

ORDER NO.: K58
CONTRACT ID. NO.: C000107937C01

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

CNSP (F) 1-9-06

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
BID PROPOSAL AND CONTRACT

ROUTE NUMBER: 286

FHWA NUMBER: STP-5B01(488)

PROJECT NUMBER: 0286-029-259 C501, D605, B628, B630, B631, B632

COUNTY: FAIRFAX

DISTRICT: NORTHERN VIRGINIA



DESCRIPTION: FAIRFAX COUNTY PARKWAY WIDENING SEGMENT II

FROM: 0.25 MI. SOUTH OF NOMES COURT

TO: 0.62 MI. NORTH OF RTE. 29

DATE BID SUBMITTED: 10:00 AM WEDNESDAY MARCH 27, 2024

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

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: 0286-029-259 C501, D605, B628, B630, B631, B632

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*)

By: _____
(Officer, Partner or Owner) (Seal)

(Surety Company)

By: _____
(Attorney-in-Fact**) (Seal)

(Principal*)

By: _____
(Officer, Partner or Owner) (Seal)

(Address)

By: _____
(Surety Company)

(Principal*)

By: _____
(Officer, Partner or Owner) (Seal)

(Attorney-in-Fact**) (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

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

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

PROJECT NUMBER: 0286-029-259 C501, D605, B628, B630, B631, B632
ROUTE NUMBER: 286
FHWA NUMBER: STP-5B01(488)

DESCRIPTION: FAIRFAX COUNTY PARKWAY WIDENING SEGMENT II
FROM: 0.25 MI. SOUTH OF NOMES COURT
TO: 0.62 MI. NORTH OF RTE. 29

DISTRICT: NORTHERN VIRGINIA COUNTY: FAIRFAX

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: JUNE 14, 2027

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

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Virginia Department of Transportation

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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	105SP20-0002 PERMANENT SWM FACILITY AS-BUILT DOCUMENTATION NS PERMANENT SWM FACILITY AS-BUILT DOCUMENTATION	LUMP SUM	LUMP SUM			
0020	ATTD	108SP20-0001 BASELINE PROGRESS SCHEDULE	LUMP SUM	LUMP SUM			
0030	ATTD	108SP20-0002 PROGRESS SCHEDULE UPDATES	36.000 EA				
0040	301	301SD20-0002 CLEARING AND GRUBBING	10.000 ACRE				
0050	ATTD	302SD20-0001 BEDDING MATL.AGGR.NO. 25 OR 26	30.000 TON				
0060	ATTD	302SD20-0002 BEDDING MATL. AGGR. NO. 57	44.000 TON				
0070	302	302SD20-0013 ENDWALL EW-12	14.000 EA				
0080	302	302SD20-0023 15" PIPE	172.000 LF				
0090	302	302SD20-0025 15" CONC. PIPE	843.000 LF				
0100	302	302SD20-0027 15" STORM SEWER PIPE	5,717.000 LF				
0110	302	302SD20-0030 18" CONC. PIPE	369.000 LF				
0120	302	302SD20-0032 18" STORM SEWER PIPE	1,118.000 LF				

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SECTION: 0001 REGULAR BID ITEMS

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Proposal Line Number	Spec No.	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
				Dollars	Cents	Dollars	Cents
0130	302	302SD20-0039 24" CONC. PIPE	909.000 LF	_____	_____	_____	_____
0140	302	302SD20-0041 24" STORM SEWER PIPE	365.000 LF	_____	_____	_____	_____
0150	302	302SD20-0051 30" STORM SEWER PIPE	934.000 LF	_____	_____	_____	_____
0160	302	302SD20-0059 36" CONC. PIPE	55.000 LF	_____	_____	_____	_____
0170	302	302SD20-0064 42" CONC. PIPE	78.000 LF	_____	_____	_____	_____
0180	302	302SD20-0066 42" STORM SEWER PIPE	57.000 LF	_____	_____	_____	_____
0190	302	302SD20-0143 45" X 29" ELLIPTICAL CONC. PIPE	58.000 LF	_____	_____	_____	_____
0200	302	302SD20-0198 15" END SECTION ES-1 OR 2	3.000 EA	_____	_____	_____	_____
0210	302	302SD20-0200 18" END SECTION ES-1 OR 2	3.000 EA	_____	_____	_____	_____
0220	302	302SD20-0204 24" END SECTION ES-1 OR 2	1.000 EA	_____	_____	_____	_____
0230	302	302SD20-0205 24" END SECTION ES-1	2.000 EA	_____	_____	_____	_____
0240	302	302SD20-0211 36" END SECTION ES-1	1.000 EA	_____	_____	_____	_____
0250	302	302SD20-0212 42" END SECTION ES-1 OR 2	1.000 EA	_____	_____	_____	_____
0260	302	302SD20-0213 42" END SECTION ES-1	2.000 EA	_____	_____	_____	_____

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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
0270	302	302SD20-0225 45" X 29" END SECTION ES-1A	1.000 EA	_____	_____	_____	_____
0280	302	302SD20-0246 DROP INLET DI-2B,L=14'	1.000 EA	_____	_____	_____	_____
0290	302	302SD20-0249 DROP INLET DI-2B,L=20'	1.000 EA	_____	_____	_____	_____
0300	302	302SD20-0250 DROP INLET DI-2BB,L=4'	1.000 EA	_____	_____	_____	_____
0310	302	302SD20-0255 DROP INLET DI-2BB,L=14'	1.000 EA	_____	_____	_____	_____
0320	302	302SD20-0275 DROP INLET DI-2D	1.000 EA	_____	_____	_____	_____
0330	302	302SD20-0276 DROP INLET DI-2DD	1.000 EA	_____	_____	_____	_____
0340	302	302SD20-0277 DROP INLET DI-2E,L=6	4.000 EA	_____	_____	_____	_____
0350	302	302SD20-0278 DROP INLET DI-2E,L=8'	4.000 EA	_____	_____	_____	_____
0360	302	302SD20-0279 DROP INLET DI-2E,L=10'	2.000 EA	_____	_____	_____	_____
0370	302	302SD20-0281 DROP INLET DI-2E,L=14'	3.000 EA	_____	_____	_____	_____
0380	302	302SD20-0282 DROP INLET DI-2E,L=16'	3.000 EA	_____	_____	_____	_____
0390	302	302SD20-0285 DROP INLET DI-2EE,L=6'	1.000 EA	_____	_____	_____	_____
0400	302	302SD20-0288 DROP INLET DI-2EE,L=12'	1.000 EA	_____	_____	_____	_____

