete admixtures; (ii) pesticides, herbicides, insecticides, fertilizers, and landscape

- materials; and (iii) construction and domestic wastes such as packaging materials, scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, Styrofoam, concrete, and other trash or building materials;
- (7) Prevent the discharge of fuels, oils, and other petroleum products, hazardous or toxic wastes, waste concrete, and sanitary wastes;
 - (8) Address any other discharge from the potential pollutant-generating activities not addressed above;
 - (9) Minimize the exposure of waste materials to precipitation by closing or covering waste containers during precipitation events and at the end of the business day, or implementing other similarly effective practices. Minimization of exposure is not required in cases where the exposure to precipitation will not result in a discharge of pollutants; and
- f. Describe procedures for providing pollution prevention awareness of all applicable wastes, including any wash water, disposal practices, and applicable disposal locations of such wastes, to personnel in order to comply with the conditions of this general permit. The operator shall implement the procedures described in the SWPPP.
5. SWPPP requirements for discharges to nutrient and sediment impaired waters. For discharges to surface waters (i) identified as impaired in the 2016 § 305(b)/303(d) Water Quality Assessment Integrated Report or (ii) with an applicable TMDL wasteload allocation established and approved prior to the term of this general permit for sediment for a sediment-related parameter (i.e., total suspended solids or turbidity) or nutrients (i.e., nitrogen or phosphorus), the operator shall:
- a. Identify the impaired waters, approved TMDLs, and pollutants of concern in the SWPPP; and
 - b. Provide clear direction in the SWPPP that:
 - (1) Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site;
 - (2) Nutrients shall be applied in accordance with manufacturer's recommendations or an approved nutrient management plan and shall not be applied during rainfall events; and
 - (3) A modified inspection schedule shall be implemented in accordance with Part II G 2 a.
6. SWPPP requirements for discharges to polychlorinated biphenyl (PCB) impaired waters. For discharges from construction activities that include the demolition of any structure with at least 10,000 square feet of floor space built or renovated before January 1, 1980, to surface waters (i) identified as impaired in the 2016 § 305(b)/303(d) Water Quality Assessment Integrated Report or (ii) with an applicable TMDL wasteload allocation established and approved prior to the term of this general permit for PCB, the operator shall:

- a. Identify the impaired waters, approved TMDLs, and pollutant of concern in the SWPPP;
 - b. Implement the approved erosion and sediment control plan in accordance with Part II B 2;
 - c. Dispose of waste materials in compliance with applicable state, federal, and local requirements; and
 - d. Implement a modified inspection schedule in accordance with Part II G 2 a.
7. SWPPP requirements for discharges to exceptional waters. For discharges to surface waters identified in 9VAC25-260-30 A 3 c as an exceptional water, the operator shall:
- a. Identify the exceptional surface waters in the SWPPP; and
 - b. Provide clear direction in the SWPPP that:
 - (1) Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site;
 - (2) Nutrients shall be applied in accordance with manufacturer's recommendations or an approved nutrient management plan and shall not be applied during rainfall events; and
 - (3) A modified inspection schedule shall be implemented in accordance with Part II G 2 a.
8. Identification of qualified personnel. The name, phone number, and qualifications of the qualified personnel conducting inspections required by this general permit.
9. Delegation of authority. The individuals or positions with delegated authority, in accordance with Part III K, to sign inspection reports or modify the SWPPP.
10. SWPPP signature. The SWPPP shall be signed and dated in accordance with Part III K.

C. SWPPP amendments, modification, and updates.

1. The operator shall amend the SWPPP whenever there is a change in the design, construction, operation, or maintenance that has a significant effect on the discharge of pollutants to surface waters and that has not been previously addressed in the SWPPP.
2. The SWPPP shall be amended if, during inspections or investigations by the operator's qualified personnel, or by local, state, or federal officials, it is determined that the existing control measures are ineffective in minimizing pollutants in discharges from the construction activity. Revisions to the SWPPP shall include additional or modified control measures designed and implemented to correct problems identified. If approval by the VESCP authority, VSMP authority, or department is necessary for the control measure, revisions to the SWPPP shall be completed no later than seven calendar days following approval. Implementation of these additional or modified control measures shall be accomplished as described in Part II H.

3. The SWPPP shall clearly identify the contractors that will implement and maintain each control measure identified in the SWPPP. The SWPPP shall be amended to identify any new contractor that will implement and maintain a control measure.
4. The operator shall update the SWPPP as soon as possible but no later than seven days following any modification to its implementation. All modifications or updates to the SWPPP shall be noted and shall include the following items:
 - a. A record of dates when:
 - (1) Major grading activities occur;
 - (2) Construction activities temporarily or permanently cease on a portion of the site; and
 - (3) Stabilization measures are initiated;
 - b. Documentation of replaced or modified controls where periodic inspections or other information have indicated that the controls have been used inappropriately or incorrectly and were modified;
 - c. Areas that have reached final stabilization and where no further SWPPP or inspection requirements apply;
 - d. All properties that are no longer under the legal control of the operator and the dates on which the operator no longer had legal control over each property;
 - e. The date of any prohibited discharges, the discharge volume released, and what actions were taken to minimize the impact of the release;
 - f. Measures taken to prevent the reoccurrence of any prohibited discharge; and
 - g. Measures taken to address any evidence identified as a result of an inspection required under Part II G.
5. Amendments, modifications, or updates to the SWPPP shall be signed in accordance with Part III K.

D. Public notification. Upon commencement of land disturbance, the operator shall post conspicuously a copy of the notice of coverage letter near the main entrance of the construction activity. For linear projects, the operator shall post the notice of coverage letter at a publicly accessible location near an active part of the construction project (e.g., where a pipeline crosses a public road). The operator shall maintain the posted information until termination of general permit coverage as specified in Part I F.

E. SWPPP availability.

1. Operators with day-to-day operational control over SWPPP implementation shall have a copy of the SWPPP available at a central location on-site for use by those identified as having responsibilities under the SWPPP whenever they are on the construction site.

2. The operator shall make the SWPPP and all amendments, modifications, and updates available upon request to the department, the VSMP authority, the EPA, the VESCP authority, local government officials, or the operator of a municipal separate storm sewer system receiving discharges from the construction activity. If an on-site location is unavailable to store the SWPPP when no personnel are present, notice of the SWPPP's location shall be posted near the main entrance of the construction site.
3. The operator shall make the SWPPP available for public review in an electronic format or in hard copy. Information for public access to the SWPPP shall be posted and maintained in accordance with Part II D. If not provided electronically, public access to the SWPPP may be arranged upon request at a time and at a publicly accessible location convenient to the operator or his designee but shall be no less than once per month and shall be during normal business hours. Information not required to be contained within the SWPPP by this general permit is not required to be released.

F. SWPPP implementation. The operator shall implement the SWPPP and subsequent amendments, modifications, and updates from commencement of land disturbance until termination of general permit coverage as specified in Part I F.

1. All control measures shall be properly maintained in effective operating condition in accordance with good engineering practices and, where applicable, manufacturer specifications. If a site inspection required by Part II G identifies a control measure that is not operating effectively, corrective actions shall be completed as soon as practicable, but no later than seven days after discovery or a longer period as established by the VSMP authority, to maintain the continued effectiveness of the control measures.
2. If site inspections required by Part II G identify an existing control measure that needs to be modified or if an additional or alternative control measure is necessary for any reason, implementation shall be completed prior to the next anticipated measurable storm event. If implementation prior to the next anticipated measurable storm event is impracticable, then additional or alternative control measures shall be implemented as soon as practicable, but no later than seven days after discovery or a longer period as established by the VSMP authority.

G. SWPPP Inspections.

1. Personnel responsible for on-site and off-site inspections. Inspections required by this general permit shall be conducted by the qualified personnel identified by the operator in the SWPPP. The operator is responsible for ensuring that the qualified personnel conduct the inspection.
2. Inspection schedule.
 - a. For construction activities that discharge to a surface water identified in Part II B 5 and B 6 as impaired or having an approved TMDL or Part I B 7 as exceptional, the following inspection schedule requirements apply:
 - (1) Inspections shall be conducted at a frequency of (i) at least once every four business days or (ii) at least once every five business days and no later than 24 hours following a measurable storm event. In the event that a measurable storm event occurs when

- there are more than 24 hours between business days, the inspection shall be conducted on the next business day; and
- (2) Representative inspections as authorized in Part II G 2 d shall not be allowed.
- b. Except as specified in Part II G 2 a, inspections shall be conducted at a frequency of:
- (1) At least once every five business days; or
- (2) At least once every 10 business days and no later than 24 hours following a measurable storm event. In the event that a measurable storm event occurs when there are more than 24 hours between business days, the inspection shall be conducted on the next business day.
- c. Where areas have been temporarily stabilized or land-disturbing activities will be suspended due to continuous frozen ground conditions and stormwater discharges are unlikely, the inspection frequency described in Part II G 2 a and 2 b may be reduced to once per month. If weather conditions (such as above freezing temperatures or rain or snow events) make discharges likely, the operator shall immediately resume the regular inspection frequency.
- d. Except as prohibited in Part II G 2 a (2), representative inspections may be utilized for utility line installation, pipeline construction, or other similar linear construction activities provided that:
- (1) Temporary or permanent soil stabilization has been installed and vehicle access may compromise the temporary or permanent soil stabilization and potentially cause additional land disturbance increasing the potential for erosion;
- (2) Inspections occur on the same frequency as other construction activities;
- (3) Control measures are inspected along the construction site 0.25 miles above and below each access point (i.e., where a roadway, undisturbed right-of-way, or other similar feature intersects the construction activity and access does not compromise temporary or permanent soil stabilization); and
- (4) Inspection locations are provided in the inspection report required by Part II G.
- e. If adverse weather causes the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. Any time inspections are delayed due to adverse weather conditions, evidence of the adverse weather conditions shall be included in the SWPPP with the dates of occurrence.
3. Inspection requirements.
- a. As part of the inspection, the qualified personnel shall:
- (1) Record the date and time of the inspection and, when applicable, the date and rainfall amount of the last measurable storm event;

- (2) Record the information and a description of any discharges occurring at the time of the inspection or evidence of discharges occurring prior to the inspection;
- (3) Record any land-disturbing activities that have occurred outside of the approved erosion and sediment control plan;
- (4) Inspect the following for installation in accordance with the approved erosion and sediment control plan, identification of any maintenance needs, and evaluation of effectiveness in minimizing sediment discharge, including whether the control has been inappropriately or incorrectly used:
 - (a) All perimeter erosion and sediment controls, such as silt fence;
 - (b) Soil stockpiles, when applicable, and borrow areas for stabilization or sediment trapping measures;
 - (c) Completed earthen structures, such as dams, dikes, ditches, and diversions for stabilization and effective impoundment or flow control;
 - (d) Cut and fill slopes;
 - (e) Sediment basins and traps, sediment barriers, and other measures installed to control sediment discharge from stormwater;
 - (f) Temporary or permanent channels, flumes, or other slope drain structures installed to convey concentrated runoff down cut and fill slopes;
 - (g) Storm inlets that have been made operational to ensure that sediment laden stormwater does not enter without first being filtered or similarly treated; and
 - (h) Construction vehicle access routes that intersect or access paved or public roads for minimizing sediment tracking;
- (5) Inspect areas that have reached final grade or that will remain dormant for more than 14 days to ensure:
 - (a) Initiation of stabilization activities have occurred immediately, as defined in 9VAC25-880-1; and
 - (b) Stabilization activities have been completed within seven days of reaching grade or stopping work;
- (6) Inspect for evidence that the approved erosion and sediment control plan, "agreement in lieu of a plan," or erosion and sediment control plan prepared in accordance with department-approved annual standards and specifications has not been properly implemented. This includes:

- (a) Concentrated flows of stormwater in conveyances such as rills, rivulets, or channels that have not been filtered, settled, or similarly treated prior to discharge, or evidence thereof;
 - (b) Sediment laden or turbid flows of stormwater that have not been filtered or settled to remove sediments prior to discharge;
 - (c) Sediment deposition in areas that drain to unprotected stormwater inlets or catch basins that discharge to surface waters. Inlets and catch basins with failing sediment controls due to improper installation, lack of maintenance, or inadequate design are considered unprotected;
 - (d) Sediment deposition on any property (including public and private streets) outside of the construction activity covered by this general permit;
 - (e) Required stabilization has not been initiated or completed or is not effective on portions of the site;
 - (f) Sediment basins without adequate wet or dry storage volume or sediment basins that allow the discharge of stormwater from below the surface of the wet storage portion of the basin;
 - (g) Sediment traps without adequate wet or dry storage or sediment traps that allow the discharge of stormwater from below the surface of the wet storage portion of the trap; and
 - (h) Land disturbance or sediment deposition outside of the approved area to be disturbed;
- (7) Inspect pollutant generating activities identified in the pollution prevention plan for the proper implementation, maintenance, and effectiveness of the procedures and practices;
- (8) Identify any pollutant generating activities not identified in the pollution prevention plan; and
- (9) Identify and document the presence of any evidence of the discharge of pollutants prohibited by this general permit.
4. Inspection report. Each inspection report shall include the following items:
- a. The date and time of the inspection and, when applicable, the date and rainfall amount of the last measurable storm event;
 - b. Summarized findings of the inspection;
 - c. The locations of prohibited discharges;
 - d. The locations of control measures that require maintenance;

- e. The locations of control measures that failed to operate as designed or proved inadequate or inappropriate for a particular location;
 - f. The locations where any evidence identified under Part II G 3 a (6) exists;
 - g. The locations where any additional control measure is needed;
 - h. A list of corrective actions required (including any changes to the SWPPP that are necessary) as a result of the inspection or to maintain permit compliance;
 - i. Documentation of any corrective actions required from a previous inspection that have not been implemented; and
 - j. The date and signature of the qualified personnel and the operator or its duly authorized representative.
5. The inspection report shall be included into the SWPPP no later than four business days after the inspection is complete.
 6. The inspection report and any actions taken in accordance with Part II shall be retained by the operator as part of the SWPPP for at least three years from the date that general permit coverage expires or is terminated. The inspection report shall identify any incidents of noncompliance. Where an inspection report does not identify any incidents of noncompliance, the report shall contain a certification that the construction activity is in compliance with the SWPPP and this general permit. The report shall be signed in accordance with Part III K of this general permit.

H. Corrective actions.

1. The operator shall implement the corrective actions identified as a result of an inspection as soon as practicable but no later than seven days after discovery or a longer period as approved by the VSMP authority. If approval of a corrective action by a regulatory authority (e.g., VSMP authority, VESCP authority, or the department) is necessary, additional control measures shall be implemented to minimize pollutants in stormwater discharges until such approvals can be obtained.
2. The operator may be required to remove accumulated sediment deposits located outside of the construction activity covered by this general permit as soon as practicable in order to minimize environmental impacts. The operator shall notify the VSMP authority and the department as well as obtain all applicable federal, state, and local authorizations, approvals, and permits prior to the removal of sediments accumulated in surface waters including wetlands.

PART III

CONDITIONS APPLICABLE TO ALL VPDES PERMITS

NOTE: Discharge monitoring is not required for this general permit. If the operator chooses to monitor stormwater discharges or control measures, the operator shall comply with the requirements of subsections A, B, and C, as appropriate.

A. Monitoring.

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitoring activity.
2. Monitoring shall be conducted according to procedures approved under 40 CFR Part 136 or alternative methods approved by the U.S. Environmental Protection Agency, unless other procedures have been specified in this general permit. Analyses performed according to test procedures approved under 40 CFR Part 136 shall be performed by an environmental laboratory certified under regulations adopted by the Department of General Services (1VAC30-45 or 1VAC30-46).
3. The operator shall periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals that will ensure accuracy of measurements.

B. Records.

1. Monitoring records and reports shall include:
 - a. The date, exact place, and time of sampling or measurements;
 - b. The individuals who performed the sampling or measurements;
 - c. The dates and times analyses were performed;
 - d. The individuals who performed the analyses;
 - e. The analytical techniques or methods used; and
 - f. The results of such analyses.
2. The operator shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this general permit, and records of all data used to complete the registration statement for this general permit, for a period of at least three years from the date of the sample, measurement, report or request for coverage. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the operator, or as requested by the board.

C. Reporting monitoring results.

1. The operator shall update the SWPPP to include the results of the monitoring as may be performed in accordance with this general permit, unless another reporting schedule is specified elsewhere in this general permit.
2. Monitoring results shall be reported on a discharge monitoring report (DMR); on forms provided, approved or specified by the department; or in any format provided that the date, location, parameter, method, and result of the monitoring activity are included.
3. If the operator monitors any pollutant specifically addressed by this general permit more frequently than required by this general permit using test procedures approved under 40 CFR Part 136 or using other test procedures approved by the U.S. Environmental Protection Agency or using procedures specified in this general permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or reporting form specified by the department.
4. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this general permit.

D. Duty to provide information. The operator shall furnish, within a reasonable time, any information which the board may request to determine whether cause exists for terminating this general permit coverage or to determine compliance with this general permit. The board, department, EPA, or VSMP authority may require the operator to furnish, upon request, such plans, specifications, and other pertinent information as may be necessary to determine the effect of the wastes from his discharge on the quality of surface waters, or such other information as may be necessary to accomplish the purposes of the CWA and the Virginia Stormwater Management Act. The operator shall also furnish to the board, department, EPA, or VSMP authority, upon request, copies of records required to be kept by this general permit.

E. Compliance schedule reports. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this general permit shall be submitted no later than 14 days following each schedule date.

F. Unauthorized stormwater discharges. Pursuant to § 62.1-44.5 of the Code of Virginia, except in compliance with a state permit issued by the department, it shall be unlawful to cause a stormwater discharge from a construction activity.

G. Reports of unauthorized discharges. Any operator who discharges or causes or allows a discharge of sewage, industrial waste, other wastes or any noxious or deleterious substance or a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, 40 CFR Part 302, or § 62.1-44.34:19 of the Code of Virginia that occurs during a 24-hour period into or upon surface waters or who discharges or causes or allows a discharge that may reasonably be expected to enter surface waters, shall notify the Department of Environmental Quality of the discharge immediately upon discovery of the discharge, but in no case later than within 24 hours after said discovery. A written report of the unauthorized discharge shall be submitted to the department and the VSMP authority within five days of discovery of the discharge. The written report shall contain:

1. A description of the nature and location of the discharge;
2. The cause of the discharge;

3. The date on which the discharge occurred;
4. The length of time that the discharge continued;
5. The volume of the discharge;
6. If the discharge is continuing, how long it is expected to continue;
7. If the discharge is continuing, what the expected total volume of the discharge will be; and
8. Any steps planned or taken to reduce, eliminate and prevent a recurrence of the present discharge or any future discharges not authorized by this general permit.

Discharges reportable to the department and the VSMP authority under the immediate reporting requirements of other regulations are exempted from this requirement.

H. Reports of unusual or extraordinary discharges. If any unusual or extraordinary discharge including a "bypass" or "upset," as defined in this general permit, should occur from a facility and the discharge enters or could be expected to enter surface waters, the operator shall promptly notify, in no case later than within 24 hours, the department and the VSMP authority by telephone after the discovery of the discharge. This notification shall provide all available details of the incident, including any adverse effects on aquatic life and the known number of fish killed. The operator shall reduce the report to writing and shall submit it to the department and the VSMP authority within five days of discovery of the discharge in accordance with Part III I 2. Unusual and extraordinary discharges include any discharge resulting from:

1. Unusual spillage of materials resulting directly or indirectly from processing operations;
2. Breakdown of processing or accessory equipment;
3. Failure or taking out of service of some or all of the facilities; and
4. Flooding or other acts of nature.

I. Reports of noncompliance. The operator shall report any noncompliance which may adversely affect surface waters or may endanger public health.

1. An oral report to the department and the VSMP authority shall be provided within 24 hours from the time the operator becomes aware of the circumstances. The following shall be included as information that shall be reported within 24 hours under this subdivision:
 - a. Any unanticipated bypass; and
 - b. Any upset that causes a discharge to surface waters.
2. A written report shall be submitted within five days and shall contain:
 - a. A description of the noncompliance and its cause;

- b. The period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and
- c. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The department may waive the written report on a case-by-case basis for reports of noncompliance under Part III I if the oral report has been received within 24 hours and no adverse impact on surface waters has been reported.

3. The operator shall report all instances of noncompliance not reported under Part III I 1 or 2 in writing as part of the SWPPP. The reports shall contain the information listed in Part III I 2.

NOTE: The reports required in Part III G, H and I shall be made to the department and the VSMP authority. Reports may be made by telephone, email, or by fax. For reports outside normal working hours, leaving a recorded message shall fulfill the immediate reporting requirement. For emergencies, the Virginia Department of Emergency Management maintains a 24-hour telephone service at 1-800-468-8892.

4. Where the operator becomes aware of a failure to submit any relevant facts, or submittal of incorrect information in any report, including a registration statement, to the department or the VSMP authority, the operator shall promptly submit such facts or correct information.