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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
0410	302	302SD20-0309 DROP INLET DI-3A	1.000 EA	_____	_____	_____	_____
0420	302	302SD20-0311 DROP INLET DI-3B,L=4'	1.000 EA	_____	_____	_____	_____
0430	302	302SD20-0312 DROP INLET DI-3B,L=6'	2.000 EA	_____	_____	_____	_____
0440	302	302SD20-0313 DROP INLET DI-3B,L=8'	1.000 EA	_____	_____	_____	_____
0450	302	302SD20-0321 DROP INLET DI-3BB,L=6'	1.000 EA	_____	_____	_____	_____
0460	302	302SD20-0322 DROP INLET DI-3BB,L=8'	2.000 EA	_____	_____	_____	_____
0470	302	302SD20-0392 DROP INLET DI-4BB,L=8'	1.000 EA	_____	_____	_____	_____
0480	302	302SD20-0446 DROP INLET DI-5	18.000 EA	_____	_____	_____	_____
0490	302	302SD20-0447 DROP INLET DI-7	4.000 EA	_____	_____	_____	_____
0500	302	302SD20-0453 DROP INLET DI-10H TY.I,L=4	1.000 EA	_____	_____	_____	_____
0510	302	302SD20-0454 DROP INLET DI-10H TY.I,L=6	4.000 EA	_____	_____	_____	_____
0520	302	302SD20-0455 DROP INLET DI-10H TY. I,L=8'	1.000 EA	_____	_____	_____	_____
0530	302	302SD20-0456 DROP INLET DI-10H TY. I,L=10'	3.000 EA	_____	_____	_____	_____
0540	302	302SD20-0458 DROP INLET DI-10H TY. I,L=14'	3.000 EA	_____	_____	_____	_____
0550	302	302SD20-0460 DROP INLET DI-10H TY. I,L=18'	5.000 EA	_____	_____	_____	_____

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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
0560	302	302SD20-0471 DROP INLET DI-10I TY. I,L=6'	1.000 EA	_____	_____	_____	_____
0570	302	302SD20-0500 DROP INLET DI-10K TY. II,L=6'	1.000 EA	_____	_____	_____	_____
0580	302	302SD20-0501 DROP INLET DI-10K TY. II,L=8'	1.000 EA	_____	_____	_____	_____
0590	302	302SD20-0502 DROP INLET DI-10K TY. II,L=10'	2.000 EA	_____	_____	_____	_____
0600	302	302SD20-0504 DROP INLET DI-10K TY. II,L=14'	1.000 EA	_____	_____	_____	_____
0610	302	302SD20-0505 DROP INLET DI-10K TY. II,L=16'	2.000 EA	_____	_____	_____	_____
0620	302	302SD20-0643 DROP INLET DI-12B,L=4'	1.000 EA	_____	_____	_____	_____
0630	302	302SD20-0655 DROP INLET DI-13 TY.I	1.000 EA	_____	_____	_____	_____
0640	302	302SD20-0656 DROP INLET DI-13 TY.II	2.000 EA	_____	_____	_____	_____
0650	302	302SD20-0661 MANHOLE MH-2	37.000 LF	_____	_____	_____	_____
0660	302	302SD20-0662 MANHOLE MH-1 OR 2	65.000 LF	_____	_____	_____	_____
0670	302	302SD20-0663 FRAME & COVER MH-1	15.000 EA	_____	_____	_____	_____
0680	302	302SD20-0665 DI-PRECAST TOP VARIOUS TYPES CONST	28.000 EA	_____	_____	_____	_____

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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
0690	302	302SD20-0673 STORMWATER MAN.DRAIN.STR.SWM-1	36.000 LF	_____	_____	_____	_____
0700	ATTD, 302	302SX20-0013 PIPE 15" JACKED & BORED	164.000 LF	_____	_____	_____	_____
0710	ATTD, 302	302SX20-0013 PIPE 18" JACKED & BORED	87.000 LF	_____	_____	_____	_____
0720	ATTD	302SX20-0022 DRAINAGE GATE VALVE WITH EXTENDED STEM	2.000 EA	_____	_____	_____	_____
0730	ATTD	302SX20-0022 DRAINAGE POND AERATOR	3.000 EA	_____	_____	_____	_____
0740	303	303SD20-0001 REGULAR EXCAVATION	50,704.000 CY	_____	_____	_____	_____
0750	303	303SD20-0007 BORROW EXCAVATION	10,034.000 CY	_____	_____	_____	_____
0760	303	303SD20-0018 SLOPE DRAIN	3.000 EA	_____	_____	_____	_____
0770	303	303SD20-0022 CHECK DAM ROCK TY. I	112.000 EA	_____	_____	_____	_____
0780	303	303SD20-0023 CHECK DAM ROCK TY. II	648.000 EA	_____	_____	_____	_____
0790	303	303SD20-0028 DEWATERING BASIN EC-8	3.000 EA	_____	_____	_____	_____
0800	303	303SD20-0029 SILTATION CONTROL EXCAVATION	67,055.000 CY	_____	_____	_____	_____
0810	303	303SD20-0030 INLET PROTECTION TYPE A	164.000 EA	_____	_____	_____	_____
0820	303	303SD20-0031 INLET PROTECTION TYPE B	132.000 EA	_____	_____	_____	_____

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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
0830	303	303SD20-0032 GEOTEXTILE FABRIC	187.000 SY	_____	_____	_____	_____
0840	303	303SD20-0033 TEMP. SILT FENCE TYPE B	896.000 LF	_____	_____	_____	_____
0850	303	303SD20-0034 TEMP. SILT FENCE TYPE A	100,113.000 LF	_____	_____	_____	_____
0860	303	303SD20-0035 TEMP. SEDIMENT BASIN EXCAVATION	1,181.000 CY	_____	_____	_____	_____
0870	303	303SD20-0036 STORM WATER MAN. BASIN EXCAV.	29,923.000 CY	_____	_____	_____	_____
0880	ATTD	303SX20-0012 UTILITY TEST PIT UNPAVED	100.000 EA	_____	_____	_____	_____
0890	ATTD	303SX20-0013 UTILITY TEST PIT ASPHALT CONCRETE	100.000 EA	_____	_____	_____	_____
0900	305	305SD20-0005 SELECT MATL. TY. I MIN. CBR-30	5,619.000 TON	_____	_____	_____	_____
0910	305	305SD20-0009 GEOTEXTILE SUBGRADE STAB.	4,236.000 SY	_____	_____	_____	_____
0920	307	307SD20-0001 HYDRAULIC CEMENT	2,900.000 TON	_____	_____	_____	_____
0930	307	307SD20-0010 MANIPULATION 8"	80,400.000 SY	_____	_____	_____	_____
0940	ATTD	307SX20-0001 CEM. STAB. AGGR. BASE. MATL. TY. I NO. 21A	29,110.000 TON	_____	_____	_____	_____
0950	307	307SX20-0003 MANIPULATION UNSUITABLE	4,458.000 SY	_____	_____	_____	_____

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Proposal Line Number	Spec No.	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
				Dollars	Cents	Dollars	Cents
0960	308	308SD20-0012 AGGR. BASE MATL. TY. I NO. 21B	8,160.000 TON	_____	_____	_____	_____
0970	ATTD	308SX20-0003 CRUSHER RUN AGGR. NO. 25 OR 26	20.000 TON	_____	_____	_____	_____
0980	312	312SD20-0005 COVER MATL. AGGR. NO. 78	2,940.000 TON	_____	_____	_____	_____
0990	313	313SD20-0001 ASPH-STAB. OPEN-GRADED MATERIAL	9,900.000 TON	_____	_____	_____	_____
1000	315	315SD20-0004 ASPHALT CONCRETE TY. IM-19.0A CONST	920.000 TON	_____	_____	_____	_____
1010	315	315SD20-0005 ASPHALT CONCRETE TY. IM-19.0D CONST	31,410.000 TON	_____	_____	_____	_____
1020	315	315SD20-0007 ASPHALT CONCRETE TY. SM-9.5A CONST	630.000 TON	_____	_____	_____	_____
1030	315	315SD20-0008 ASPHALT CONCRETE TY. SM-9.5D CONST	720.000 TON	_____	_____	_____	_____
1040	315	315SD20-0010 ASPHALT CONCRETE TY. BM-25.0A CONST	77,740.000 TON	_____	_____	_____	_____
1050	315	315SD20-0018 ASPH.CONC.CURB BACKUP MATL. CONST	10.000 TON	_____	_____	_____	_____
1060	ATTD	315SX20-0004 PAVEMENT HIGH FRICTION EPOXY AGGR. SURF. TREATMENT	7,383.000 SY	_____	_____	_____	_____
1070	315	315SX20-0011 SAW-CUT ASPH CONC NS SAW-CUT ASPH CONC	51,996.000 LF	_____	_____	_____	_____

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				Dollars	Cents	Dollars	Cents
1080	316	316SD20-0035 CONC. CL. A4 BRIDGE APPR. SLAB CONST.	211.200 CY	_____	_____	_____	_____
1090	316	316SD20-0035 CONC. CL. A4 BRIDGE APPR. SLAB CONST.	154.300 CY	_____	_____	_____	_____
1100	316	316SD20-0036 REINF. STEEL BRIDGE APPR. SLAB CONST.	17,000.000 LB	_____	_____	_____	_____
1110	317, 315	317SD20-0002 STONE MATRIX ASPH. SMA- 9.5 64E-22	23,040.000 TON	_____	_____	_____	_____
1120	401	401SD20-0001 STRUCTURE EXCAVATION CONST.	571.000 CY	_____	_____	_____	_____
1130	401	401SD20-0002 SELECT BACKFILL ABUTMENT ZONE	478.000 TON	_____	_____	_____	_____
1140	403	403SD20-0007 STEEL PILES 14"	618.000 LF	_____	_____	_____	_____
1150	403	403SD20-0037 PILE POINT FOR 14" STEEL PILE	20.000 EA	_____	_____	_____	_____
1160	403	403SD20-0039 DRIVING TEST FOR 14" STEEL PILE	37.000 LF	_____	_____	_____	_____
1170	ATTD	403SX20-0001 DYNAMIC PILE TEST END BEARING PILES	1.000 EA	_____	_____	_____	_____
1180	404	404SD20-0005 CONC. CL. A4 MOD. LOW SHRINK., SPR. STRUCT. CONST.	432.900 CY	_____	_____	_____	_____
1190	404	404SD20-0009 BRIDGE DECK GROOVING CONST.	504.000 SY	_____	_____	_____	_____