J. Notice of planned changes.

1. The operator shall give notice to the department and the VSMP authority as soon as possible of any planned physical alterations or additions to the permitted facility or activity. Notice is required only when:
 - a. The operator plans an alteration or addition to any building, structure, facility, or installation that may meet one of the criteria for determining whether a facility is a new source in 9VAC25-870-420;
 - b. The operator plans an alteration or addition that would significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this general permit; or
2. The operator shall give advance notice to the department and VSMP authority of any planned changes in the permitted facility or activity, which may result in noncompliance with state permit requirements.

K. Signatory requirements.

1. Registration statement. All registration statements shall be signed as follows:
 - a. For a corporation: by a responsible corporate officer. For the purpose of this chapter, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-making or decision-making functions for the corporation; or (ii) the manager of one or more manufacturing, production, or operating facilities, provided the

- manager is authorized to make management decisions that govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for state permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
- b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
 - c. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this chapter, a principal executive officer of a public agency includes (i) the chief executive officer of the agency or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.
2. Reports and other information. All reports required by this general permit, including SWPPPs, and other information requested by the board or the department shall be signed by a person described in Part III K 1 or by a duly authorized representative of that person. A person is a duly authorized representative only if:
- a. The authorization is made in writing by a person described in Part III K 1;
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the operator. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
 - c. The signed and dated written authorization is included in the SWPPP. A copy shall be provided to the department and VSMP authority, if requested.
3. Changes to authorization. If an authorization under Part III K 2 is no longer accurate because a different individual or position has responsibility for the overall operation of the construction activity, a new authorization satisfying the requirements of Part III K 2 shall be submitted to the VSMP authority as the administering entity for the board prior to or together with any reports or information to be signed by an authorized representative.
4. Certification. Any person signing a document under Part III K 1 or 2 shall make the following certification:
5. "I certify under penalty of law that I have read and understand this document and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant

penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

L. Duty to comply. The operator shall comply with all conditions of this general permit. Any state permit noncompliance constitutes a violation of the Virginia Stormwater Management Act and the Clean Water Act, except that noncompliance with certain provisions of this general permit may constitute a violation of the Virginia Stormwater Management Act but not the Clean Water Act. Permit noncompliance is grounds for enforcement action; for state permit coverage, termination, revocation and reissuance, or modification; or denial of a state permit renewal application.

The operator shall comply with effluent standards or prohibitions established under § 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if this general permit has not yet been modified to incorporate the requirement.

M. Duty to reapply. If the operator wishes to continue an activity regulated by this general permit after the expiration date of this general permit, the operator shall submit a new registration statement at least 60 days before the expiration date of the existing general permit, unless permission for a later date has been granted by the board. The board shall not grant permission for registration statements to be submitted later than the expiration date of the existing general permit.

N. Effect of a state permit. This general permit does not convey any property rights in either real or personal property or any exclusive privileges, nor does it authorize any injury to private property or invasion of personal rights, or any infringement of federal, state or local law or regulations.

O. State law. Nothing in this general permit shall be construed to preclude the institution of any legal action under, or relieve the operator from any responsibilities, liabilities, or penalties established pursuant to any other state law or regulation or under authority preserved by § 510 of the Clean Water Act. Except as provided in general permit conditions on "bypassing" (Part III U) and "upset" (Part III V), nothing in this general permit shall be construed to relieve the operator from civil and criminal penalties for noncompliance.

P. Oil and hazardous substance liability. Nothing in this general permit shall be construed to preclude the institution of any legal action or relieve the operator from any responsibilities, liabilities, or penalties to which the operator is or may be subject under §§ 62.1-44.34:14 through 62.1-44.34:23 of the State Water Control Law or § 311 of the Clean Water Act.

Q. Proper operation and maintenance. The operator shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances), which are installed or used by the operator to achieve compliance with the conditions of this general permit. Proper operation and maintenance also includes effective plant performance, adequate funding, adequate staffing, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, which are installed by the operator only when the operation is necessary to achieve compliance with the conditions of this general permit.

R. Disposal of solids or sludges. Solids, sludges or other pollutants removed in the course of treatment or management of pollutants shall be disposed of in a manner so as to prevent any pollutant from such materials from entering surface waters and in compliance with all applicable state and federal laws and regulations.

S. Duty to mitigate. The operator shall take all steps to minimize or prevent any discharge in violation of this general permit that has a reasonable likelihood of adversely affecting human health or the environment.

T. Need to halt or reduce activity not a defense. It shall not be a defense for an operator in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this general permit.

U. Bypass.

1. "Bypass," as defined in 9VAC25-870-10, means the intentional diversion of waste streams from any portion of a treatment facility. The operator may allow any bypass to occur that does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to ensure efficient operation. These bypasses are not subject to the provisions of Part III U 2 and 3.

2. Notice.

a. Anticipated bypass. If the operator knows in advance of the need for a bypass, the operator shall submit prior notice to the department, if possible at least 10 days before the date of the bypass.

b. Unanticipated bypass. The operator shall submit notice of an unanticipated bypass as required in Part III I.

3. Prohibition of bypass.

a. Except as provided in Part III U 1, bypass is prohibited, and the board or department may take enforcement action against an operator for bypass unless:

(1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage. Severe property damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production;

(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance; and

(3) The operator submitted notices as required under Part III U 2.

b. The department may approve an anticipated bypass, after considering its adverse effects, if the department determines that it will meet the three conditions listed in Part III U 3 a.

V. Upset.

1. An "upset," as defined in 9VAC25-870-10, means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based state permit effluent limitations because of factors beyond the reasonable control of the operator. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
2. An upset constitutes an affirmative defense to an action brought for noncompliance with technology-based state permit effluent limitations if the requirements of Part III V 4 are met. A determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is not a final administrative action subject to judicial review.
3. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.
4. An operator who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that:
 - a. An upset occurred and that the operator can identify the cause of the upset;
 - b. The permitted facility was at the time being properly operated;
 - c. The operator submitted notice of the upset as required in Part III I; and
 - d. The operator complied with any remedial measures required under Part III S.
5. In any enforcement proceeding, the operator seeking to establish the occurrence of an upset has the burden of proof.

W. Inspection and entry. The operator shall allow the department as the board's designee, the VSMP authority, EPA, or an authorized representative of either entity (including an authorized contractor), upon presentation of credentials and other documents as may be required by law to:

1. Enter upon the operator's premises where a regulated facility or activity is located or conducted, or where records shall be kept under the conditions of this general permit;
2. Have access to and copy, at reasonable times, any records that shall be kept under the conditions of this general permit;
3. Inspect and photograph at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this general permit; and
4. Sample or monitor at reasonable times, for the purposes of ensuring state permit compliance or as otherwise authorized by the Clean Water Act or the Virginia Stormwater Management Act, any substances or parameters at any location.

For purposes of this section, the time for inspection shall be deemed reasonable during regular business hours, and whenever the facility is discharging. Nothing contained herein shall make an inspection unreasonable during an emergency.

X. State permit actions. State permit coverage may be modified, revoked and reissued, or terminated for cause. The filing of a request by the operator for a state permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any state permit condition.

Y. Transfer of state permit coverage.

1. State permits are not transferable to any person except after notice to the department. Except as provided in Part III Y 2, a state permit may be transferred by the operator to a new operator only if the state permit has been modified or revoked and reissued, or a minor modification made, to identify the new operator and incorporate such other requirements as may be necessary under the Virginia Stormwater Management Act and the Clean Water Act.
2. As an alternative to transfers under Part III Y 1, this state permit may be automatically transferred to a new operator if:
 - a. The current operator notifies the department at least 30 days in advance of the proposed transfer of the title to the facility or property;
 - b. The notice includes a written agreement between the existing and new operators containing a specific date for transfer of state permit responsibility, coverage, and liability between them; and
 - c. The department does not notify the existing operator and the proposed new operator of its intent to modify or revoke and reissue the state permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in Part III Y 2 b.
3. For ongoing construction activity involving a change of operator, the new operator shall accept and maintain the existing SWPPP, or prepare and implement a new SWPPP prior to taking over operations at the site.

Z. Severability. The provisions of this general permit are severable, and if any provision of this general permit or the application of any provision of this state permit to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this general permit shall not be affected thereby.

NOTICE OF AUTHORIZATION

COMMONWEALTH OF VIRGINIA
Virginia Department of Transportation

| | | | |
|---------------------|--------------------------------------|------------|------------------------|
| Date: | 01/24/2023 | Permittee: | VDOT |
| Permit #: | 21-4027 | Address: | 2430 Pine Forest Drive |
| Project: | 0095-020-818, B660, C501, P101, R201 | | Colonial Heights, VA |
| AssocProjects(UPC): | 0095-020-818, 00095-020-24426692 | | 23834 |

The permitted activity is to extend multiple existing culverts, construct fill slopes, and provide construction access points in Redwater Creek and Unnamed Tributaries (UTs) to Redwater Creek to construct approximately 1.4 miles of auxiliary lanes along northbound and southbound Interstate 95 (I-95) between Rt. 10 and Rt. 288 in Chesterfield County, VA. The project entails: Structure 4-1: extending the existing 188' X 48" RCP by 2 LF, and allowing construction access in UT #1 to Redwater Creek; South of Structure No. 5-1: constructing fill slopes and allowing construction access; North of Structure 5-1: allowing construction access; Structure 5-2: extending the existing 201' X 48" RCP by 12 LF, constructing roadside drainage ditches, and allowing construction access in UT #2 to Redwater Creek; Structure 5-3: extending the existing 201' X 48" RCP by 7 LF, placing 18.5 LF of Class I riprap outlet protection, constructing fill slopes and allowing construction access in UT #2 to Redwater Creek; Structure 6-2: allowing construction access; Near Structure 6-4: installing a sheet pile retaining wall and erosion and sediment control structures, and constructing fill slopes in UT #3 to Redwater Creek; Near Structure 6-6: installing a sheet pile retaining wall, and allowing construction access in Redwater Creek; Structure 7-1: extending the existing 203' X 48" RCP by 10 LF, placing 24 LF of Class I riprap outlet protection, constructing fill slopes, and allowing construction access in UT #4 to Redwater Creek; Structure 7-2: extending the existing 203' X 48" RCP by 21 LF, constructing roadside drainage ditches, constructing fill slopes, and allowing construction access in UT #4 to Redwater Creek; Structure 7-3: extending the existing 76' X 15" CP by 15 LF, placing 5 LF of Class I riprap outlet protection, constructing fill slopes, constructing roadside drainage ditches, and allowing construction access in UT #5 to Redwater Creek; Structure 7-4: extending the existing 225' X 60" RCP by 12 LF, placing 34.3 LF of Class I riprap outlet protection, constructing fill slopes, constructing roadside drainage ditches, and construction access in UT #5 to Redwater Creek; Structure 8-1: extending the existing 225' X 60" RCP by 20 LF, constructing roadside drainage ditches, constructing fill slopes, and allowing construction access in UT #5 to Redwater Creek; Structure 8-3: extending the existing 180' X 36" RCP by 11 LF, placing 8.3 LF of Class I riprap outlet protection, constructing fill slopes, and allowing construction access; Structure 8-4: extending the existing 180' X 36" RCP by 16 LF, constructing fill slopes, and allowing construction access in UT #6 to Redwater Creek; Structure 8-5: extending the existing 199' X 60" RCP by 11 LF, constructing roadside drainage ditches, constructing fill slopes, and allowing construction access in UT #6 to Redwater Creek; Structure 8-6: extending the existing 199' X 60" RCP by 17 LF, placing 41.6 LF of Class I riprap outlet protection, constructing fill slopes, and allowing construction access in UT #6 to Redwater Creek. The total project will result in no excavation, 65 cy permanent fill, and 149 cy temporary fill below OHW in Redwater Creek and UTs to Redwater Creek and permanent impacts to 147 sf and 6584 sf of scrub/shrub wetlands and forested wetlands, respectively, and temporary impacts to 9896 sf of forested wetland. Wetland compensation will be provided at a 1.5:1 ratio for scrub-shrub wetlands, and a 2:1 ratio for forested wetlands by debiting a total of 13,389 sf from the Chickahominy Environmental Mitigation Bank.

The permitted activity has been authorized by the following permit(s):

| Permit | Authorized | Expires |
|--|------------|------------|
| VMRC: | N/A | N/A |
| COE Section 404 Permit: Nationwide Permit 23 | 01/11/2023 | 03/14/2026 |
| DEQ Virginia Water Protection Permit: | N/A | N/A |
| TVA: | N/A | N/A |

The following condition applies to this project only:

- Strict E & S control measures will be implemented and adhered to at all times.

Daniel Redgate

Daniel Redgate
Water Resources Program Manager

THIS NOTICE MUST BE CONSPICUOUSLY DISPLAYED AT THE SITE OF WORK
AES Form 03-4 (10/2003)

Special Projects Regulatory Section
NAO-2021-00654 / VMRC 21-4027 (Redwater Creek)

Virginia Department of Transportation
Attn: Jeremy Cobb
2430 Pine Forest Drive
Colonial Heights, VA 23834

Dear Mr. Cobb:

This is in regard to your Department of the Army permit application number NAO-2021-00654 / VMRC#21-V4027 to permanently impact approximately 6,731 square feet and temporarily impact 9,896 square feet of jurisdictional non-tidal wetlands, permanently impact 576 square feet (65 cubic yards, 244 linear feet) and temporarily impact 2,171 square feet (149 cubic yards, 507 linear feet) Redwater Creek and its associated tributaries for the construction of culvert extensions, fill slopes, and construction access points as a part of the construction of auxiliary lanes at Exits 61 and 62 on Interstate 95. The project is located along Interstate 95 at the on and off ramps, both northbound and southbound, for Exit 61 at West Hundred Road - Route 10 and Exit 62 at Route 288, located in the Dutch Gap area of Chesterfield County between approximate coordinates (37.35646, -77.40445) and (37.375880, -77.407157). These impacts are detailed on the enclosed drawings entitled "Proposed I-95 Auxiliary Lane" Figures 1 – 22, dated February 22, 2021, and date stamped as received by this office on dated March 9, 2021 (attached).

Your proposed work as outlined above satisfies the criteria contained in the Corps Nationwide Permit (NWP) 23, attached. Certain Corps NWPs were published in the December 27, 2021, Federal Register notice (86 FR 73522) and the regulations governing their use can be found in 33 CFR 330 published in Volume 56, Number 226 of the Federal Register dated November 22, 1991.

This NWP verification is contingent upon the following project specific conditions:

SPECIAL CONDITIONS:

1. Compensatory mitigation is required: 13,389 debits from the Chickahominy Wetland Mitigation Bank (already bulk purchased by VDOT). Construction may not impact jurisdictional areas associated with this project before the attached "Mitigation Bank Bulk Credit Use Statement of Acknowledgement" form is completed for and returned to the Norfolk District, Army Corps of Engineers, Regulatory Branch, Special Project Section. POC information is located at the bottom of this letter.

Provided the project specific conditions (above), Regional Conditions, and the NWP General Conditions (enclosed) are met, an individual Department of the Army Permit will not be required. To assist in your compliance with NWP General Condition #30, enclosed is a "compliance

certification" form, which must be signed and returned within 30 days of completion of the project, including any required compensatory mitigation.

Please be aware that a permit may be required from the Virginia Marine Resources Commission and/or your local wetlands board, and this verification may not be valid until you obtain their approval, if necessary. This authorization does not relieve your responsibility to comply with local requirements pursuant to the Chesapeake Bay Preservation Act (CBPA), nor does it supersede local government authority and responsibilities pursuant to the Act. You should contact your local government before you begin work to find out how the CBPA applies to your project.

This verification is valid until the NWP is modified, reissued, or revoked. This NWP 23 is scheduled to be modified, reissued, or revoked prior to March 14, 2026.

It is incumbent upon you to remain informed of changes to the NWPs. We will issue a public notice when the NWPs are reissued. Furthermore, if you commence or are under contract to commence this activity before the date that the relevant NWP is modified or revoked, you will have twelve (12) months from the date of the modification or revocation of the NWP to complete the activity under the present terms and conditions of this NWP unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with 33 CFR 330.4(e) and 33 CFR 330.5 (c) or (d). Project specific conditions listed in this letter continue to remain in effect after the NWP verification expires unless the district engineer removes those conditions. Activities completed under the authorization of a NWP which was in effect at the time the activity was completed continue to be authorized by that NWP.

In granting an authorization pursuant to this permit, we relied on the information and data provided by the permittee. If we determine that this information is false or incomplete, we may suspend or revoke, in whole or in part, this authorization and institute appropriate legal proceeding.

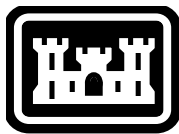
If you have additional questions or concerns about this permit authorization, please contact your project manager at (757) 201-7792 or by email at Brian.C.Denson@usace.army.mil.

Sincerely,



Kimberly A. Prisco-Baggett, MBA
Chief, Special Projects
Regulatory Section

Enclosures
Certificate of Compliance
Referenced Drawings



**U.S. Army Corps
Of Engineers**
Norfolk District

**CERTIFICATE OF COMPLIANCE
WITH
ARMY CORPS OF ENGINEERS PERMIT**

Permit Number: NAO-2021-00654
VMRC Number: 21-4027
Corps Contact: Brian Denson
Permittee Name: Jeremy Cobb
Date of Issuance: January 11, 2023
Permit Type: NWP 23 Approved Categorical Exclusions

Within 30 days of completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification, and return it to the following address:

US Army Corps of Engineers - Norfolk District
CENAO-WR-R
Attn: Brian Denson
803 Front Street
Norfolk, VA 23510-1011

Or scan and send via email to Brian.C.Denson@usace.army.mil

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit, you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of the said permit and required mitigation has been completed in accordance with the permit conditions.

Signature of Permittee

Date

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR

NATIONWIDE PERMIT 23 – APPROVED CATEGORICAL EXCLUSIONS

TO DISCHARGE DREDGE OR FILL MATERIAL IN WATERS OF THE UNITED STATES PURSUANT TO
SECTION 404 OF CLEAN WATER ACT
CONDITIONS AND LIMITATIONS TO THE VIRGINIA DEPARTMENT OF TRANSPORTATION

Date: 01/24/2023
Project: 0095-020-818, B660, C501, P101, R201
Permit #: 21-4027
Project Number(Assoc)(UPC):0095-020-818, 00095-020-24426692

Permitted Activity: To extend multiple existing culverts, construct fill slopes, and provide construction access points in Redwater Creek and Unnamed Tributaries (UTs) to Redwater Creek to construct approximately 1.4 miles of auxiliary lanes along northbound and southbound Interstate 95 (I-95) between Rt. 10 and Rt. 288 in Chesterfield County, VA. The project entails: Structure 4-1: extending the existing 188' X 48" RCP by 2 LF, and allowing construction access in UT #1 to Redwater Creek; South of Structure No. 5-1: constructing fill slopes and allowing construction access; North of Structure 5-1: allowing construction access; Structure 5-2: extending the existing 201' X 48" RCP by 12 LF, constructing roadside drainage ditches, and allowing construction access in UT #2 to Redwater Creek; Structure 5-3: extending the existing 201' X 48" RCP by 7 LF, placing 18.5 LF of Class I riprap outlet protection, constructing fill slopes and allowing construction access in UT #2 to Redwater Creek; Structure 6-2: allowing construction access; Near Structure 6-4: installing a sheet pile retaining wall and erosion and sediment control structures, and constructing fill slopes in UT #3 to Redwater Creek; Near Structure 6-6: installing a sheet pile retaining wall, and allowing construction access in Redwater Creek; Structure 7-1: extending the existing 203' X 48" RCP by 10 LF, placing 24 LF of Class I riprap outlet protection, constructing fill slopes, and allowing construction access in UT #4 to Redwater Creek; Structure 7-2: extending the existing 203' X 48" RCP by 21 LF, constructing roadside drainage ditches, constructing fill slopes, and allowing construction access in UT #4 to Redwater Creek; Structure 7-3: extending the existing 76' X 15" CP by 15 LF, placing 5 LF of Class I riprap outlet protection, constructing fill slopes, constructing roadside drainage ditches, and allowing construction access in UT #5 to Redwater Creek; Structure 7-4: extending the existing 225' X 60" RCP by 12 LF, placing 34.3 LF of Class I riprap outlet protection, constructing fill slopes, constructing roadside drainage ditches, and construction access in UT #5 to Redwater Creek; Structure 8-1: extending the existing 225' X 60" RCP by 20 LF, constructing roadside drainage ditches, constructing fill slopes, and allowing construction access in UT #5 to Redwater Creek; Structure 8-3: extending the existing 180' X 36" RCP by 11 LF, placing 8.3 LF of Class I riprap outlet protection, constructing fill slopes, and allowing construction access; Structure 8-4: extending the existing 180' X 36" RCP by 16 LF, constructing fill slopes, and allowing construction access in UT #6 to Redwater Creek; Structure 8-5: extending the existing 199' X 60" RCP by 11 LF, constructing roadside drainage ditches, constructing fill slopes, and allowing construction access in UT #6 to Redwater Creek; Structure 8-6: extending the existing 199' X 60" RCP by 17 LF, placing 41.6 LF of Class I riprap outlet protection, constructing fill slopes, and allowing construction access in UT #6 to Redwater Creek. The total project will result in no excavation, 65 cy permanent fill, and 149 cy temporary fill below OHW in Redwater Creek and UTs to Redwater Creek and permanent impacts to 147 sf and 6584 sf of scrub/shrub wetlands and forested wetlands, respectively, and temporary impacts to 9896 sf of forested wetland. Wetland compensation will be provided at a 1.5:1 ratio for scrub-shrub wetlands, and a 2:1 ratio for forested wetlands by debiting a total of 13,389 sf from the Chickahominy Environmental Mitigation Bank.

Applicable Crossing(s): Wetlands, Redwater Creek, UT's to Redwater Creek

The following condition applies to this project only:

1. Strict E & S control measures will be implemented and adhered to at all times. (Crossing Name: Wetlands, Redwater Creek, UT's to Redwater Creek)

The following conditions are applicable to this project unless otherwise noted above in the conditions applicable to this project only:

1. The Nationwide Permit authorizations expire on March 14, 2026 unless indicated otherwise in the conditions specific to this project.
2. This project will be constructed in accordance with the contract documents and is subject to the provisions cited in the above regulations.
3. A permit may be either modified, suspended, or revoked by the permitting agency upon violation of any of the terms or conditions of the permit, or if the permitting agency determines such actions will otherwise be in the public interest.
4. The Contractor shall be responsible for designing and supplying to VDOT's District Environmental Manager all sketches and notes necessary to acquire any permit modification required for changes in the proposed construction methods. The District Environmental Manager will obtain the necessary permit modifications.
5. VDOT and its Contractor shall permit representatives of state and federal environmental regulatory agencies to make periodic inspections at any time in order to ensure that the activity being performed under authority of the permit(s) is in accordance with the terms and conditions prescribed herein.
6. All work shall be done in such a manner as to minimize sedimentation/siltation of state waters in accordance with Virginia Erosion and Sediment Control Regulations (9VAC25-840-40). Appropriate soil erosion and sedimentation controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date, in accordance with the requirements of Section 107.16 (a).
7. If unknown historic, cultural or archeological remains or artifacts are discovered during construction, the Contractor shall immediately notify VDOT's District Environmental Manager and avoid construction activities that may affect the remains or artifacts until notified.
8. No activity may cause more than minimal adverse effects on navigation. Any safety lights and signals prescribed by the U.S. Coast Guard must be installed and maintained.
9. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody including those species that normally migrate through the area unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions and allow for the passage of ordinary high water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged or otherwise designed and constructed to maintain low flows to sustain the movements of those aquatic species.
10. No activity may use unsuitable material and material must be free of toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).
11. No activity may occur in the proximity of a public water supply intake except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.
12. Heavy equipment working in wetlands or mudflats must be placed on mats or other measures must be taken to minimize soil disturbance.

13. To the maximum extent practicable, the pre-construction course, condition, capacity and location of open waters must be maintained for each activity, unless the alteration benefits the aquatic environment. The activity must be constructed to withstand expected high flows and must not restrict or impede the passage of normal or high flows (unless the primary purpose of the fill is to impound water or manage high flows).
14. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water and/or restricting its flow shall be minimized to the maximum extent practicable.
15. All structures and fills must be properly maintained to ensure public safety and permit compliance.
16. Plant species listed by the most current Virginia Department of Conservation and Recreation's Invasive Alien Plant List shall not be used for revegetation.
17. All pipes and culverts placed in streams will be countersunk at both the inlet and outlet ends. Pipes that are 24 inches or less in diameter shall be countersunk 3 inches below the natural stream bottom and pipes that are greater than 24 inches in diameter shall be countersunk 6 inches below the natural stream bottom. All single pipes or culverts with bottoms shall be depressed (countersunk) below the natural streambed at both the inlet and outlet of the structure. In sets of multiple pipes or culverts with bottoms at least one pipe or culvert shall be depressed (countersunk) at both the inlet and outlet to convey low flows.
18. If bedrock is encountered during pipe or culvert placement that prevents the required countersinking, the Contractor must stop work until VDOT's District Environmental Manager acquires any necessary permit modifications.
19. Blasting of stream bottoms through the use of explosives is not acceptable as a means of providing for countersinking of pipes on bedrock.
20. When countersinking culverts, a surface water channel must be reestablished within 15 days post construction that allows for the movement of aquatic organisms and maintains the same hydrologic regime that was present pre-construction (i.e. the depth of surface water through the permit area should match the upstream and downstream depths).

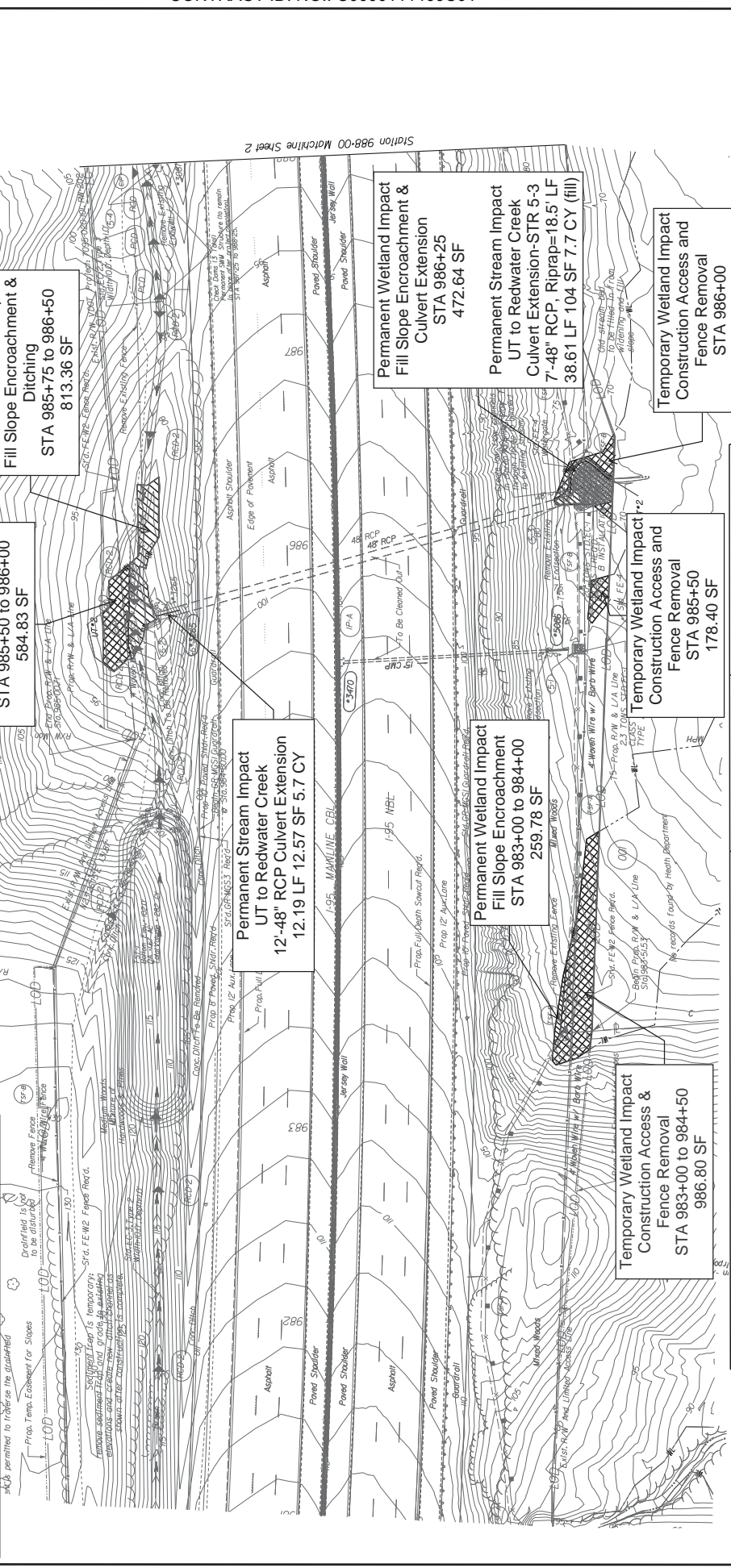
Reviewed By:
 Project:
 State:
 Route:
 Project:
 Sheet No.:

WATER QUALITY PERMIT SKETCH OVERALL VIEW-SHEET 1

| | | | |
|---|-------|-------|------------------------------|
| REVISED | STATE | ROUTE | PROJECT |
| | VA. | 95 | 0095-020-818 RW-201-C-501 |
| DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT | | | |

PROJECT MANAGER:
 DESIGN BY:
 SUBSURFACE UTILITY BY DATE:

- Notes:**
- The temporary wetland impacts are anticipated for the placement of silt fence and equipment inside the LOD for the construction and installation of drainage structures. All temporary impacts must be restored to its original contours and stabilized.
 - Prior to clearing and grading, orange fencing needs to be placed directly behind silt fence from Stations 983+00 to 986+50.



| | | |
|--|--|--|
| <p>TOTAL PROPOSED JURISDICTIONAL IMPACTS THIS SHEET:</p> <p>PERMANENT WETLAND 1,566 SF</p> <p>PERMANENT STREAM 104 SF 38.61 LF 17.7 CY (fill)</p> <p>TEMPORARY WETLAND 2,434 SF</p> | <p>PLAN VIEW CULVERT EXTENSION ENCROACHMENT WETLAND ENCROACHMENT STATIONS 981+00 TO 988+00 SCALE = P = 25'</p> | <p>PROPOSED I-95 AUXILIARY LANE IN: Unnamed Tributary to Redwater Creek PROJECT NUMBER: 0095-020-818 APPLICATION BY: VIRGINIA DEPARTMENT OF TRANSPORTATION SHEET 1 OF 18 DATE: 2/22/2020</p> |
| | <p>PROJECT: 0095-020-818 RW-201-C-501</p> <p>SHEET NO.: 1 of 18</p> | <p>STATE: VA. ROUTE: 95 PROJECT: 0095-020-818 RW-201-C-501</p> |

2/22/2021
 4:07:50 PM

PROJECT MANAGER: William C. Miller, P.E. (095-020-818) (Approved: Director)
 DESIGN BY: Jennifer Rouse, EIT (095-020-818) (Approved: Director)
 SURFACE UTILITY BY: DATE: Account, Inc.

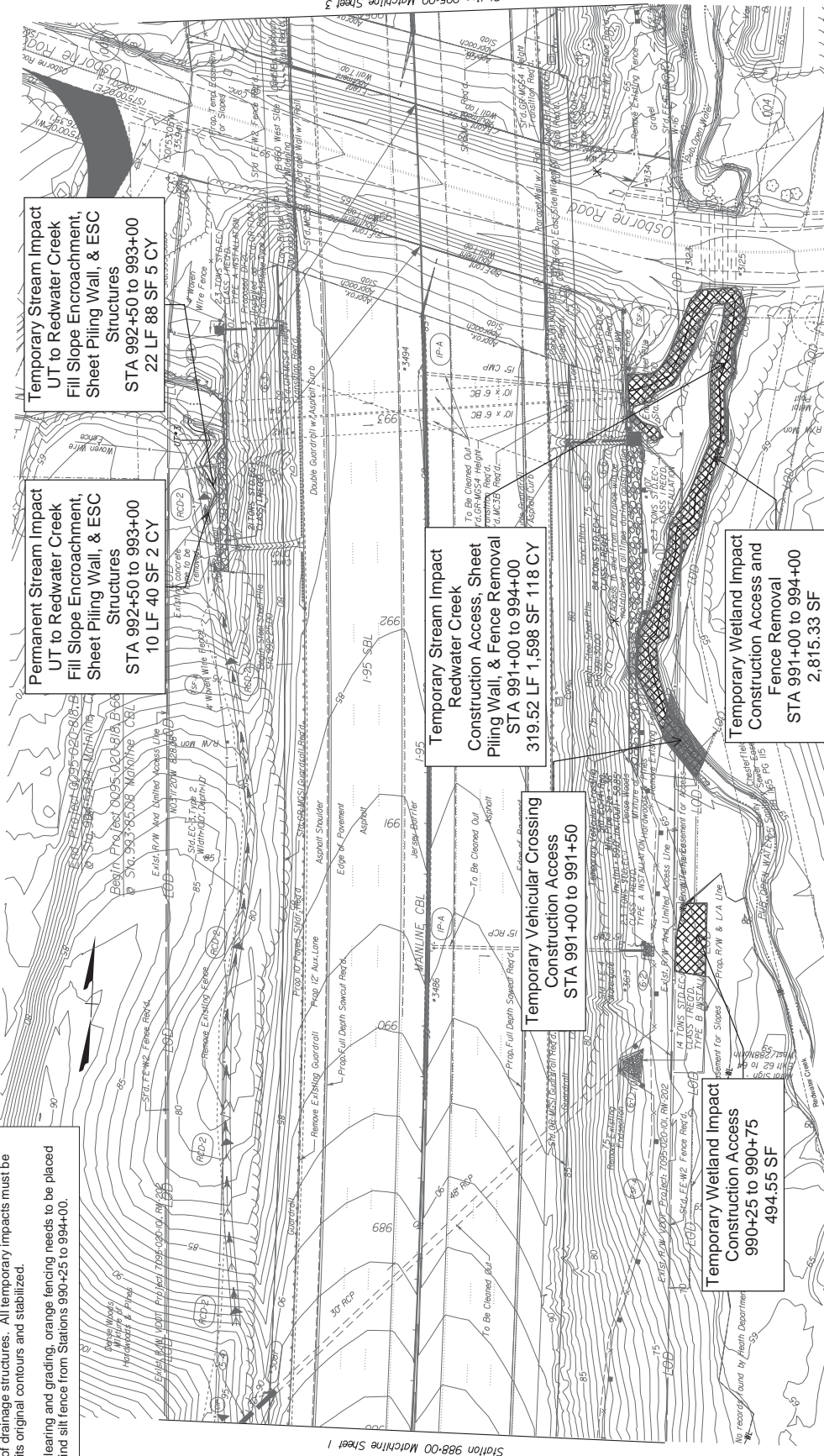
ORDER NO.: K60
 CONTRACT ID. NO.: C000111466C01

WATER QUALITY PERMIT SKETCH OVERALL VIEW-SHEET 2

| | | | |
|-------|-------|-------------------------------|-----------|
| STATE | ROUTE | PROJECT | SHEET NO. |
| VA. | 95 | 0095-020-818, RW-201-C-501 | 2 of 18 |

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

- Notes:
- 1) The temporary wetland impacts are anticipated for the placement of silt fence and equipment inside the LOD for the construction and installation of drainage structures. All temporary impacts must be restored to its original contours and stabilized.
 - 2) Prior to clearing and grading, orange fencing needs to be placed directly behind silt fence from Stations 990+25 to 994+00.



PROPOSED 195' AUXILIARY LANE IN: UT Redwater Creek & Encroachment
 PROJECT NUMBER: 0095-020-818, RW-201-C-501
 APPLICATION BY: VIRGINIA DEPARTMENT OF TRANSPORTATION
 SHEET 2 OF 18 DATE: 2/22/2020

PLAN VIEW RETAINING WALL ENCROACHMENT AND WETLAND ENCROACHMENT STATIONS 988+00 TO 995+00
 SCALE = 1" = 25'

TOTAL PROPOSED JURISDICTIONAL IMPACTS THIS SHEET:
 PERMANENT WETLAND 1,280 SF 320 LF 71 CY (1111)
 TEMPORARY WETLAND 3,517 SF

| | | | |
|-------|-------|--------------|-----------|
| STATE | ROUTE | PROJECT | SHEET NO. |
| VA. | 95 | 0095-020-818 | 2 of 18 |

HW6650675.gsp
 Plotted By: Corinne McCreech

| | |
|--------------|--------------|
| PROJECT NO. | 0095-020-818 |
| PROJECT NAME | RW-201-C-501 |
| STATE | VA |
| ROUTE | 95 |
| SHEET NO. | 3 of 18 |

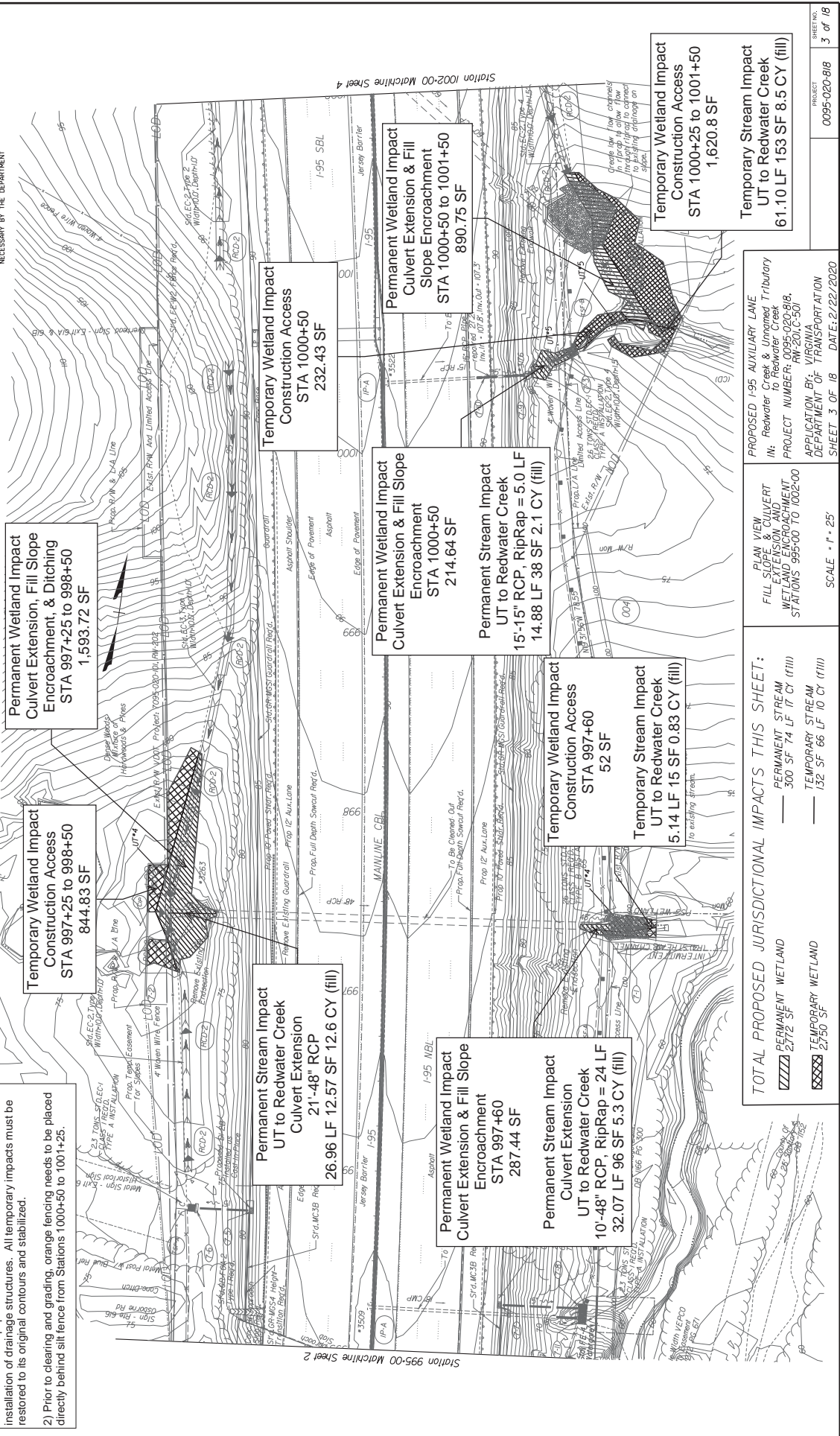
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

WATER QUALITY PERMIT SKETCH OVERALL VIEW - SHEET 3

Notes:

- The temporary wetland impacts are anticipated for the placement of silt fence and equipment inside the LOD for the construction and installation of drainage structures. All temporary impacts must be restored to its original contours and stabilized.
- Prior to clearing and grading, orange fencing needs to be placed directly behind silt fence from Stations 1000+50 to 1001+25.