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				Dollars	Cents	Dollars	Cents
1200	404	404SD20-0009 BRIDGE DECK GROOVING CONST.	985.000 SY	_____	_____	_____	_____
1210	404	404SD20-0010 COVER DEPTH SURVEY CONST.	1,489.000 SY	_____	_____	_____	_____
1220	404	404SD20-0011 CONCRETE CLASS A3, SUBSTRUCT. CONST.	137.100 CY	_____	_____	_____	_____
1230	406	406SD20-0003 CR REINF. STEEL CL. I SPR. STRUCT. CONST.	130,430.000 LB	_____	_____	_____	_____
1240	406	406SD20-0006 REINFORCING STEEL SUBSTRUCT. CONST.	5,940.000 LB	_____	_____	_____	_____
1250	406	406SD20-0008 CR REINF. STEEL CL. I SUBSTRUCT. CONST.	24,112.000 LB	_____	_____	_____	_____
1260	407	407SD20-0006 STR. STEEL PLATE GIRDER ASTM A709 GRADE50	LUMP SUM	LUMP SUM	_____	_____	_____
1270	410	410SD20-0006 CONCRETE PARAPET 42" CONST.	410.000 LF	_____	_____	_____	_____
1280	410	410SD20-0020 BR. MED. BARRIER TY. MC-J	452.000 LF	_____	_____	_____	_____
1290	ATTD	410SX20-0006 BRIDGE SUPERSTRUCTURE RESET BEARING SOLE PLATE	10.000 EA	_____	_____	_____	_____
1300	ATTD	410SX20-0011 PIER PROTECTION SYSTEM 54", CONST	160.000 LF	_____	_____	_____	_____
1310	412	412SD20-0026 PARAPET CLOSURE TYPE A	4.000 EA	_____	_____	_____	_____

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Cat Alt Set ID: Cat Alt Mbr ID:

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				Dollars	Cents	Dollars	Cents
1320	412	412SD20-0045 BACK WALL RECONSTRUCTION	430.000 LF	_____	_____	_____	_____
1330	412	412SD20-0048 JACKING AND BLOCKING BEAM	32.000 EA	_____	_____	_____	_____
1340	412	412SD20-0062 RECONSTRUCT BRIDGE SEAT TYPE A	8.000 EA	_____	_____	_____	_____
1350	413	413SX20-0003 ENV.& WORKER PROTECT. B628	LUMP SUM	LUMP SUM	_____	_____	_____
1360	413	413SX20-0003 ENV.& WORKER PROTECT. B630	LUMP SUM	LUMP SUM	_____	_____	_____
1370	413	413SX20-0003 ENV.& WORKER PROTECT. B631	LUMP SUM	LUMP SUM	_____	_____	_____
1380	413	413SX20-0003 ENV.& WORKER PROTECT. B632	LUMP SUM	LUMP SUM	_____	_____	_____
1390	411	413SX20-0004 MATERIAL DISPOSAL B628	LUMP SUM	LUMP SUM	_____	_____	_____
1400	413	413SX20-0004 MATERIAL DISPOSAL B630	LUMP SUM	LUMP SUM	_____	_____	_____
1410	413	413SX20-0004 MATERIAL DISPOSAL B631	LUMP SUM	LUMP SUM	_____	_____	_____
1420	413	413SX20-0004 MATERIAL DISPOSAL B632	LUMP SUM	LUMP SUM	_____	_____	_____
1430	413	413SX20-0005 REM. PORT.OF EX.STR. B628	LUMP SUM	LUMP SUM	_____	_____	_____
1440	413	413SX20-0005 REM. PORT.OF EX.STR. B630	LUMP SUM	LUMP SUM	_____	_____	_____

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Proposal Line Number	Spec No.	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
				Dollars	Cents	Dollars	Cents
1450	413	413SX20-0005 REM. PORT.OF EX.STR. B631	LUMP SUM	LUMP SUM			
1460	413	413SX20-0005 REM. PORT.OF EX.STR. B632	LUMP SUM	LUMP SUM			
1470	414	414SD20-0001 EROSION CTRL. STONE CL. A1, EC-1	376.000 TON				
1480	414	414SD20-0003 EROSION CTRL. STONE CL. I, EC-1	292.000 TON				
1490	414	414SD20-0008 DRY RIPRAP CL. AI	134.300 TON				
1500	ATTD	419SX20-0004 COMMUNICATION LINES CONDUIT SYSTEM B632	LUMP SUM	LUMP SUM			
1510	420	420SD20-0004 ADHESIVE BASED JT. SEALER CL. I, 2-1/2" CONST.	284.000 LF				
1520	426	426SD20-0001 REPLACE BEARING	22.000 EA				
1530	430	430SX20-0001 NBIS ACCESS, UNDER BRIDGE B628	1.000 DAY				
1540	430	430SX20-0001 NBIS ACCESS, UNDER BRIDGE B630	1.000 DAY				
1550	430	430SX20-0001 NBIS ACCESS, UNDER BRIDGE B631	1.000 DAY				
1560	430	430SX20-0001 NBIS ACCESS, UNDER BRIDGE B632	1.000 DAY				
1570	501	501SD20-0003 UNDERDRAIN UD-3	27,893.000 LF				