PROJECT MANAGER: MIDDLETON, CARRIE
 DESIGN BY: LEVINSKY, ANDREW
 SURFACE UTILITY BY: DATE



**Temporary Wetland Impact
 Construction Access**
 STA 1000+50
 232.43 SF

**Permanent Wetland Impact
 Culvert Extension, Fill Slope
 Encroachment, & Ditching**
 STA 997+25 to 998+50
 1,593.72 SF

**Temporary Wetland Impact
 Construction Access**
 STA 997+25 to 998+50
 844.83 SF

**Permanent Stream Impact
 UT to Redwater Creek
 Culvert Extension**
 21'-48" RCP
 26.96 LF 12.57 SF 12.6 CY (fill)

**Permanent Wetland Impact
 Culvert Extension & Fill Slope
 Encroachment**
 STA 997+60
 287.44 SF

**Permanent Stream Impact
 Culvert Extension
 UT to Redwater Creek**
 10'-48" RCP, RipRap = 24 LF
 32.07 LF 96 SF 5.3 CY (fill)

**Permanent Wetland Impact
 Culvert Extension & Fill Slope
 Encroachment**
 STA 1000+50
 214.64 SF

**Permanent Stream Impact
 UT to Redwater Creek**
 15'-15" RCP, RipRap = 5.0 LF
 14.88 LF 38 SF 2.1 CY (fill)

**Permanent Wetland Impact
 Culvert Extension & Fill
 Slope Encroachment**
 STA 1000+50 to 1001+50
 890.75 SF

**Temporary Wetland Impact
 Construction Access**
 STA 997+60
 52 SF

**Temporary Stream Impact
 UT to Redwater Creek**
 5.14 LF 15 SF 0.83 CY (fill)
 to existing stream.

**Temporary Wetland Impact
 Construction Access**
 STA 1000+25 to 1001+50
 1,620.8 SF

**Temporary Stream Impact
 UT to Redwater Creek**
 61.10 LF 153 SF 8.5 CY (fill)

TOTAL PROPOSED JURISDICTIONAL IMPACTS THIS SHEET:

| | |
|-------------------|---------------------------|
| PERMANENT WETLAND | 300 SF |
| PERMANENT STREAM | 300 SF 74 LF 17 CY (fill) |
| TEMPORARY WETLAND | 132 SF 66 LF 10 CY (fill) |
| TEMPORARY STREAM | 2750 SF |

**PLAN VIEW OF FILL, SLOPE, & CULVERT
 SURFACES AND WETLAND ENCROACHMENT
 STATIONS 995+00 TO 1002+00**

PROPOSED 195 AUXILIARY LANE
 IN: Redwater Creek & Upland Tributary
 PROJECT NUMBER: 0095-020-818
 APPLICATION BY: VIRGINIA
 DEPARTMENT OF TRANSPORTATION
 SHEET 3 OF 18 DATE: 2/22/2020

SCALE = 1" = 25'

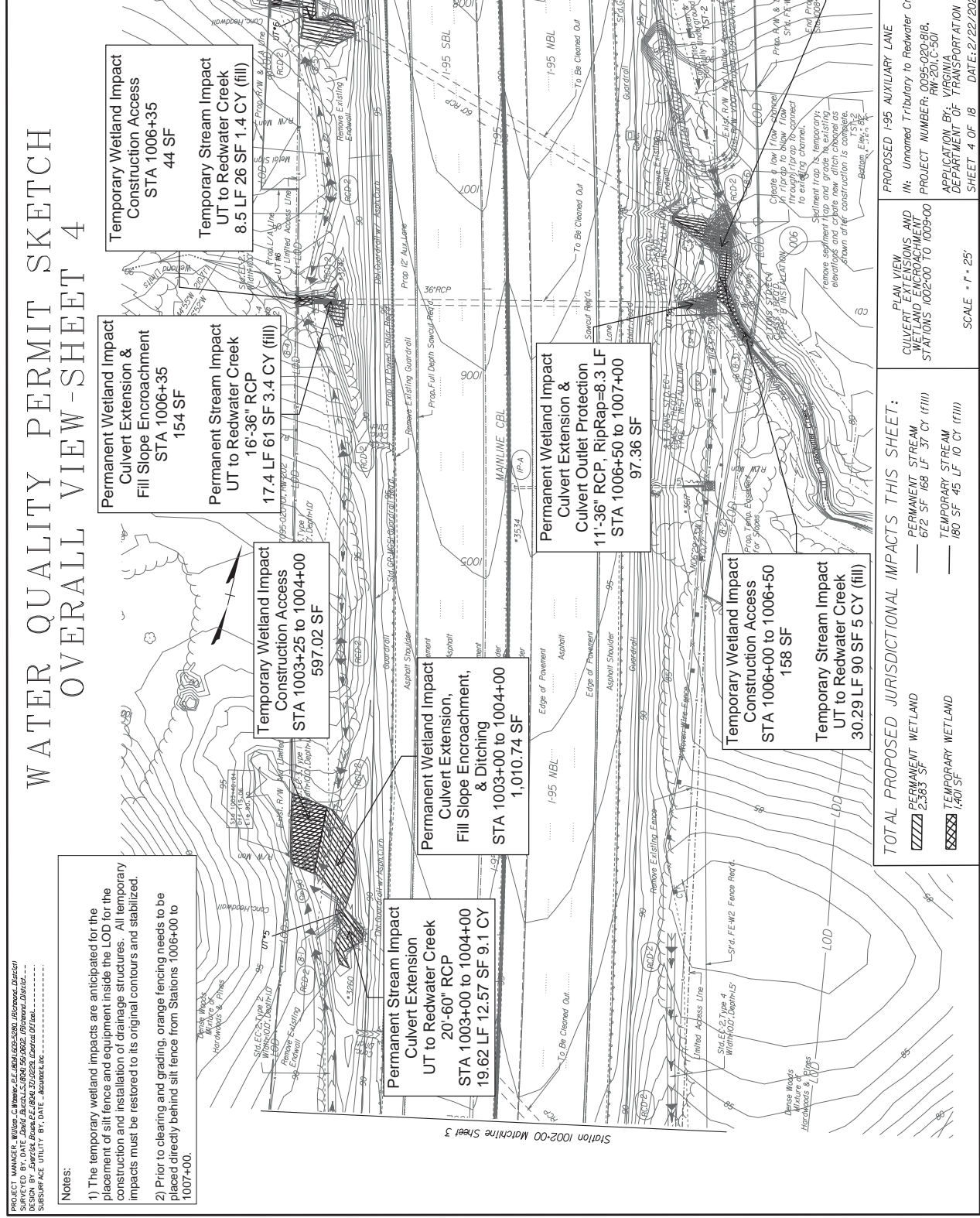
| | |
|-----------|--------------|
| PROJECT | 0095-020-818 |
| SHEET NO. | 3 of 18 |

WATER QUALITY PERMIT SKETCH OVERALL VIEW - SHEET 4

PROJECT NO.: 0095-020-818
 SHEET NO.: 4 of 18

| | |
|-------|-------|
| STATE | ROUTE |
| VA | 95 |

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



Notes:

- 1) The temporary wetland impacts are anticipated for the placement of silt fence and equipment inside the LOD for the construction and installation of drainage structures. All temporary impacts must be restored to its original contours and stabilized.
- 2) Prior to clearing and grading, orange fencing needs to be placed directly behind silt fence from Stations 1006+00 to 1007+00.

**Permanent Wetland Impact
 Culvert Extension &
 Fill Slope Encroachment
 STA 1006+35
 154 SF**

**Permanent Stream Impact
 UT to Redwater Creek
 16'-36" RCP
 17.4 LF 61 SF 3.4 CY (fill)**

**Temporary Wetland Impact
 Construction Access
 STA 1003+25 to 1004+00
 597.02 SF**

**Permanent Stream Impact
 Culvert Extension
 UT to Redwater Creek
 20'-60" RCP
 STA 1003+00 to 1004+00
 19.62 LF 12.57 SF 9.1 CY**

**Permanent Wetland Impact
 Culvert Extension,
 Fill Slope Encroachment,
 & Ditching
 STA 1003+00 to 1004+00
 1,010.74 SF**

**Permanent Wetland Impact
 Culvert Extension &
 Culvert Outlet Protection
 11'-36" RCP, RipRap=8.3 LF
 STA 1006+50 to 1007+00
 97.36 SF**

**Temporary Wetland Impact
 Construction Access
 STA 1006+35
 44 SF**

**Temporary Stream Impact
 UT to Redwater Creek
 8.5 LF 26 SF 1.4 CY (fill)**

**Permanent Wetland Impact
 Culvert Extension &
 Fill Slope Encroachment
 STA 1007+75 to 1008+50
 727 SF**

**Permanent Stream Impact
 UT to Redwater Creek
 11'-60" RCP
 12.53 LF 12.57 SF 5.8 CY (fill)**

**Temporary Wetland Impact
 Construction Access
 STA 1006+00 to 1006+50
 158 SF**

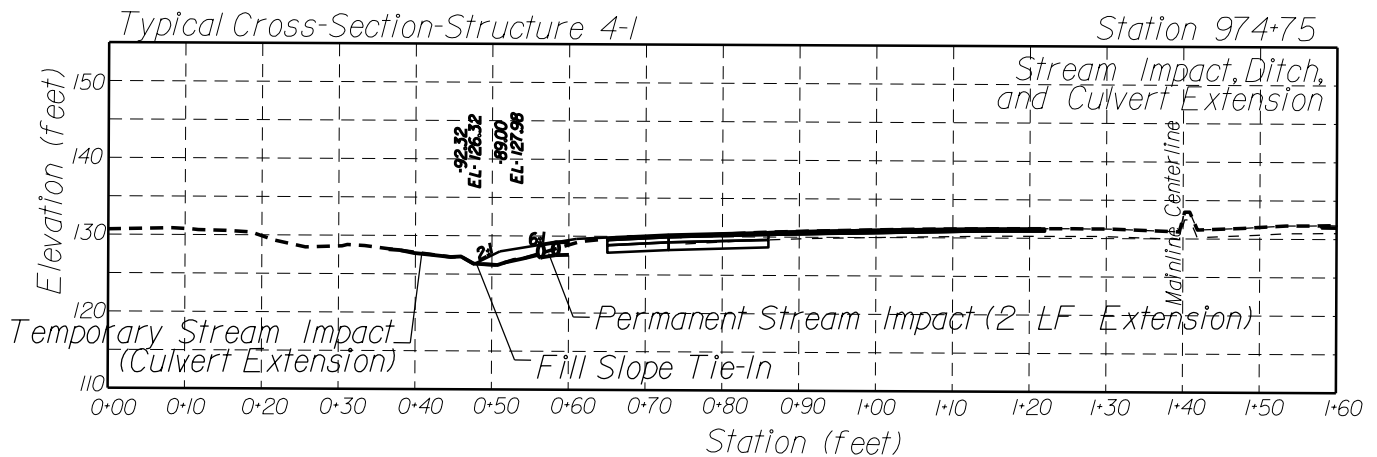
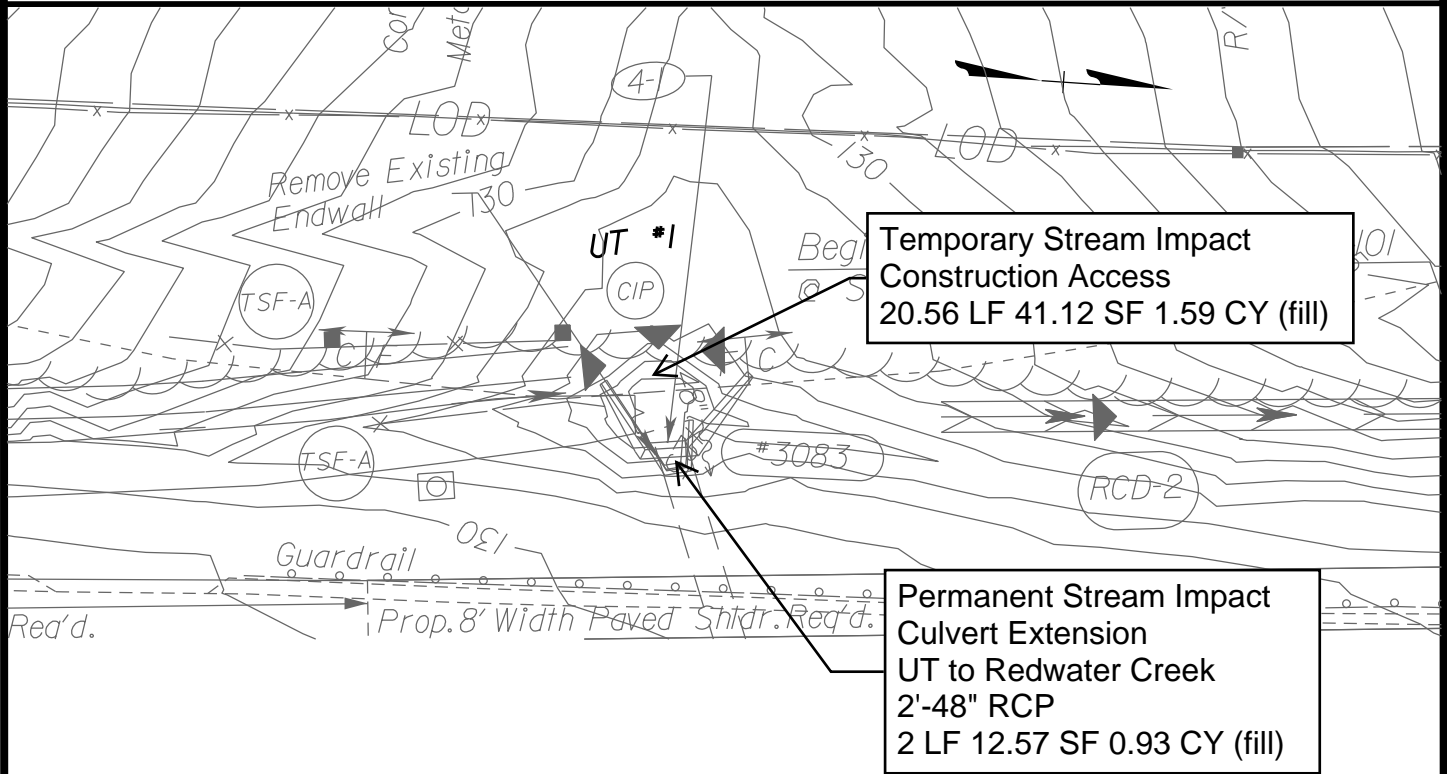
**Temporary Stream Impact
 UT to Redwater Creek
 30.29 LF 90 SF 5 CY (fill)**

**Permanent Wetland Impact
 Culvert Extension & Fill Slope
 Encroachment
 STA 1006+50 to 1007+00
 393.48 SF**

**Permanent Stream Impact
 UT to Redwater Creek
 17'-60" RCP, RipRap=41.6 LF
 58.08 LF 174 SF 9.7 CY (fill)**

| | | |
|---|---|---|
| <p>TOTAL PROPOSED JURISDICTIONAL IMPACTS THIS SHEET:</p> <p>PERMANENT WETLAND 2,383 SF</p> <p>TEMPORARY WETLAND 1,401 SF</p> | <p>FLAN VIEW CULVERT EXTENSIONS AND WETLAND ENCROACHMENT STATIONS 1002+00 TO 1005+00</p> <p>PERMANENT STREAM 672 SF 168 LF 37 CY (fill)</p> <p>TEMPORARY STREAM 180 SF 45 LF 10 CY (fill)</p> | <p>PROPOSED 195 AUXILIARY LANE IN: Unnamed Tributary to Redwater Creek PROJECT NUMBER: 0095-020-818, RW-201-C-501 APPLICATION BY: VIRGINIA DEPARTMENT OF TRANSPORTATION SHEET 4 OF 18 DATE: 12/22/2020</p> <p>SCALE - P - 25</p> |
|---|---|---|

WATER QUALITY PERMIT SKETCH DETAIL 1a - STRUCTURE 4-1



| Outfall (STR #) | Wetland (SF) | | Stream (LF) | |
|-----------------|--------------|-----------|-------------|-----------|
| | Permanent | Temporary | Permanent | Temporary |
| 3083 (4-1) | - | - | 2.00 | 20.56 |

Stream Impact From
Culvert Extension
Station 974+50LT to
Station 974+75LT

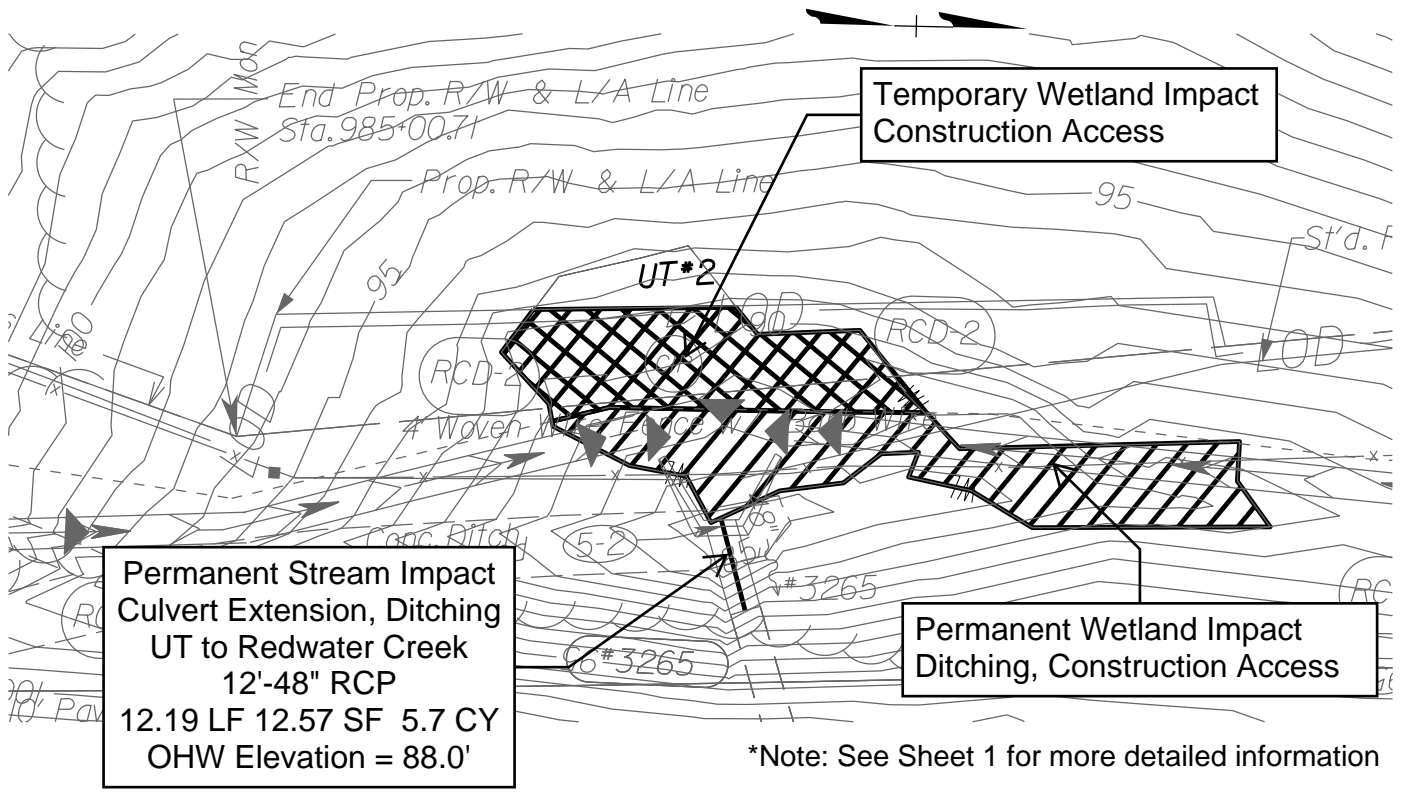
Cross-Section for
Stream Impact

SCALE - 1" = 10'

PROPOSED I-95 Auxilliary Lanes
IN: UT to Redwater Creek
PROJECT NO: 0095-020-818
APPLICATION BY: VIRGINIA
DEPARTMENT OF TRANSPORTATION

SHEET 5 OF 18 **DATE:** 2/22/2021

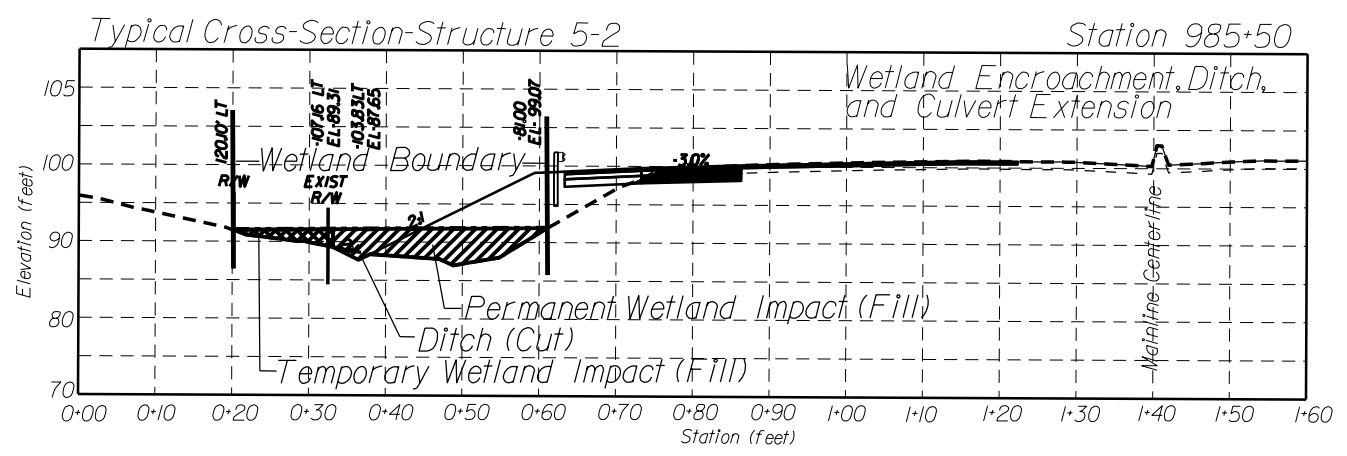
WATER QUALITY PERMIT SKETCH SHEET 1, DETAIL 1 - STRUCTURE 5-2