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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
1580	501	501SD20-0004 UNDERDRAIN UD-4	18,325.000 LF	_____	_____	_____	_____
1590	501	501SD20-0007 CROSSDRAIN CD-2	13.000 LF	_____	_____	_____	_____
1600	501	501SD20-0009 OUTLET PIPE	674.000 LF	_____	_____	_____	_____
1610	502	502SD20-0020 CURB, ASPHALT MC-3B	4,070.000 LF	_____	_____	_____	_____
1620	502	502SD20-0024 COMB. CURB & GUTTER, STD. CG-7	5,328.000 LF	_____	_____	_____	_____
1630	502	502SD20-0025 COMB. CURB & GUTTER, RAD. CG-7	44.000 LF	_____	_____	_____	_____
1640	502	502SD20-0029 ENTRANCE GUTTER CG-9D	443.000 SY	_____	_____	_____	_____
1650	502	502SD20-0036 MEDIAN BARRIER MB-7D	4,679.000 LF	_____	_____	_____	_____
1660	502	502SD20-0037 MEDIAN BARRIER MB-7E	338.000 LF	_____	_____	_____	_____
1670	502	502SD20-0038 MEDIAN BARRIER MB-7F	1,429.000 LF	_____	_____	_____	_____
1680	502	502SD20-0044 MEDIAN BARRIER MB-8A TYPE I	2,520.000 LF	_____	_____	_____	_____
1690	502	502SD20-0056 MEDIAN STRIP MS-1A	223.000 SY	_____	_____	_____	_____
1700	502	502SD20-0058 MEDIAN STRIP MS-2	485.000 LF	_____	_____	_____	_____
1710	503	503SD20-0002 R/W MONUMENT RM-2	4.000 EA	_____	_____	_____	_____

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				Dollars	Cents	Dollars	Cents
1720	302, 504	504SD20-0001 CONCRETE CLASS A3 MISC.	44.000 CY	_____	_____	_____	_____
1730	505	505SD20-0011 GUARDRAIL GR-MGS1	17,583.000 LF	_____	_____	_____	_____
1740	505	505SD20-0017 GUARDRAIL TERMINAL GR-MGS2	18.000 EA	_____	_____	_____	_____
1750	505	505SD20-0018 GUARDRAIL END ANCHORAGE GR-MGS3	18.000 EA	_____	_____	_____	_____
1760	505	505SD20-0019 GUARDRAIL HEIGHT TRANSITION GR-MGS4	13.000 EA	_____	_____	_____	_____
1770	505	505SD20-0051 FIXED OBJECT ATTACH. GR-FOA-4 TY. II	3.000 EA	_____	_____	_____	_____
1780	505	505SD20-0053 FIXED OBJECT ATTACH. GR-FOA-2 TY. I	10.000 EA	_____	_____	_____	_____
1790	505	505SD20-0054 FIXED OBJECT ATTACH. GR-FOA-2 TY. II	7.000 EA	_____	_____	_____	_____
1800	505	505SD20-0055 FIXED OBJECT ATTACH. GR-FOA-5	1.000 EA	_____	_____	_____	_____
1810	505	505SD20-0067 BULL NOSE BARRIER	1.000 EA	_____	_____	_____	_____
1820	505	505SD20-0073 REMOVE EXISTING GUARDRAIL	16,187.000 LF	_____	_____	_____	_____
1830	ATTD, 505	505SX20-0001 HAND DIG GUARDRAIL POST .	50.000 EA	_____	_____	_____	_____

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				Dollars	Cents	Dollars	Cents
1840	ATTD, 505	505SX20-0057 GUARDRAIL HIGH TENSION CABLE BARRIER	28,026.000 LF	_____	_____	_____	_____
1850	ATTD, 505	505SX20-0058 GUARDRAIL HIGH TENSION CABLE BARRIER ANCHOR	18.000 EA	_____	_____	_____	_____
1860	506	506SD20-0002 RETAINING WALL RW-3	141.000 CY	_____	_____	_____	_____
1870	506	506SD20-0007 RETAINING WALL EXCAVATION	205.000 CY	_____	_____	_____	_____
1880	507	507SD20-0006 FENCE FE-CL VINYL COATED	3,247.000 LF	_____	_____	_____	_____
1890	507	507SD20-0008 LINE BRACE UNIT FE-CL VINYL COATED	5.000 EA	_____	_____	_____	_____
1900	507	507SD20-0010 CORNER BRACE UNIT FE-CL VINYL COATED	21.000 EA	_____	_____	_____	_____
1910	507	507SD20-0013 GATE FE-CL 12'	4.000 EA	_____	_____	_____	_____
1920	507	507SD20-0027 HIGH VISIBILITY FENCE, 4 FEET	22,900.000 LF	_____	_____	_____	_____
1930	508	508SD20-0004 DEMO. OF PAVEMENT FLEXIBLE	32,427.000 SY	_____	_____	_____	_____
1940	509	509SD20-0001 FLOWABLE BACKFILL	21.000 CY	_____	_____	_____	_____
1950	ATTD, 510	510SX20-0016 REMOVE EXIST. FENCE .	1,179.000 LF	_____	_____	_____	_____
1960	ATTD, 510	510SX20-0026 REMOVE EXIST. DROP INLET .	44.000 EA	_____	_____	_____	_____

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				Dollars	Cents	Dollars	Cents
1970	ATTD, 510	510SX20-0026 REMOVE EXIST. DROP INLET SWM RISER	3.000 EA	_____	_____	_____	_____
1980	ATTD, 510	510SX20-0027 REMOVE EXIST. MANHOLE .	3.000 EA	_____	_____	_____	_____
1990	ATTD, 510	510SX20-0028 REMOVE EXIST. ENDWALL .	21.000 EA	_____	_____	_____	_____
2000	ATTD, 510	510SX20-0031 MODIFY EXIST. DROP INLET	34.000 EA	_____	_____	_____	_____
2010	ATTD, 510	510SX20-0031 MODIFY EXIST. MANHOLE	1.000 EA	_____	_____	_____	_____
2020	ATTD, 510	510SX20-0031 MODIFY EXIST. RISER	2.000 EA	_____	_____	_____	_____
2030	ATTD, 510	510SX20-0033 ADJUST EXIST. DROP INLET .	22.000 EA	_____	_____	_____	_____
2040	ATTD, 510	510SX20-0034 ADJUST EXIST. MANHOLE .	4.000 EA	_____	_____	_____	_____
2050	ATTD, 510	510SX20-0039 REMOVE EXIST. PIPE	5,096.000 LF	_____	_____	_____	_____
2060	ATTD	510SX20-0039 REMOVE EXIST. TCB-1 MEDIAN BARRIER	6,732.000 LF	_____	_____	_____	_____
2070	ATTD	510SX20-0040 REMOVE EXIST. DMS CONTROL CABINET	1.000 EA	_____	_____	_____	_____
2080	ATTD	510SX20-0040 REMOVE EXIST. DYNAMIC MESSAGE SIGN	1.000 EA	_____	_____	_____	_____
2090	ATTD	510SX20-0040 REMOVE EXIST. INTERIM BROADBAND COMMUNICATION SERVICE	1.000 EA	_____	_____	_____	_____

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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
2100	511	511SD20-0001 ALLAYING DUST	3,168.000 HR	_____	_____	_____	_____
2110	512	512SD20-0003 TRAFFIC BARRIER SERVICE MB-11A	1,652.000 LF	_____	_____	_____	_____
2120	512	512SD20-0007 IMPACT ATTEN.SER. TY. 1 TL- 3, >=40 MPH	33.000 EA	_____	_____	_____	_____
2130	512	512SD20-0013 TYPE 3 BARRICADE 8'	16.000 EA	_____	_____	_____	_____
2140	512	512SD20-0014 TEMPORARY SIGN	1,935.000 SF	_____	_____	_____	_____
2150	512	512SD20-0023 TRUCK MOUNTED ATTENUATOR	31,031.000 HR	_____	_____	_____	_____
2160	512	512SD20-0024 GROUP 2 CHANNELIZING DEVICES	228,800.000 DAY	_____	_____	_____	_____
2170	512	512SD20-0025 PORT.CHANGEABLE MESS. SIGN	75,911.000 HR	_____	_____	_____	_____
2180	512	512SD20-0026 ELECTRONIC ARROW BOARD	31,031.000 HR	_____	_____	_____	_____
2190	512	512SD20-0027 FLAGGER SERVICE	1,980.000 HR	_____	_____	_____	_____
2200	512	512SD20-0029 WARNING LIGHT TY. B	11,264.000 DAY	_____	_____	_____	_____
2210	512	512SD20-0031 TRAFFIC BARRIER SER. CONC. MB-7D PC	94,880.000 LF	_____	_____	_____	_____
2220	512	512SD20-0042 ERADICATE LINEAR PVMT MRKG	239,900.000 LF	_____	_____	_____	_____

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Cat Alt Set ID: Cat Alt Mbr ID:

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				Dollars	Cents	Dollars	Cents
2230	512	512SD20-0043 ERADICATE NONLINEAR PVMT MRKG	309.000 SF	_____	_____	_____	_____
2240	512	512SD20-0044 TEMP. PAVE. MARKER 1 WAY	37,200.000 EA	_____	_____	_____	_____
2250	512	512SD20-0062 TEMP. PVMT MRKG TY. D, CL. III, 6"	255,270.000 LF	_____	_____	_____	_____
2260	512	512SD20-0063 TEMP. PVMT MRKG TY. D, CL. III, 8"	10,500.000 LF	_____	_____	_____	_____
2270	512	512SD20-0069 IMPACT ATTENUATOR IA-1	1.000 EA	_____	_____	_____	_____
2280	513	513SD20-0001 MOBILIZATION	LUMP SUM	LUMP SUM	_____	_____	_____
2290	ATTD	514SX20-0001 FIELD OFFICE TYPE 1 MODIFIED	36.000 MO	_____	_____	_____	_____
2300	515	515SD20-0004 FLEXIBLE PAVE.PLANING 0"- 2"	190,800.000 SY	_____	_____	_____	_____
2310	515	515SD20-0006 FLEX PAVEMENT PLANING ABOVE 4"	2,790.000 SY	_____	_____	_____	_____
2320	517	517SD20-0001 CONSTRUCTION SURVEYING CONSTR.	LUMP SUM	LUMP SUM	_____	_____	_____
2330	ATTD	519SX20-0001 SOUND BARRIER WALL ABSORPTIVE	111,620.000 SF	_____	_____	_____	_____
2340	ATTD	522SX20-0004 ASBESTOS REMOVAL MANAGEMENT OF NATURALLY-OCCURRING ASBESTOS SOIL	LUMP SUM	LUMP SUM	_____	_____	_____

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				Dollars	Cents	Dollars	Cents
2350	ATTD, 414	523SP20-0002 STORM WATER MANAGEMENT LOW PERMEABILITY POND LINER	16,070.000 SY	_____	_____	_____	_____
2360	602	602SD20-0002 TOPSOIL CLASS A	7,163.000 CY	_____	_____	_____	_____
2370	ATTD, 602	602SX20-0006 TOPSOIL , LINER COVER MATERIAL (CLASS A, 12 INCH DEPTH)	5,357.000 CY	_____	_____	_____	_____
2380	603	603SD20-0002 TEMPORARY SEED	10,000.000 LB	_____	_____	_____	_____
2390	603	603SD20-0003 REGULAR SEED	8,324.000 LB	_____	_____	_____	_____
2400	603	603SD20-0004 OVERSEEDING	6,660.000 LB	_____	_____	_____	_____
2410	603	603SD20-0007 HYDRAULIC EROSION CONTROL PRODUCT TYPE 1	67,820.000 SY	_____	_____	_____	_____
2420	603	603SD20-0008 HYDRAULIC EROSION CONTROL PRODUCT TYPE 2	20,691.000 SY	_____	_____	_____	_____
2430	603	603SD20-0009 HYDRAULIC EROSION CONTROL PRODUCT TYPE 3	5,627.000 SY	_____	_____	_____	_____
2440	603	603SD20-0010 HYDRAULIC EROSION CONTROL PRODUCT TYPE 4	34,788.000 SY	_____	_____	_____	_____
2450	603	603SD20-0014 FERTILIZER NITROGEN - N	2,545.000 LB	_____	_____	_____	_____
2460	603	603SD20-0015 FERTILIZER PHOSPHOROUS - P	3,496.000 LB	_____	_____	_____	_____