Permanent Stream Impact
 Culvert Extension, Ditching
 UT to Redwater Creek
 12'-48" RCP
 12.19 LF 12.57 SF 5.7 CY
 OHW Elevation = 88.0'

Permanent Wetland Impact
 Ditching, Construction Access

*Note: See Sheet 1 for more detailed information



| Outfall (STR #) | Wetland (SF) | | Stream (LF) | |
|-----------------|--------------|-----------|-------------|-----------|
| | Permanent | Temporary | Permanent | Temporary |
| 3265 (5-2) | 813.36 | 584.83 | 12.19 | - |

Wetland & Stream Impact
 From Culvert Extension
 Station 985+00LT to
 Station 985+75LT

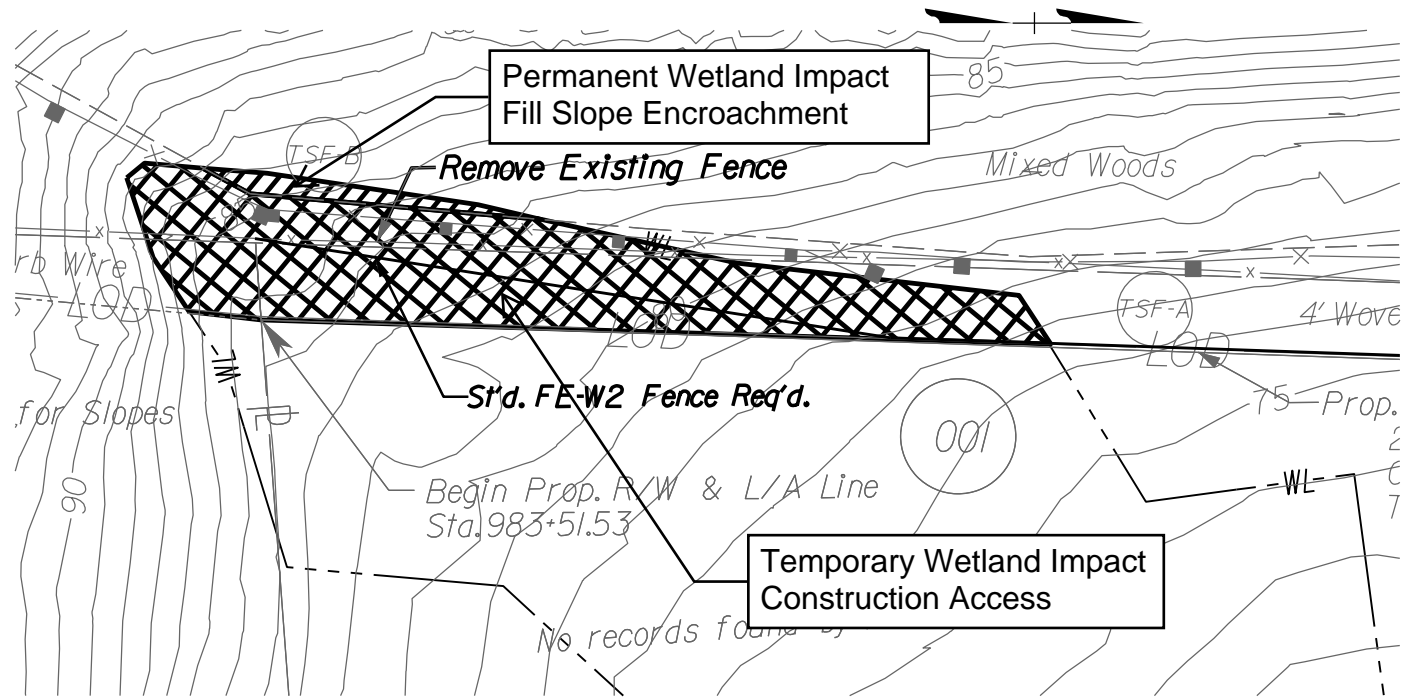
Cross-Section for
 Wetland & Stream Impact

SCALE - 1" = 10'

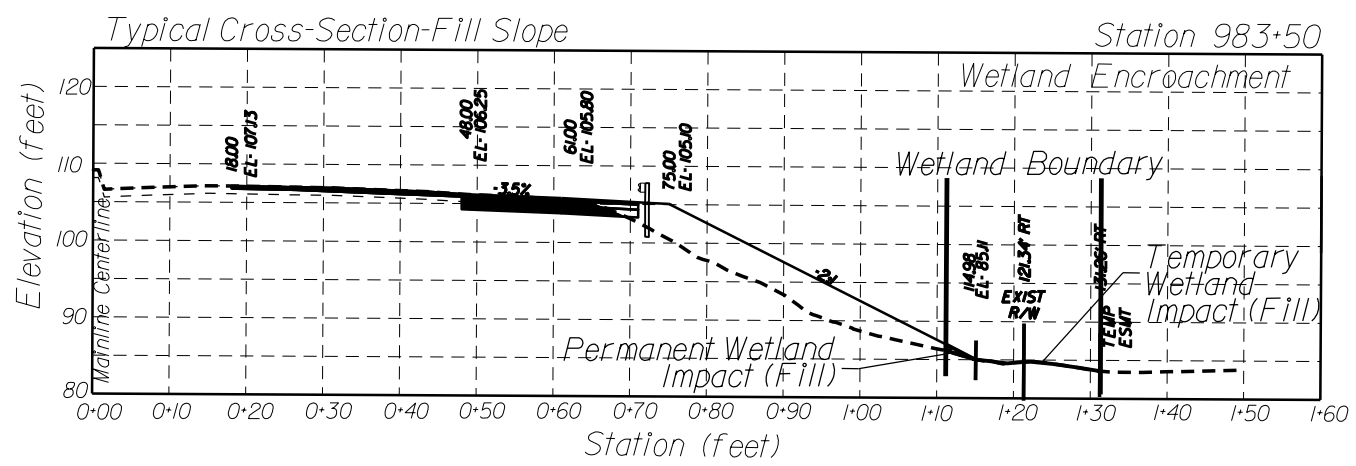
PROPOSED I-95 Auxilliary Lanes
 IN: UT to Redwater Creek
PROJECT NO: 0095-020-818
APPLICATION BY: VIRGINIA
 DEPARTMENT OF TRANSPORTATION

SHEET 6 OF 18 DATE: 2/22/2021

WATER QUALITY PERMIT SKETCH SHEET 1, DETAIL 2 - FILL SLOPE



*Note: See Sheet 1 for more detailed information



| Outfall (STR #) | Wetland (SF) | | Stream (LF) | |
|-----------------|--------------|-----------|-------------|-----------|
| | Permanent | Temporary | Permanent | Temporary |
| 983+50RT | 76.11 | 1414.53 | - | - |

Wetland Impact From
 Fill Slope at
 Station 983+50RT to
 Station 984+50RT

Cross-Section for Wetland
 Encroachment

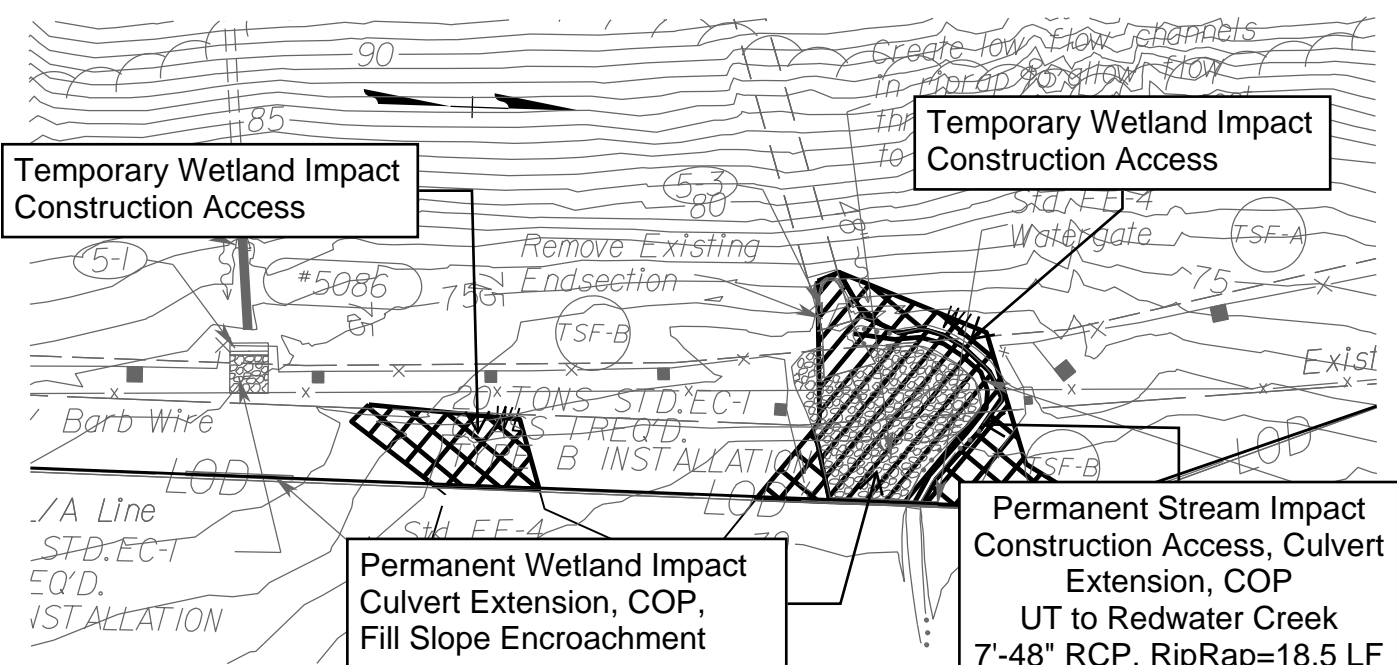
SCALE - 1" = 10'

PROPOSED I-95 Auxiliary Lanes
 IN: Redwater Creek
 PROJECT NO: 0095-020-818
 APPLICATION BY: VIRGINIA
 DEPARTMENT OF TRANSPORTATION

SHEET 7 OF 18 DATE: 2/22/2021

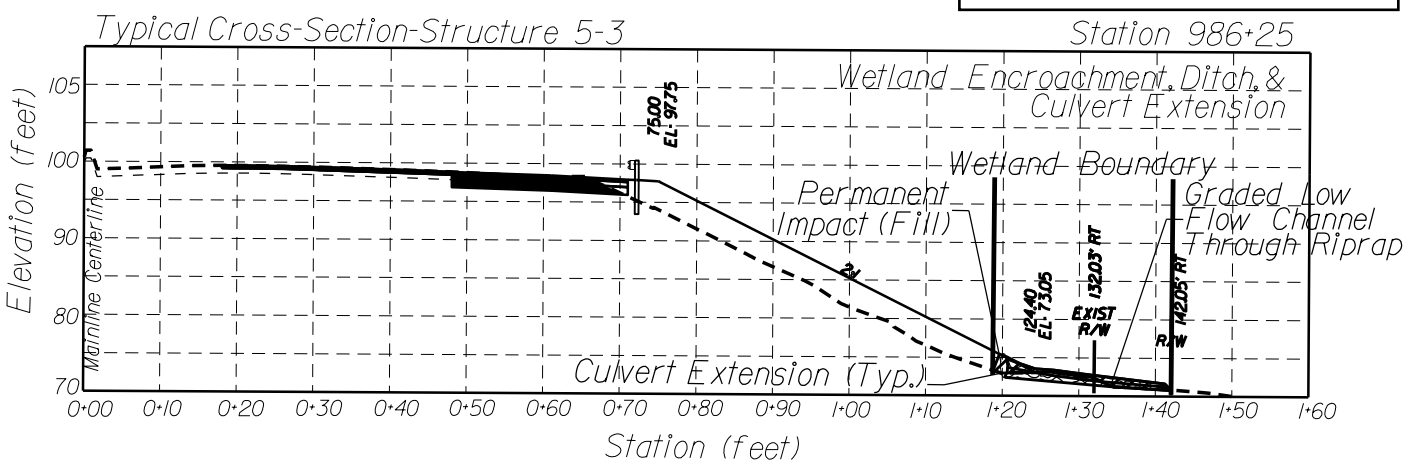
WATER QUALITY PERMIT SKETCH

SHEET 1, DETAIL 3 - FILL SLOPE & STRUCTURE 5-1 & 5-3



*Note: See Sheet 1 for more detailed information.

Permanent Stream Impact Construction Access, Culvert Extension, COP
 UT to Redwater Creek
 7'-48" RCP, RipRap=18.5 LF
 38.61 LF 104 SF 7.7 CY (fill)
 OHW Elevation = 70.0'



| Outfall (STR #) | Wetland (SF) | | Stream (LF) | |
|-----------------|--------------|-----------|-------------|-----------|
| | Permanent | Temporary | Permanent | Temporary |
| 3470 (5-1) | - | 178.40 | - | |
| 3265 (5-3) | 472.64 | 256.66 | 38.61 | - |

Wetland Impact From
 Culvert Extension and
 Fill Slope at
 Station 985+50RT to
 Station 986+50RT

Cross-Section for Wetland
 Encroachment

SCALE - 1" = 10'

PROPOSED I-95 Auxilliary Lanes
 IN: Unnamed Tributary to Redwater Creek
 PROJECT NO: 0095-020-818
 APPLICATION BY: VIRGINIA
 DEPARTMENT OF TRANSPORTATION

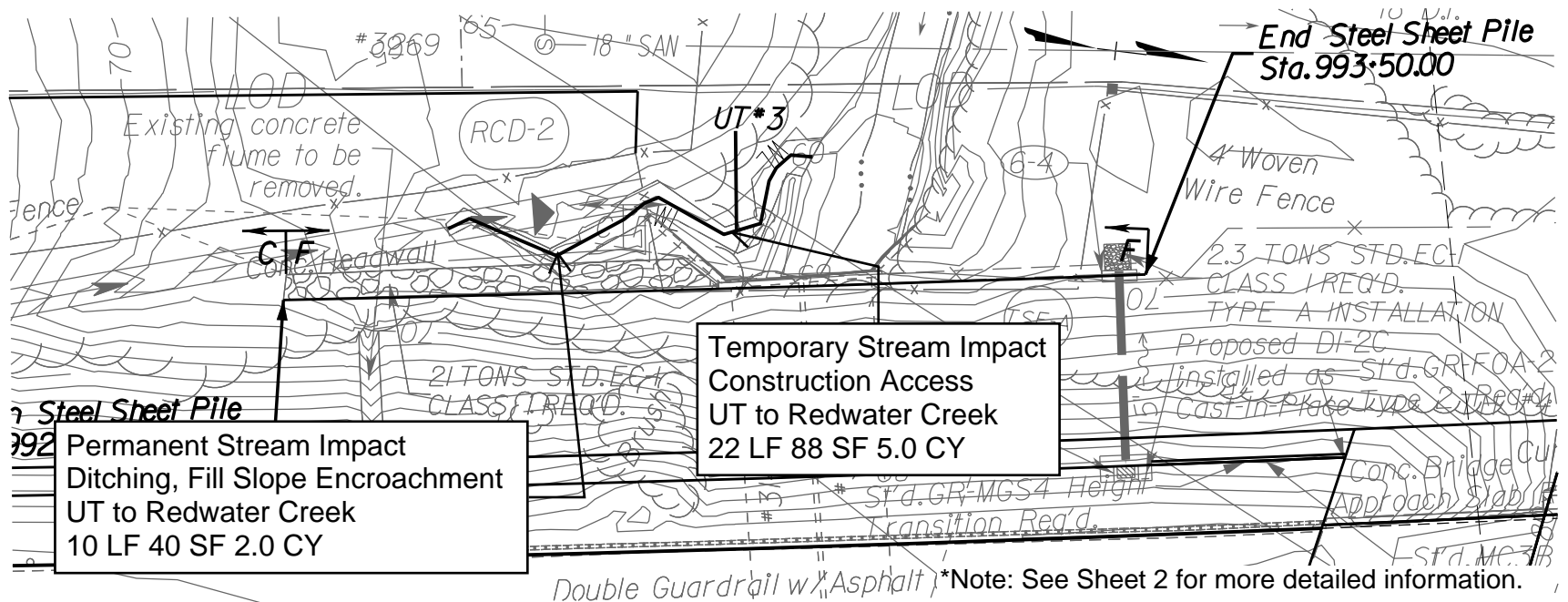
SHEET 8 OF 18 DATE: 2/22/2021

WATER QUALITY PERMIT SKETCH

SHEET 2, DETAIL 1 - FILL SLOPE, SHEET PILING RETAINING WALL

Wetland Impact From
 Sheet Piling Retaining Wall,
 Ditch, & Fill Slope at
 Station 992+50LT to
 Station 993+00LT

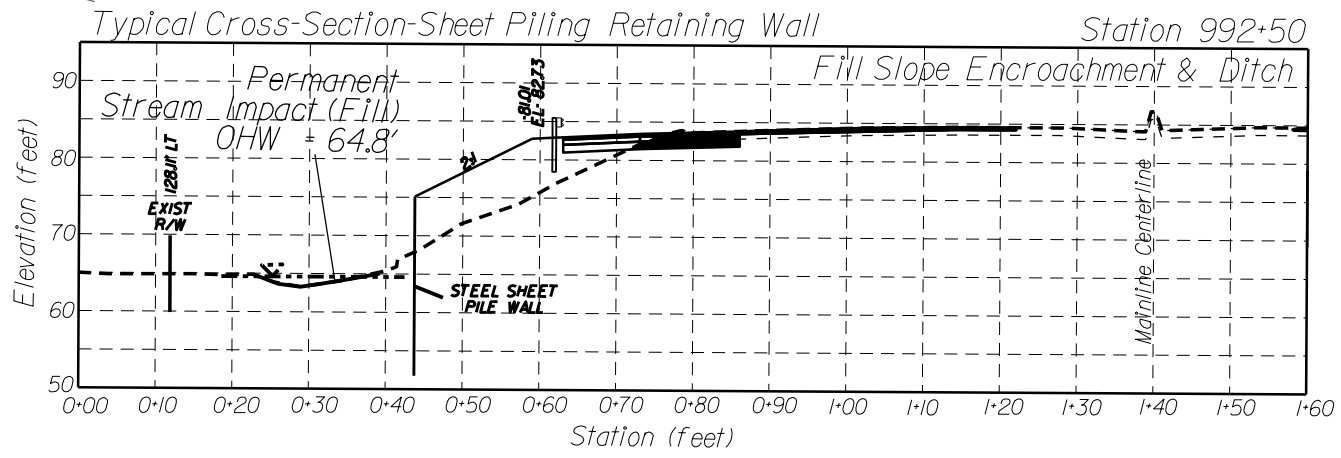
Cross-Section for Wetland
 Encroachment
 SCALE - 1" = 10'



Steel Sheet Pile
 Permanent Stream Impact
 Ditching, Fill Slope Encroachment
 UT to Redwater Creek
 10 LF 40 SF 2.0 CY

Temporary Stream Impact
 Construction Access
 UT to Redwater Creek
 22 LF 88 SF 5.0 CY

Double Guardrail w/ Asphalt *Note: See Sheet 2 for more detailed information.