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				Dollars	Cents	Dollars	Cents
2470	603	603SD20-0016 FERTILIZER POTASSIUM - K	1,749.000 LB	_____	_____	_____	_____
2480	603	603SD20-0017 LIME	120.000 TON	_____	_____	_____	_____
2490	605	605SD20-0002 MULCHING	111.000 CY	_____	_____	_____	_____
2500	605	605SD20-0003 REMULCHING	333.000 CY	_____	_____	_____	_____
2510	ATTD	605SX20-0010 LANDSCAPE ASCLEPIAS INCARNATA (#1)	1,250.000 EA	_____	_____	_____	_____
2520	ATTD	605SX20-0010 LANDSCAPE CAREX VULPINOIDEA (#1)	914.000 EA	_____	_____	_____	_____
2530	ATTD	605SX20-0010 LANDSCAPE EUPATORIUM COELESTINUM (#1)	1,250.000 EA	_____	_____	_____	_____
2540	ATTD	605SX20-0010 LANDSCAPE EUPATORIUM PERFOLIATUM (#1)	1,875.000 EA	_____	_____	_____	_____
2550	ATTD	605SX20-0010 LANDSCAPE EUTROCHIUM FISTULOSUM (#1)	1,250.000 EA	_____	_____	_____	_____
2560	ATTD	605SX20-0010 LANDSCAPE JUNCUS EFFUSUS (#1)	625.000 EA	_____	_____	_____	_____
2570	ATTD	605SX20-0010 LANDSCAPE LIATRIS SPICATA (#1)	1,999.000 EA	_____	_____	_____	_____
2580	ATTD	605SX20-0010 LANDSCAPE LOBELIA CARDINALIS (#1)	3,125.000 EA	_____	_____	_____	_____

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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
2590	ATTD	605SX20-0010 LANDSCAPE PANICUM VRIGATUM (#1)	1,999.000 EA	_____	_____	_____	_____
2600	ATTD	605SX20-0010 LANDSCAPE PONTEDERIA CORDATA (#1)	914.000 EA	_____	_____	_____	_____
2610	ATTD	605SX20-0010 LANDSCAPE RUDBECKIA FULGIDA (#1)	2,666.000 EA	_____	_____	_____	_____
2620	ATTD	605SX20-0010 LANDSCAPE SAGITTARIA LATIFOLIA (#1)	1,250.000 EA	_____	_____	_____	_____
2630	ATTD	605SX20-0010 LANDSCAPE SCIRPUS ATROVIRENS (#1)	914.000 EA	_____	_____	_____	_____
2640	ATTD	605SX20-0010 LANDSCAPE SYMPHYOTRICHUM LATERIFLORUM (#1)	625.000 EA	_____	_____	_____	_____
2650	ATTD	605SX20-0010 LANDSCAPE VERNONIA NOVEBORACENSIS (#2)	1,250.000 EA	_____	_____	_____	_____
2660	ATTD	605SX20-0013 LANDSCAPE INVASIVE SPECIES MANAGEMENT	LUMP SUM	LUMP SUM	_____	_____	_____
2670	ATTD	605SX20-0013 LANDSCAPE PERMANENT VEGETATIVE COVER	LUMP SUM	LUMP SUM	_____	_____	_____
2680	ATTD	605SX20-0016 LANDSCAPE WATERING/WEED CONTROL	10.000 UNIT	_____	_____	_____	_____
2690	ATTD	605SX20-0019 TREE ACER RUBRUM (2")	6.000 EA	_____	_____	_____	_____
2700	ATTD	605SX20-0019 TREE ACER RUBRUM (5 GAL)	66.000 EA	_____	_____	_____	_____

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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
2710	ATTD	605SX20-0019 TREE BETULA NIGRA (2")	4.000 EA	_____	_____	_____	_____
2720	ATTD	605SX20-0019 TREE BETULA NIGRA (5 GAL)	46.000 EA	_____	_____	_____	_____
2730	ATTD	605SX20-0019 TREE CELTIS OCCIDENTALIS (2")	3.000 EA	_____	_____	_____	_____
2740	ATTD	605SX20-0019 TREE LIQUIDAMBAR STYRACIFLUA (2")	4.000 EA	_____	_____	_____	_____
2750	ATTD	605SX20-0019 TREE LIQUIDAMBAR STYRACIFLUA (5 GAL)	41.000 EA	_____	_____	_____	_____
2760	ATTD	605SX20-0019 TREE LIRIODENDRON TULIPIFERA (2")	4.000 EA	_____	_____	_____	_____
2770	ATTD	605SX20-0019 TREE NYSSA SYLVATICA (2")	4.000 EA	_____	_____	_____	_____
2780	ATTD	605SX20-0019 TREE PINUS LOBLOLLY (3 GAL)	109.000 EA	_____	_____	_____	_____
2790	ATTD	605SX20-0019 TREE PINUS STROBUS (3 GAL)	85.000 EA	_____	_____	_____	_____
2800	ATTD	605SX20-0019 TREE PINUS VIRGINIANA (3 GAL)	28.000 EA	_____	_____	_____	_____
2810	ATTD	605SX20-0019 TREE PLATANUS OCCIDENTALIS (2")	4.000 EA	_____	_____	_____	_____
2820	ATTD	605SX20-0019 TREE PLATANUS OCCIDENTALIS (5 GAL)	129.000 EA	_____	_____	_____	_____