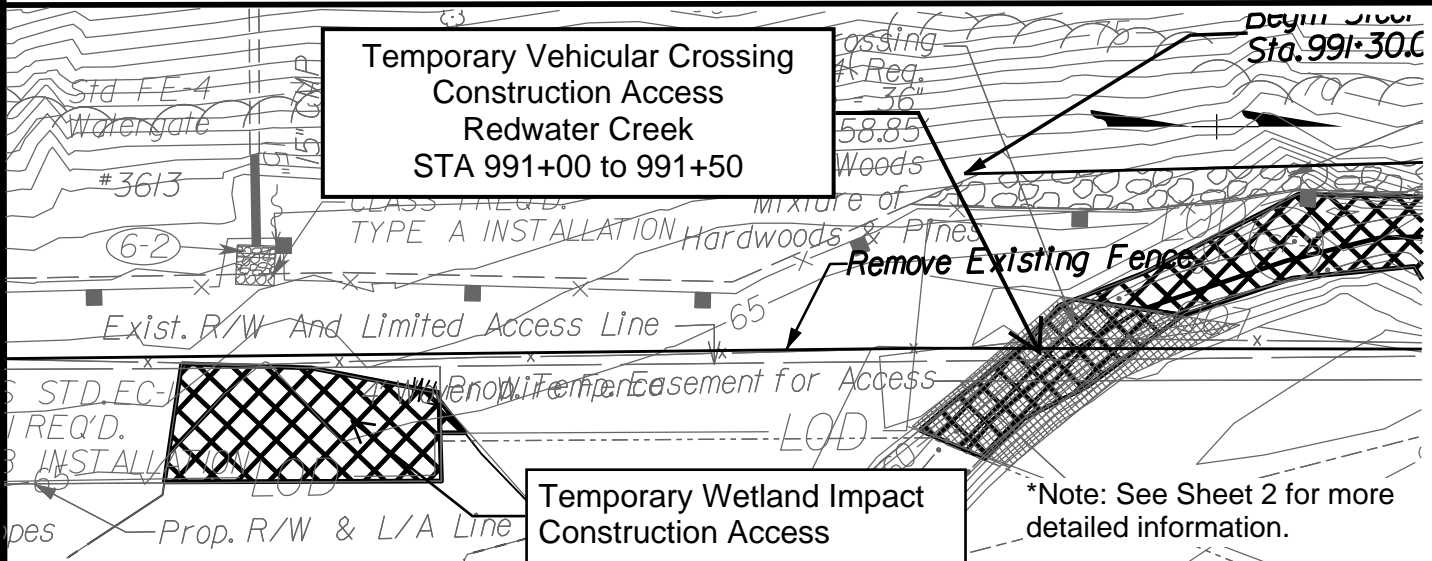


| Structure No. | Wetlands | | Stream | | | | | |
|---------------|-----------|-----------|-----------|----|----|-----------|----|----|
| | Permanent | Temporary | Permanent | | | Temporary | | |
| | SF | SF | LF | SF | CY | LF | SF | CY |
| Near 6-4 | - | - | 10 | 40 | 2 | 22 | 88 | 5 |

PROPOSED I-95 Auxiliary Lanes
 IN: Unnamed Tributary to Redwater Creek
 PROJECT NO: 0095-020-818
 APPLICATION BY: VIRGINIA
 DEPARTMENT OF TRANSPORTATION
 SHEET 9 OF 18 DATE: 2/22/2021

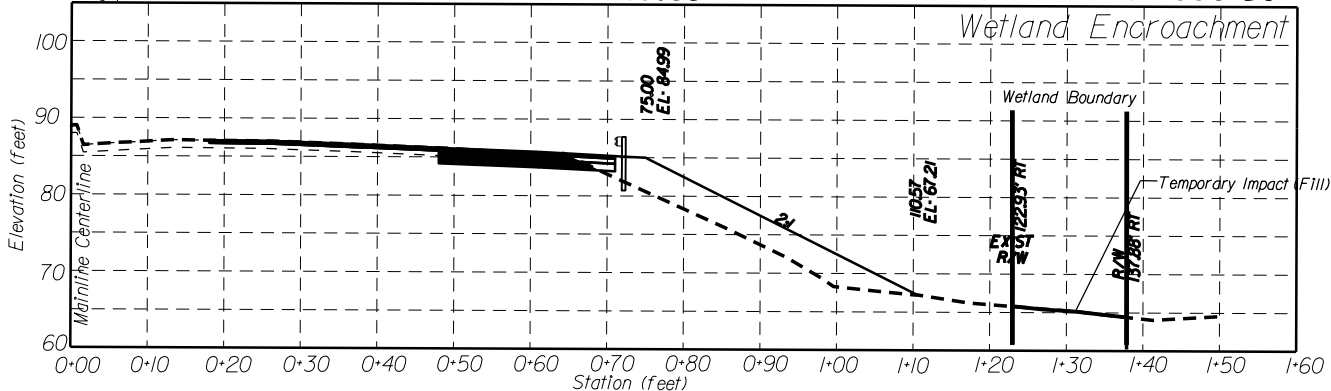
WATER QUALITY PERMIT SKETCH

SHEET 2, DETAIL 2 - FILL SLOPE, RETAINING WALL



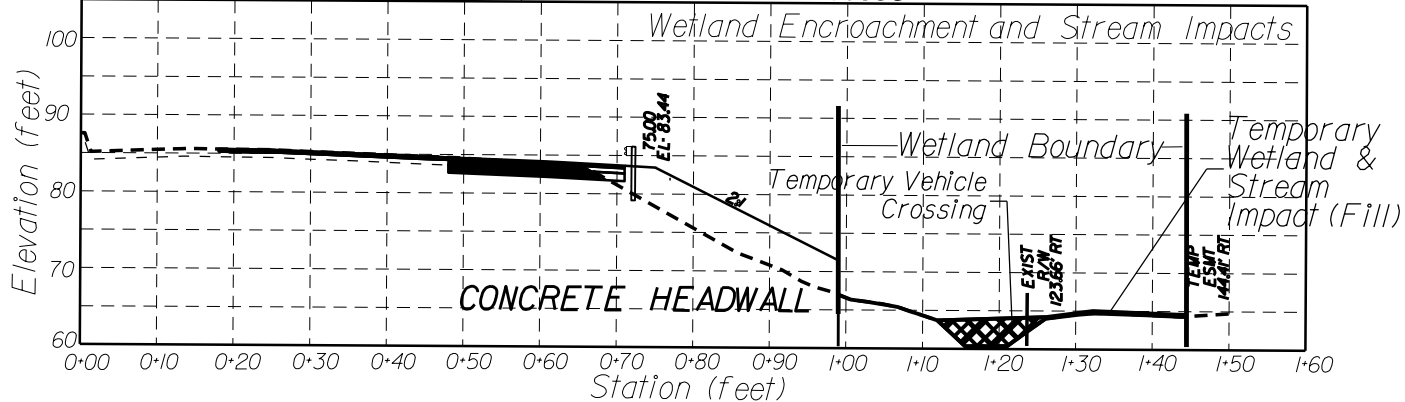
Typical Cross-Section-Construction Access

Station 990+50



Typical Cross-Section-Fill Slope & Construction Access

Station 991+50



| Outfall (STR #) | Wetland (SF) | | Stream (LF) | |
|-----------------|--------------|-----------|-------------|-----------|
| | Permanent | Temporary | Permanent | Temporary |
| 3087 (6-2) | - | 494.55 | - | - |
| Near (6-6) | - | 2,815.33 | - | 319.52 |

Wetland Impact From Construction Access & Fill Slope at Station 990+00RT to Station 991+75RT

Cross-Section for Wetland Encroachment & Stream Impacts

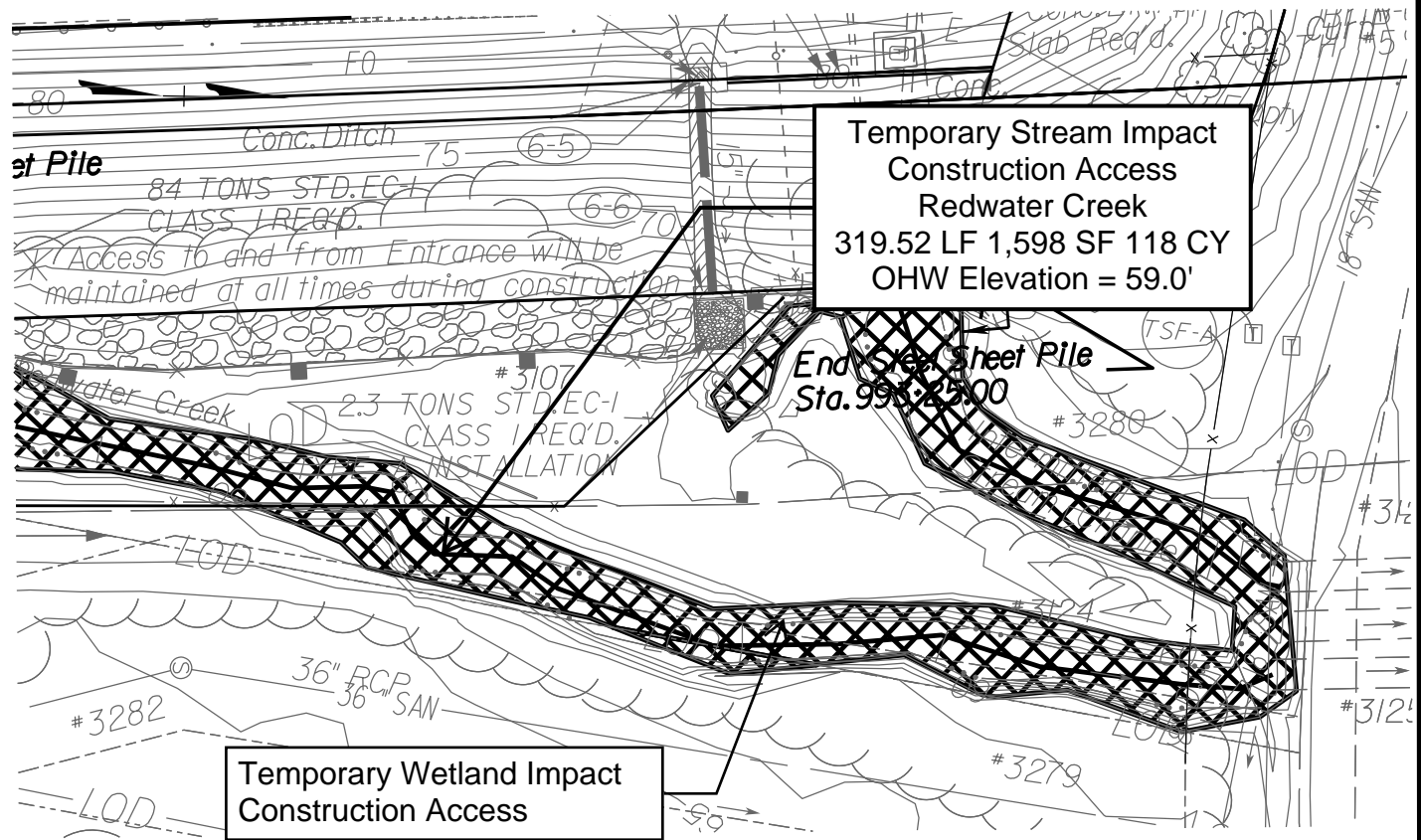
PROPOSED I-95 Auxilliary Lanes
 IN: Redwater Creek
 PROJECT NO: 0095-020-818
 APPLICATION BY: VIRGINIA DEPARTMENT OF TRANSPORTATION

SCALE - 1" = 10'

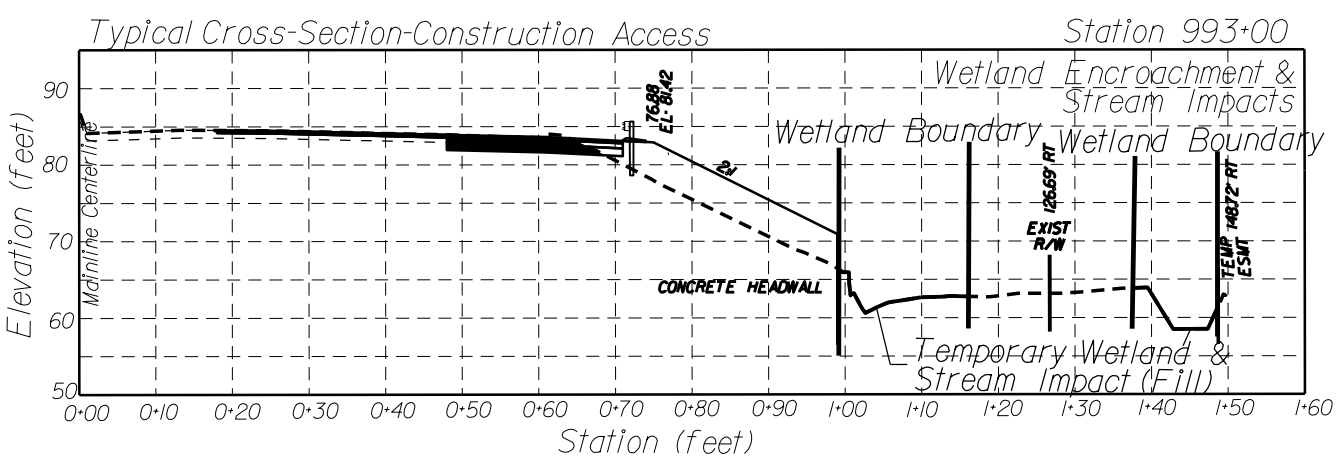
SHEET 10 OF 18 DATE: 2/22/2021

WATER QUALITY PERMIT SKETCH

SHEET 2, DETAIL 3 - FILL SLOPE, RETAINING WALL



*Note: See Sheet 2 for more detailed information



| Outfall (STR #) | Wetland (SF) | | Stream (LF) | |
|-----------------|--------------|-----------|-------------|-----------|
| | Permanent | Temporary | Permanent | Temporary |
| Near (6-6) | - | 2,815.33 | - | 319.52 |

Wetland Impact From Construction Access & Fill Slope at Station 992+00RT to Station 993+50RT

Cross-Section for Wetland Encroachment & Stream Impacts

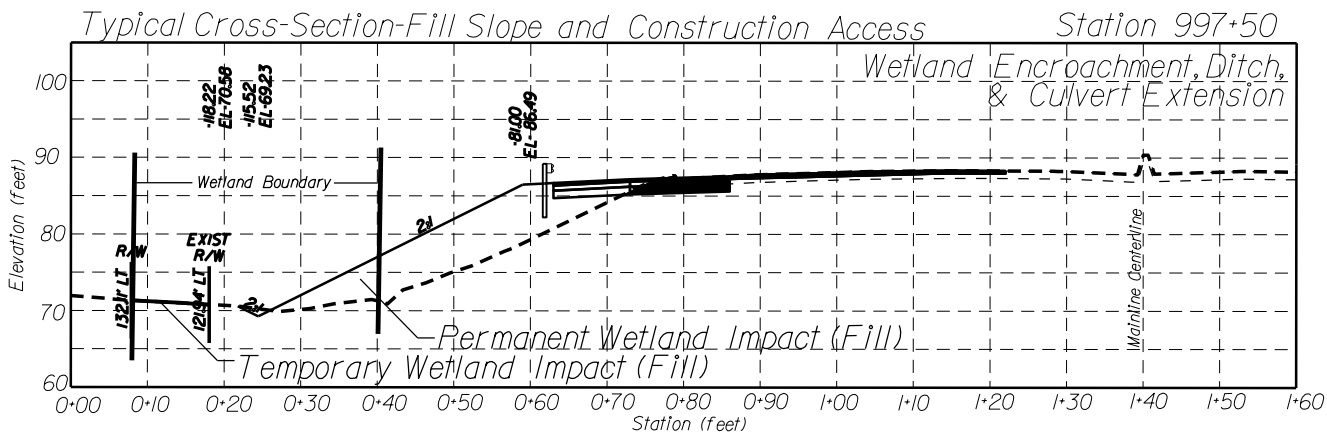
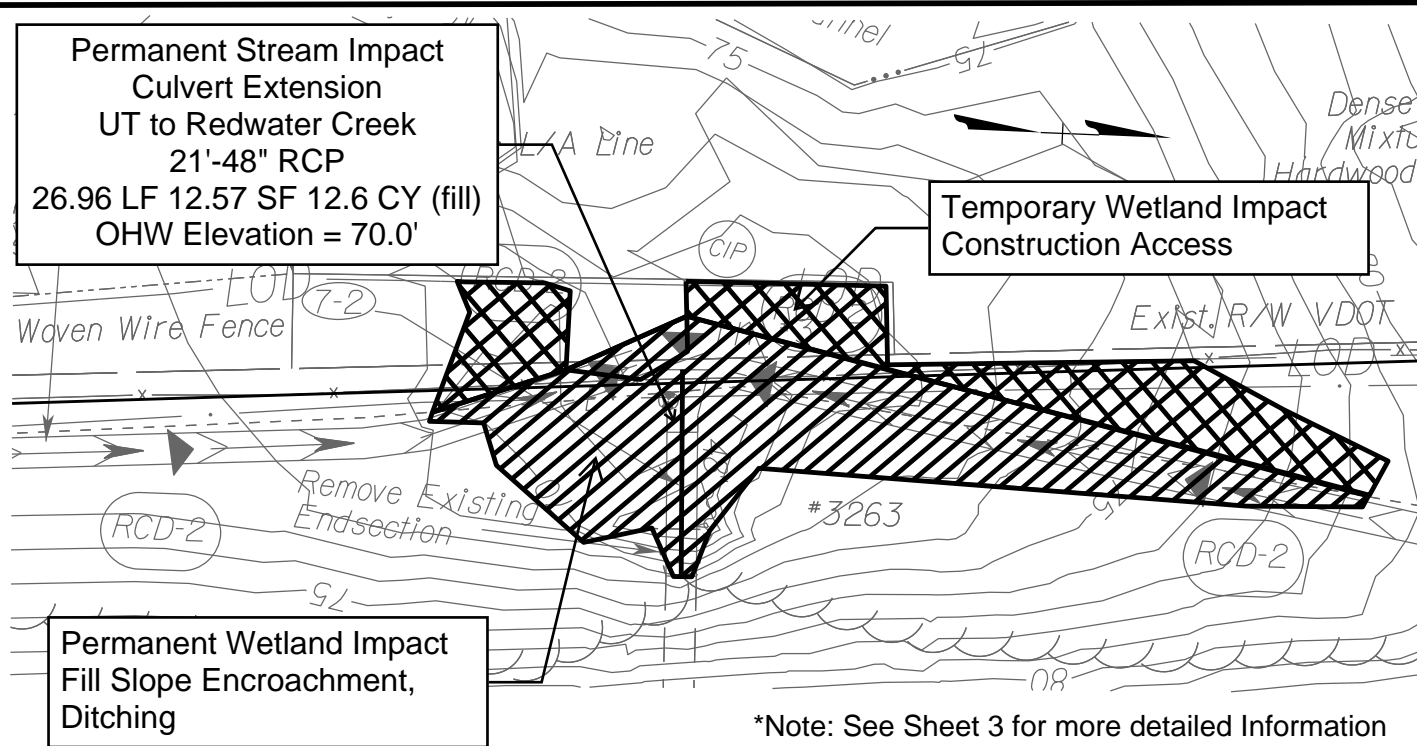
SCALE - 1" = 10'

PROPOSED I-95 Auxilliary Lanes
 IN: Redwater Creek
 PROJECT NO: 0095-020-818
 APPLICATION BY: VIRGINIA DEPARTMENT OF TRANSPORTATION

SHEET 11 OF 18 DATE: 2/22/2021

WATER QUALITY PERMIT SKETCH

SHEET 3, DETAIL 1 - FILL SLOPE, CULVERT EXTENSION



| Outfall (STR #) | Wetland (SF) | | Stream (LF) | |
|-----------------|--------------|-----------|-------------|-----------|
| | Permanent | Temporary | Permanent | Temporary |
| 3263 (7-2) | 1,593.72 | 844.83 | 26.96 | - |

*Wetland Impact From
 Construction Access &
 Fill Slope at
 Station 997+00LT to
 Station 998+00LT*

*Cross-Section for Wetland
 Encroachment*

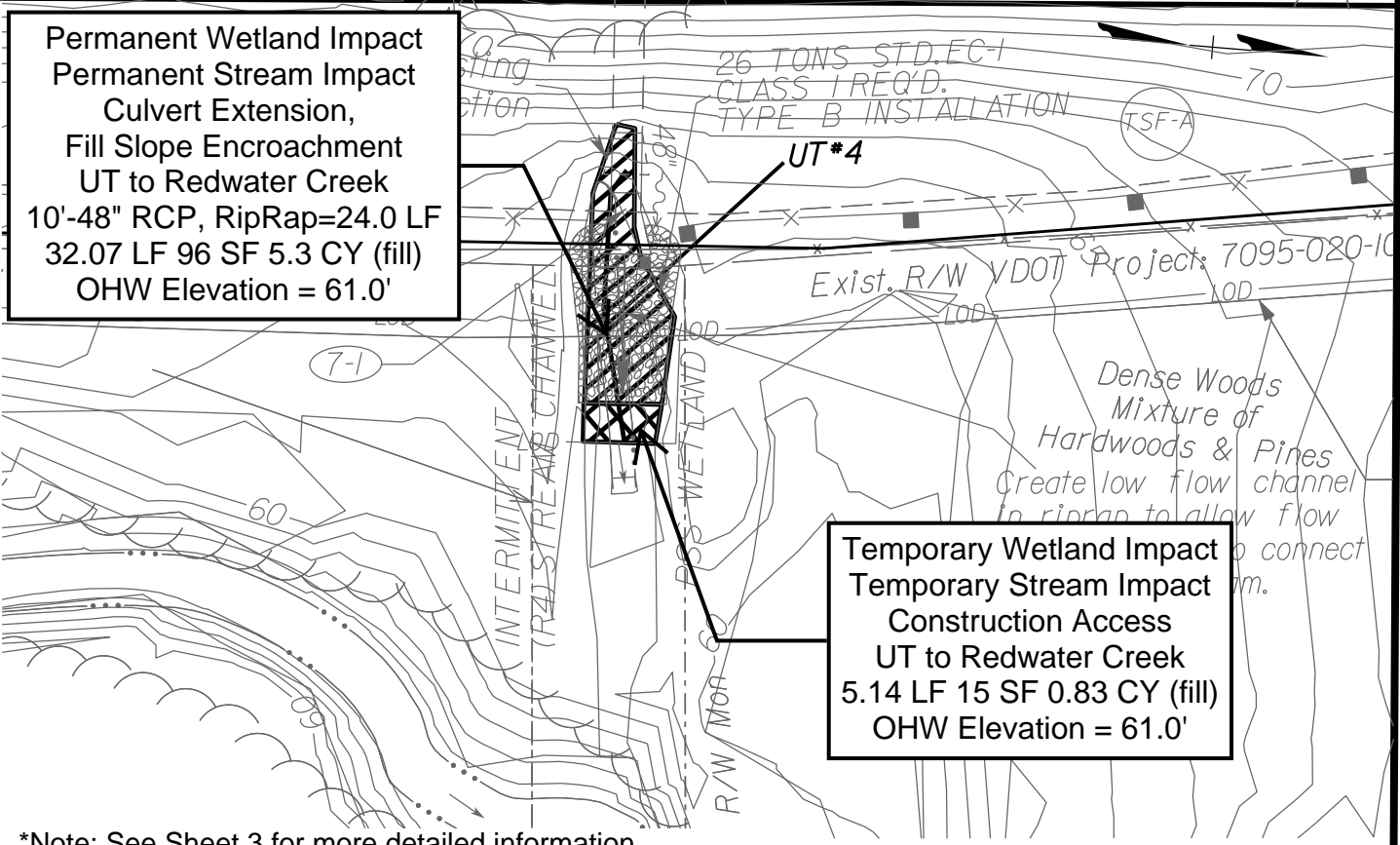
SCALE - 1" = 10'

**PROPOSED I-95 Auxilliary Lanes
 IN: Unnamed Tributary to Redwater Creek
 PROJECT NO: 0095-020-818
 APPLICATION BY: VIRGINIA
 DEPARTMENT OF TRANSPORTATION**

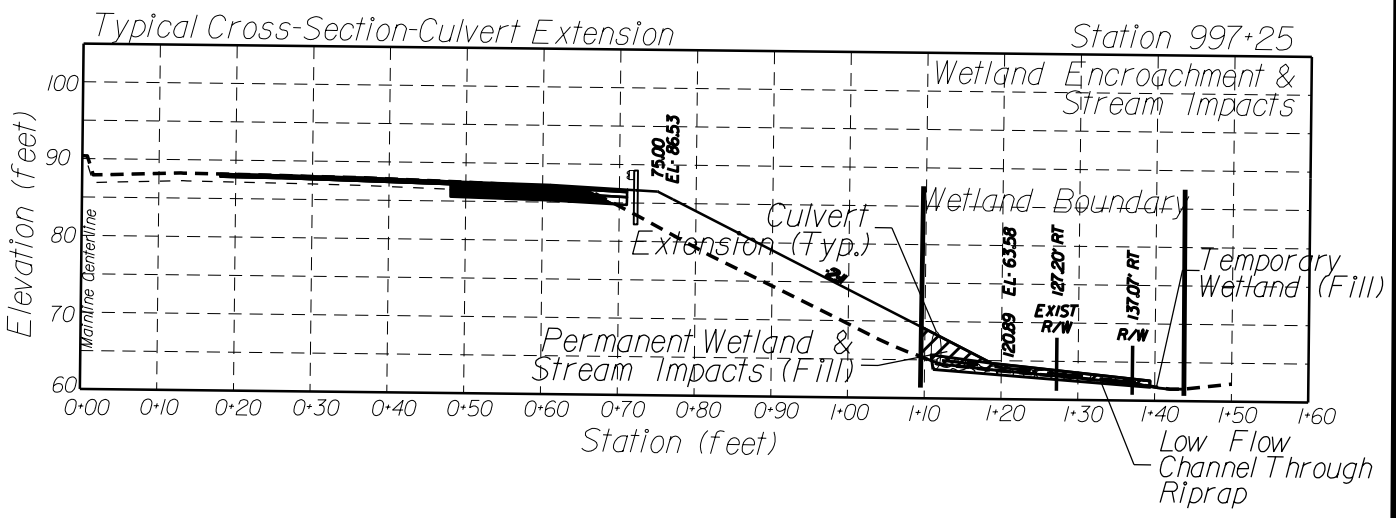
SHEET 12 OF 18 DATE: 2/22/2021

WATER QUALITY PERMIT SKETCHES

SHEET 3, DETAIL 2 - FILL SLOPE, CULVERT EXTENSION



*Note: See Sheet 3 for more detailed information.



| Outfall (STR #) | Wetland (SF) | | Stream (LF) | |
|-----------------|--------------|-----------|-------------|-----------|
| | Permanent | Temporary | Permanent | Temporary |
| 3263 (7-1) | 287.44 | 52.01 | 32.07 | 5.14 |

Wetland Impact From
 Fill Slope & Culvert
 Extension at
 Station 997+25RT to
 Station 997+50RT

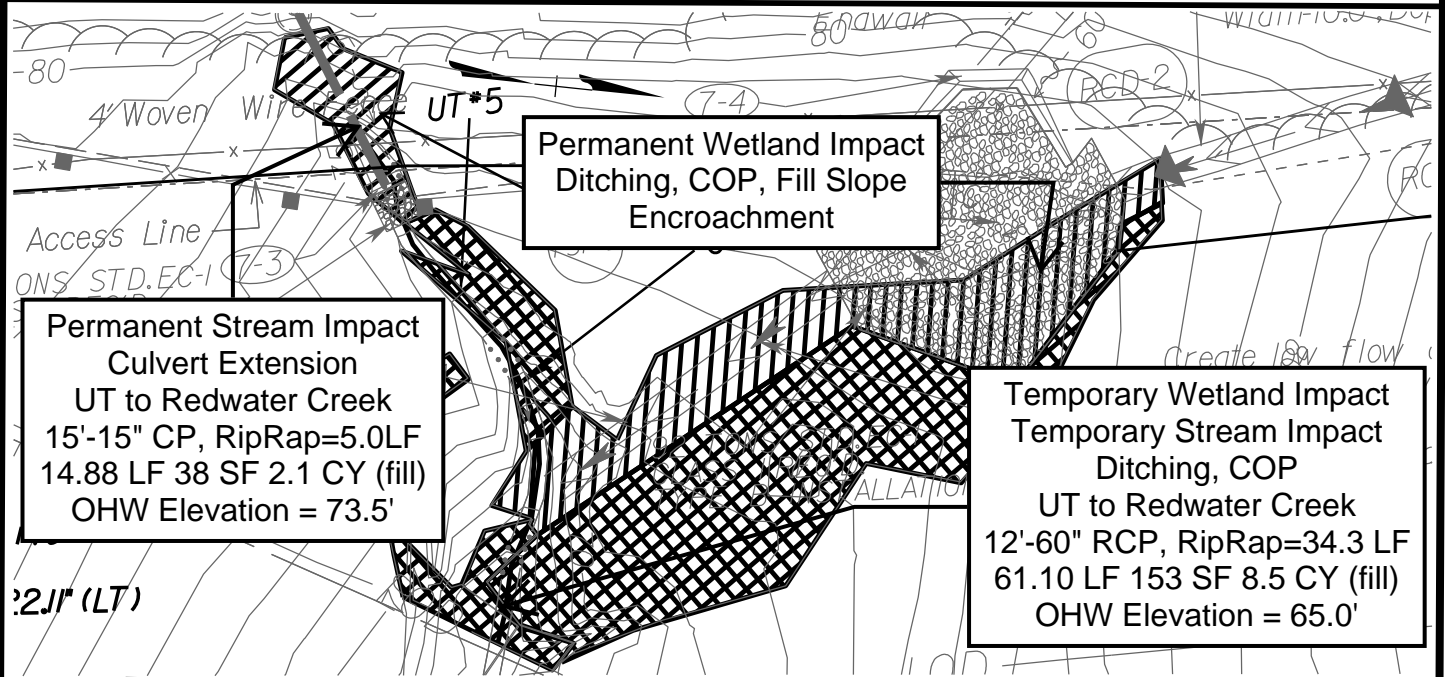
Cross-Section for Wetland
 Encroachment

SCALE - 1" = 10'

PROPOSED I-95 Auxilliary Lanes
 IN: UT to Redwater Creek
 PROJECT NO: 0095-020-818
 APPLICATION BY: VIRGINIA
 DEPARTMENT OF TRANSPORTATION

DETAIL 13 OF 18 DATE: 2/22/2021

WATER QUALITY PERMIT SKETCH SHEET 3, DETAIL 3 - FILL SLOPE, CULVERT EXTENSION



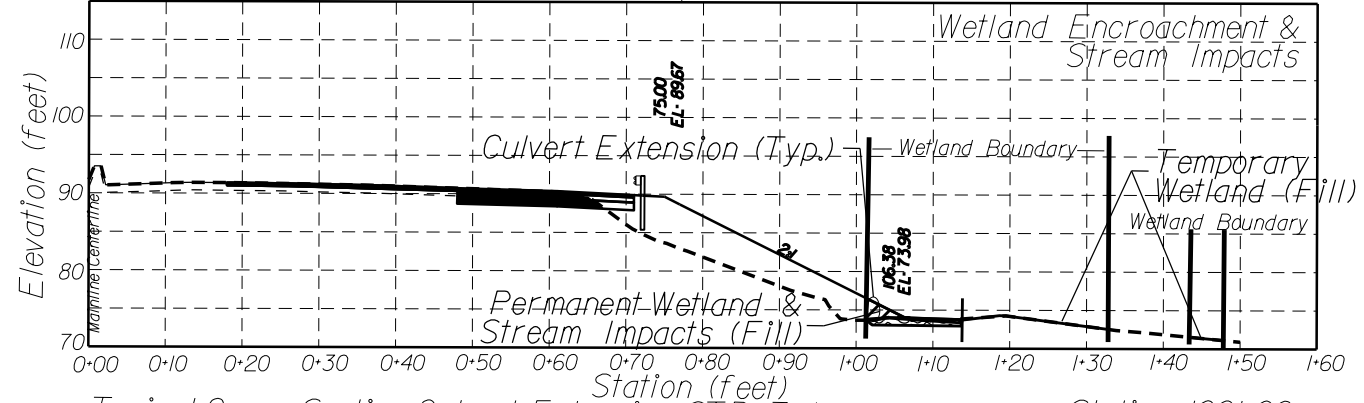
**Permanent Stream Impact
Culvert Extension**
UT to Redwater Creek
15'-15" CP, RipRap=5.0LF
14.88 LF 38 SF 2.1 CY (fill)
OHW Elevation = 73.5'

**Permanent Wetland Impact
Ditching, COP, Fill Slope
Encroachment**

**Temporary Wetland Impact
Temporary Stream Impact
Ditching, COP**
UT to Redwater Creek
12'-60" RCP, RipRap=34.3 LF
61.10 LF 153 SF 8.5 CY (fill)
OHW Elevation = 65.0'

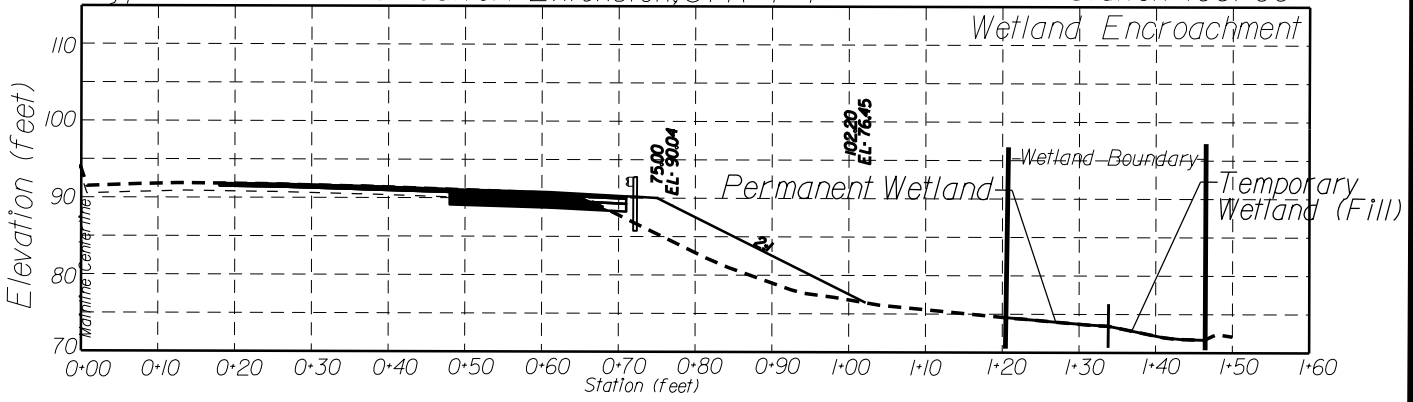
Typical Cross-Section-Culvert Extension, STR 7-3

Station 1000+50



Typical Cross-Section-Culvert Extension, STR 7-4

Station 1001+00



| Outfall (STR #) | Wetland (SF) | | Stream (LF) | |
|-----------------|--------------|-----------|-------------|-----------|
| | Permanent | Temporary | Permanent | Temporary |
| 3176 (7-3) | 214.64 | 232.43 | 14.88 | 61.10 |
| 3260 (7-4) | 890.75 | 1,620.80 | - | - |

*Note: See Sheet 3 for more detailed information.

Wetland Impact From
Fill Slope & Culvert
Extension at
Station 1000+25RT to
Station 1001+50RT

Cross-Section for Wetland
Encroachment, Culvert
Extension, &
Stream Impacts

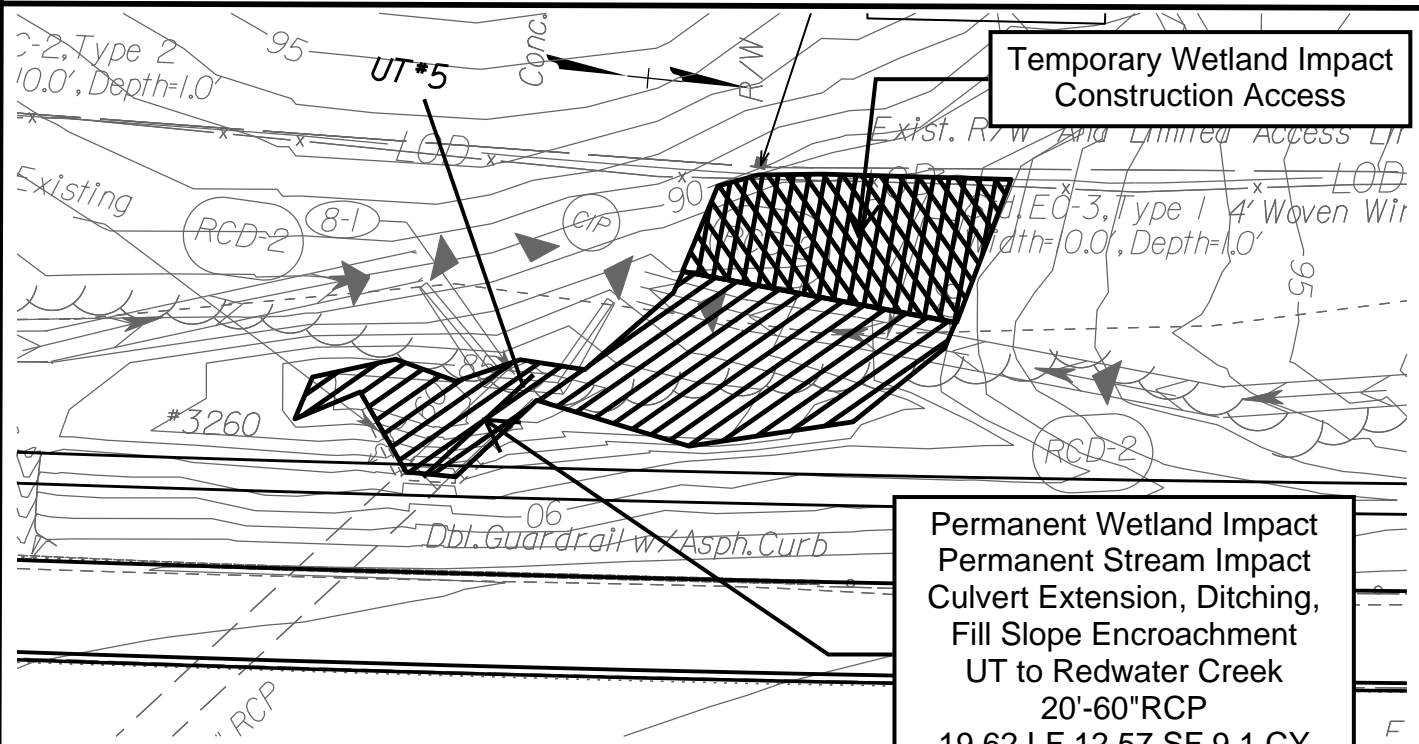
SCALE - 1" = 10'

PROPOSED I-95 Auxiliary Lanes
IN: UT to Redwater Creek
PROJECT NO: 0095-020-818
APPLICATION BY: VIRGINIA
DEPARTMENT OF TRANSPORTATION

SHEET 14 OF 18 DATE: 2/22/2021

WATER QUALITY PERMIT SKETCH

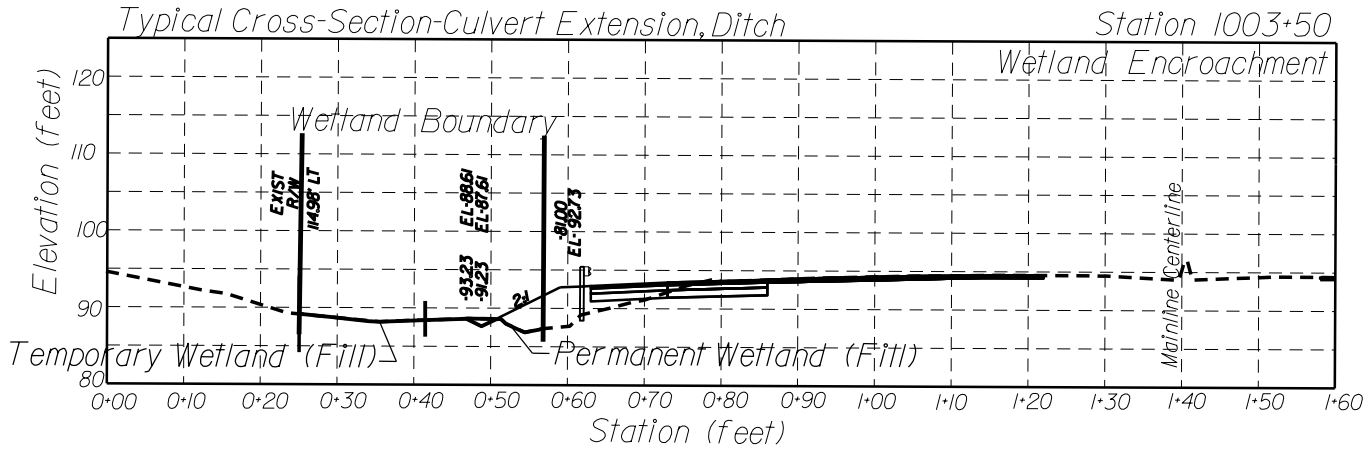
SHEET 4, DETAIL 1 - FILL SLOPE, DITCH



Temporary Wetland Impact Construction Access

**Permanent Wetland Impact
Permanent Stream Impact
Culvert Extension, Ditching,
Fill Slope Encroachment
UT to Redwater Creek
20'-60"RCP
19.62 LF 12.57 SF 9.1 CY
OHW Elevation = 86.5'**

*Note: See Sheet 4 for more detailed information.



| Outfall (STR #) | Wetland (SF) | | Stream (LF) | |
|-----------------|--------------|-----------|-------------|-----------|
| | Permanent | Temporary | Permanent | Temporary |
| 3260 (8-1) | 1,010.74 | 597.02 | 19.62 | - |

Wetland Impact From
Fill Slope, Ditch, & Culvert
Extension at
Station 1002+75LT to
Station 1003+75LT

Cross-Section for Wetland
Encroachment, Culvert
Extension, & Ditch

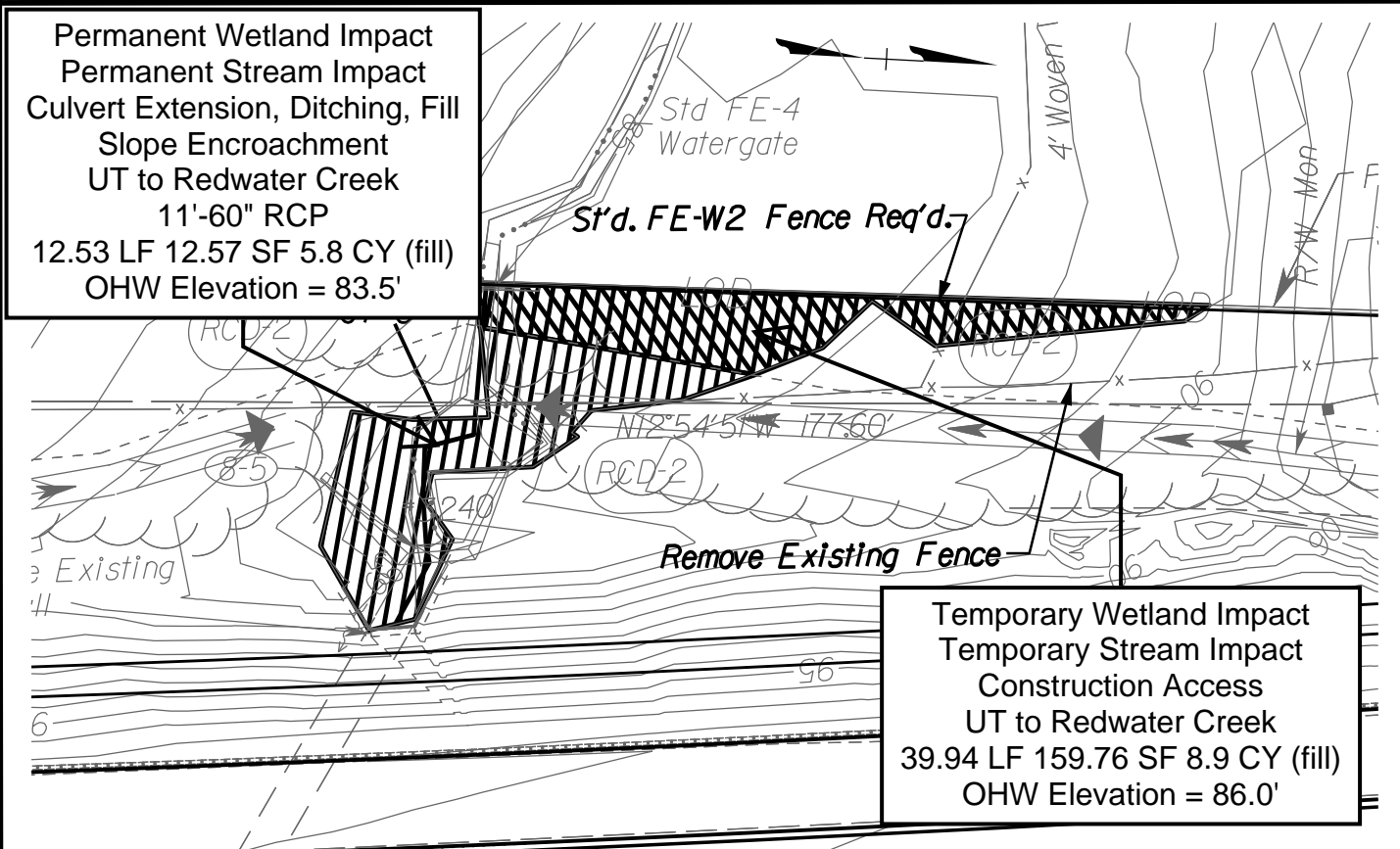
SCALE - 1" = 10'

PROPOSED I-95 Auxilliary Lanes
IN: UT to Redwater Creek
PROJECT NO: 0095-020-818
APPLICATION BY: VIRGINIA
DEPARTMENT OF TRANSPORTATION

SHEET 15 OF 18 DATE: 2/22/2021

WATER QUALITY PERMIT SKETCH

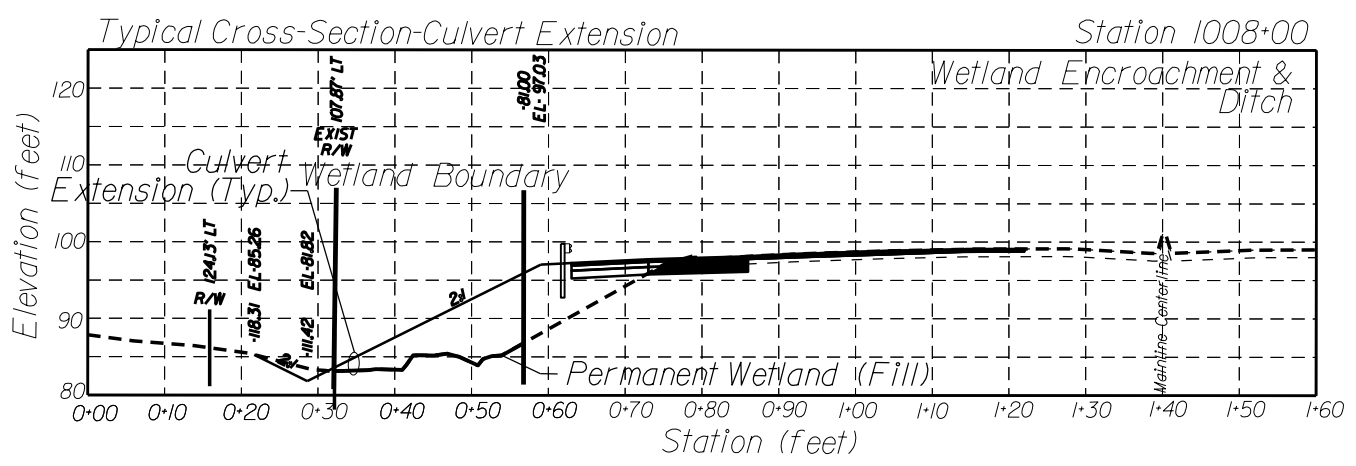
SHEET 4, DETAIL 2 - FILL SLOPE, DITCH



Permanent Wetland Impact
 Permanent Stream Impact
 Culvert Extension, Ditching, Fill
 Slope Encroachment
 UT to Redwater Creek
 11'-60" RCP
 12.53 LF 12.57 SF 5.8 CY (fill)
 OHW Elevation = 83.5'

Temporary Wetland Impact
 Temporary Stream Impact
 Construction Access
 UT to Redwater Creek
 39.94 LF 159.76 SF 8.9 CY (fill)
 OHW Elevation = 86.0'

*Note: See Sheet 4 for more detailed information.



| Outfall (STR #) | Wetland (SF) | | Stream (LF) | |
|-----------------|--------------|-----------|-------------|-----------|
| | Permanent | Temporary | Permanent | Temporary |
| 3240 (8-5) | 727.3 | 602.39 | 12.53 | 39.94 |

Wetland Impact From
 Fill Slope, Ditch, & Culvert
 Extension at
 Station 1007+75LT to
 Station 1009+00LT

Cross-Section for Wetland
 Encroachment, Culvert
 Extension, & Ditch

SCALE - 1" = 10'

PROPOSED I-95 Auxilliary Lanes
 IN: Unnamed Tributary to Redwater Creek
PROJECT NO: 0095-020-818
APPLICATION BY: VIRGINIA
 DEPARTMENT OF TRANSPORTATION

SHEET 16 OF 18 **DATE:** 2/22/202

WATER QUALITY PERMIT SKETCH

SHEET 4, DETAIL 3 - FILL SLOPE, CULVERT EXTENSION

Permanent Wetland Impact Culvert Extension, COP
 11'-36" RCP,
 RipRap=8.3 LF

Permanent Wetland Impact Permanent Stream Impact Culvert Extension, COP
 UT to Redwater Creek
 17'-60" RCP, RipRap=41.6 LF
 58.08 LF 174 SF 9.7 CY (fill)
 OHW Elevation = 75.0'

Temporary Wetland Impact Temporary Stream Impact Construction Access
 UT to Redwater Creek
 30.29 LF 90 SF 5.0 CY (fill)
 OHW Elevation = 74.0'

Create a low flow channel in riprap to allow flow through riprap to connect to existing channel.

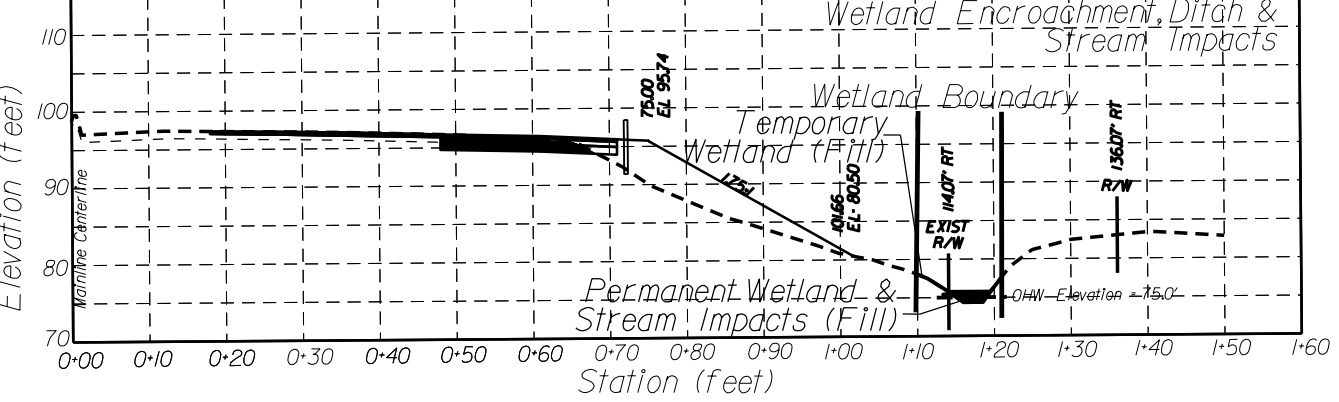
Sediment trap is temporary; remove sediment trap and grade to existing elevations and create new ditch channel as shown after construction is complete.

TST-2
 Bottom Elev. = 82'
 DA = 1.52 AC
 Total Volume = 279 CY

*Note: See Sheet 4 for more detailed information.

Typical Cross-Section-Culvert Extension

Station 1006+50



| Outfall (STR #) | Wetland (SF) | | Stream (LF) | |
|-----------------|--------------|-----------|-------------|-----------|
| | Permanent | Temporary | Permanent | Temporary |
| 3242 (8-3) | 97.36 | - | - | - |
| 3240 (8-6) | 393.48 | 158.4 | 58.08 | 30.29 |

Wetland Impact From Fill Slope, Ditch, & Culvert Extension at Station 1006+00RT to Station 1007+00RT

Cross-Section for Wetland Encroachment, Culvert Extension, & Ditch

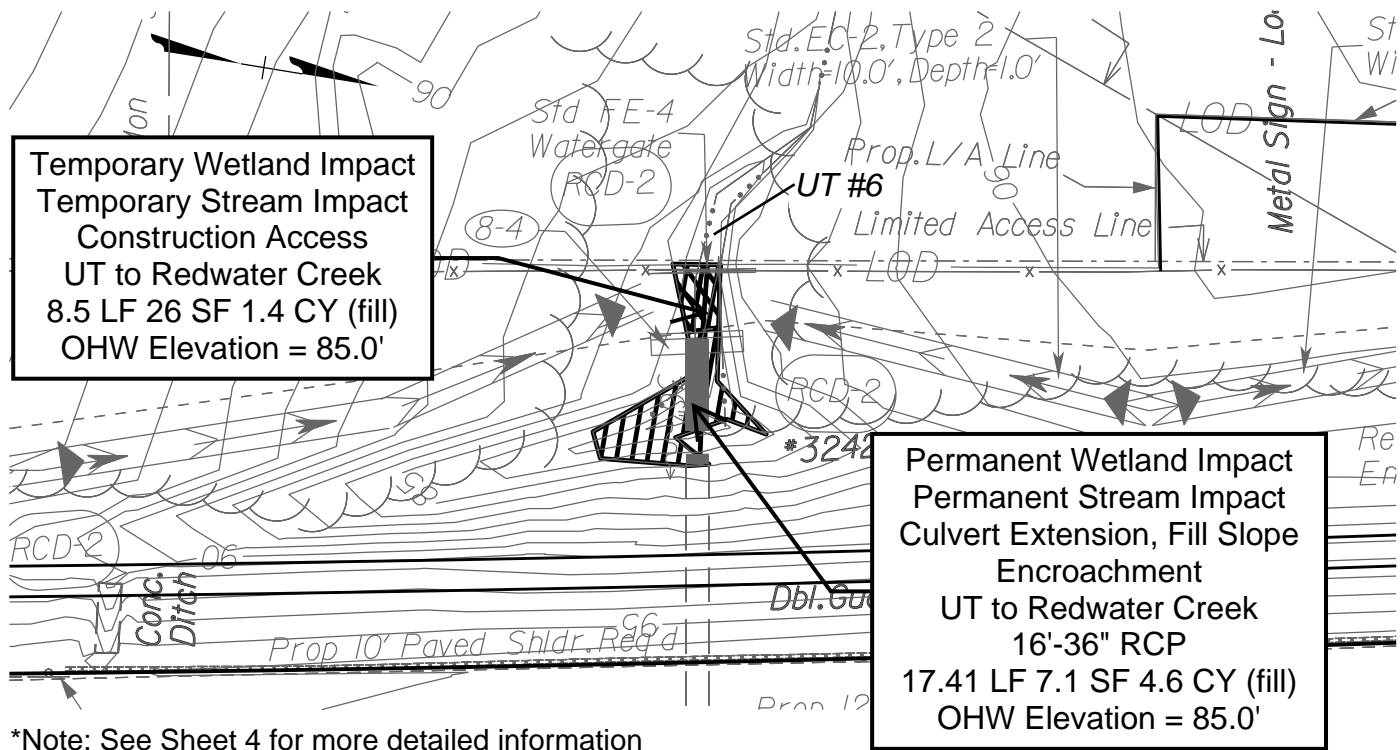
SCALE - 1" = 10'

PROPOSED I-95 Auxilliary Lanes
 IN: UT to Redwater Creek
 PROJECT NO: 0095-020-818
 APPLICATION BY: VIRGINIA DEPARTMENT OF TRANSPORTATION

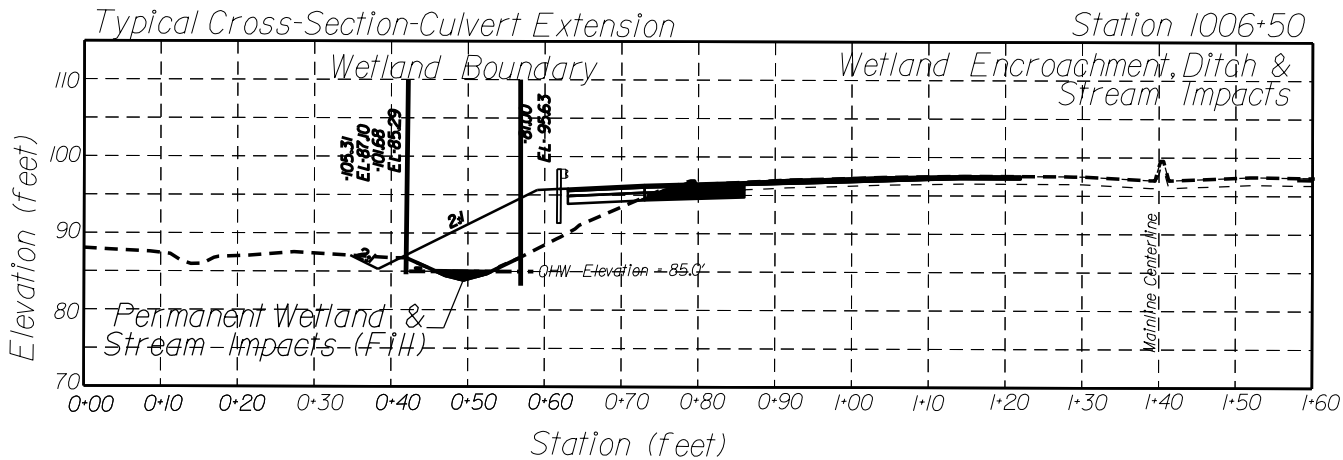
SHEET 17 OF 18 DATE: 2/22/202

WATER QUALITY PERMIT SKETCH

SHEET 4, DETAIL 4 - FILL SLOPE, CULVERT EXTENSION



*Note: See Sheet 4 for more detailed information



| Outfall (STR #) | Wetland (SF) | | Stream (LF) | |
|-----------------|--------------|-----------|-------------|-----------|
| | Permanent | Temporary | Permanent | Temporary |
| 3242 (8-4) | 153.72 | 43.96 | 17.41 | 8.55 |

Wetland Impact From
Fill Slope, Ditch, & Culvert
Extension at
Station 1006+00RT to
Station 1007+00RT

Cross-Section for Wetland
Encroachment, Culvert
Extension, & Ditch

SCALE - 1" = 10'

PROPOSED I-95 Auxilliary Lanes
IN: UT to Redwater Creek
PROJECT NO: 0095-020-818
APPLICATION BY: VIRGINIA
DEPARTMENT OF TRANSPORTATION

SHEET 18 OF 18 **DATE: 2/22/2021**

| Structure No. | 111466 Stream and Wetland Impacts | | | | | | | | | | Stream | | | | | | | | | |
|---------------|-----------------------------------|--------------|------------|------------|-----------|------------|--------------|------------|------|------------------------|----------------------|-------------------------|--|--|--|----------------------------------|--|--|--|--|
| | Wetlands | | | | | Permanent | | | | | Temporary | | | | | Additional WQ Permit Information | | | | |
| | Permanent | Temporary | SF | LF | CY | LF | SF | CY | UT# | Exist. Pipe Dimensions | Extension Dimensions | RipRap (COP) Dimensions | Construction Activity | | | | | | | |
| 4-1 | - | - | 1414.53 | 2.00 | 0.93 | 20.56 | 41.12 | 1.59 | UT#1 | 188'-48" RCP | 2'-48" RCP | | Culvert Extension, Construction Access | | | | | | | |
| South of 5-1 | 76.11 | - | 178.40 | - | - | - | - | - | | | | | Construction Access, Fill Slope Encroachment | | | | | | | |
| North of 5-1 | - | - | 178.40 | - | - | - | - | - | | | | | Construction Access | | | | | | | |
| 5-2 | 813.36 | 584.83 | 12.19 | 12.57 | 5.7 | - | - | - | UT#2 | 201'-48" RCP | 12'-48" RCP | | Culvert Extension, Construction Access, Ditching | | | | | | | |
| 5-3 | 472.64 | 256.66 | 38.61 | 104 | 7.7 | - | - | - | UT#2 | 201'-48" RCP | 7'-48" RCP | L=18.5 LF | Culvert Extension, Construction Access, Fill Slope Encroachment | | | | | | | |
| 6-2 | - | - | 494.55 | - | - | - | - | - | | | | | Construction Access | | | | | | | |
| Near 6-4 | - | - | - | 10 | 40 | 22 | 88 | 5 | UT#3 | | | | Sheet Piling Wall, ESC Structures, Fill Slope Encroachment | | | | | | | |
| Near 6-6 | - | - | 2,815.33 | - | - | 319.52 | 1,598 | 118 | | | | | Sheet Piling Wall, Construction Access | | | | | | | |
| 7-1 | 287.44 | 52.01 | 32.07 | 96 | 5.3 | 5.14 | 15 | 0.83 | UT#4 | 203'-48" RCP | 10'-48" RCP | L=24.0 LF | Culvert Extension, Fill Slope Encroachment | | | | | | | |
| 7-2 | 1593.72 | 844.83 | 26.96 | 12.57 | 12.6 | - | - | - | UT#4 | 203'-48" RCP | 21'-48" RCP | | Culvert Extension, Construction Access, Ditching, Fill Slope Encroachment | | | | | | | |
| 7-3 | 214.64 | 232.43 | 14.88 | 38 | 2.1 | 61.10 | 153 | 8.5 | UT#5 | 76'-15" RCP | 15'-15" RCP | L=5.0 LF | Culvert Extension, Construction Access, Fill Slope Encroachment | | | | | | | |
| 7-4 | 890.75 | 1,620.80 | - | - | - | - | - | - | UT#5 | 225'-60" RCP | 12'-60" RCP | L=34.3 LF | Culvert Extension, Construction Access, COP, Fill Slope Encroachment, Ditching | | | | | | | |
| 8-1 | 1010.74 | 597.02 | 19.62 | 12.57 | 9.10 | - | - | - | UT#5 | 225'-60" RCP | 20'-60" RCP | | Culvert Extension, Construction Access, Ditching, Fill Slope Encroachment | | | | | | | |
| 8-3 | 97.36 | - | - | - | - | - | - | - | UT#5 | 180'-36" RCP | 11'-36" RCP | L=8.3 LF | Culvert Extension, Construction Access, Fill Slope Encroachment | | | | | | | |
| 8-4 | 153.72 | 43.96 | 17.41 | 61 | 3.4 | 8.55 | 26 | 1.4 | UT#6 | 180'-36" RCP | 16'-36" RCP | | Culvert Extension, Construction Access, Fill Slope Encroachment | | | | | | | |
| 8-5 | 727.30 | 602.39 | 12.53 | 12.57 | 5.8 | 39.94 | 159.76 | 8.9 | UT#6 | 199'-60" RCP | 11'-60" RCP | | Culvert Extension, Construction Access, Ditching, Fill Slope Encroachment | | | | | | | |
| 8-6 | 393.48 | 158.4 | 58.08 | 174 | 9.7 | 30.29 | 90 | 5 | UT#6 | 199'-60" RCP | 17'-60" RCP | L=41.6 LF | Culvert Extension, Construction Access, Fill Slope Encroachment | | | | | | | |
| Totals | 6,731 | 9,896 | 244 | 576 | 65 | 507 | 2,171 | 149 | | | | | | | | | | | | |