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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
2830	ATTD	605SX20-0019 TREE QUERCUS ALBA (2")	4.000 EA	_____	_____	_____	_____
2840	ATTD	605SX20-0019 TREE QUERCUS ALBA (5 GAL)	62.000 EA	_____	_____	_____	_____
2850	ATTD	605SX20-0019 TREE QUERCUS BICOLOR (2")	3.000 EA	_____	_____	_____	_____
2860	ATTD	605SX20-0019 TREE QUERCUS BICOLOR (5 GAL)	34.000 EA	_____	_____	_____	_____
2870	ATTD	605SX20-0019 TREE QUERCUS RUBRA (2")	3.000 EA	_____	_____	_____	_____
2880	ATTD	605SX20-0019 TREE QUERCUS RUBRA (5 GAL)	70.000 EA	_____	_____	_____	_____
2890	606	606SD20-0005 ROLLED EROSION CTRL PRODUCT EC-3 TYPE 1	13,983.000 SY	_____	_____	_____	_____
2900	606	606SD20-0007 ROLLED EROSION CTRL PRODUCT EC-3 TYPE 3	6,615.000 SY	_____	_____	_____	_____
2910	700	700SD20-0003 REMOVE EXISTING 1 POST SIGN STRUCTURE	65.000 EA	_____	_____	_____	_____
2920	700	700SD20-0004 REMOVE EXISTING 2 POST SIGN STRUCTURE	7.000 EA	_____	_____	_____	_____
2930	700	700SD20-0012 RELOCATE EX. 1 POST GRND MOUNT SGN PANEL	8.000 EA	_____	_____	_____	_____
2940	700	700SD20-0013 RELOCATE EX. 2 POST GRND MOUNT SGN PANEL	1.000 EA	_____	_____	_____	_____

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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
2950	700	700SD20-0018 VA SIGN POST W4 X 13	48.000 LF	_____	_____	_____	_____
2960	700	700SD20-0034 SIGN POST STP-1, 2", 14 GAUGE	243.800 LF	_____	_____	_____	_____
2970	700	700SD20-0035 SIGN POST STP-1, 2 3/16", 10 GAUGE	48.000 LF	_____	_____	_____	_____
2980	700	700SD20-0036 SIGN POST STP-1, 2 1/2", 10 GAUGE	215.000 LF	_____	_____	_____	_____
2990	700	700SD20-0037 SIGN POST STP-1, 2 1/2", 12 GAUGE	250.500 LF	_____	_____	_____	_____
3000	700	700SD20-0038 CONC. FOUND. STP-1, TY. A	47.000 EA	_____	_____	_____	_____
3010	700	700SD20-0039 CONC. FOUND. STP-1, TY. B	16.000 EA	_____	_____	_____	_____
3020	700	700SD20-0046 CONC. FOUND. SSP-VA, 1'9" DIA. X 4'6" DEEP	4.000 EA	_____	_____	_____	_____
3030	700	700SD20-0056 CONC. FOUND. O/H SIGN STRUCTURE	280.000 CY	_____	_____	_____	_____
3040	700	700SD20-0060 ELECTRICAL SERVICE SE-5	1.000 EA	_____	_____	_____	_____
3050	700	700SD20-0141 2 CONDUCTOR CABLE	2,310.000 LF	_____	_____	_____	_____
3060	700	700SD20-0142 4 CONDUCTOR CABLE	20,270.000 LF	_____	_____	_____	_____
3070	700	700SD20-0143 6 CONDUCTOR CABLE	936.000 LF	_____	_____	_____	_____

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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
3080	700	700SD20-0144 8 CONDUCTOR CABLE	2,840.000 LF	_____	_____	_____	_____
3090	700	700SD20-0148 8 CONDUCTOR CABLE EGC	100.000 LF	_____	_____	_____	_____
3100	700	700SD20-0149 CONC. FOUND. LF-1, TY. A	7.000 EA	_____	_____	_____	_____
3110	700	700SD20-0156 LIGHTING POLE LP-2 TYPE D	21.000 EA	_____	_____	_____	_____
3120	700	700SD20-0157 LIGHTING POLE LP-2 TYPE E	7.000 EA	_____	_____	_____	_____
3130	700	700SD20-0174 ELECTRICAL SERVICE WORK PAD	1.000 EA	_____	_____	_____	_____
3140	700	700SD20-0178 JUNCTION BOX JB-S2	4.000 EA	_____	_____	_____	_____
3150	700	700SD20-0179 JUNCTION BOX JB-S3	40.000 EA	_____	_____	_____	_____
3160	700	700SD20-0180 JUNCTION BOX JB-S4	4.000 EA	_____	_____	_____	_____
3170	700	700SD20-0181 ELECT. SER. GRD. ELECTRODE 10'	5.000 EA	_____	_____	_____	_____
3180	700	700SD20-0186 CONDUIT METAL 1-1/2"	210.000 LF	_____	_____	_____	_____
3190	700	700SD20-0188 CONDUIT METAL 3"	50.000 LF	_____	_____	_____	_____
3200	700	700SD20-0189 CONDUIT METAL 4"	441.000 LF	_____	_____	_____	_____
3210	700	700SD20-0194 CONDUIT PVC 2"	245.000 LF	_____	_____	_____	_____

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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
3220	700	700SD20-0195 CONDUIT PVC 3"	5,440.000 LF	_____	_____	_____	_____
3230	700	700SD20-0197 TRENCH EXCAVATION ECI-1	20,696.000 LF	_____	_____	_____	_____
3240	700	700SD20-0199 TEST BORE	8.000 EA	_____	_____	_____	_____
3250	ATTD, 700	700SX20-0002 SIGN STRUCTURE, OVERHEAD SPAN 136.0'	1.000 EA	_____	_____	_____	_____
3260	ATTD, 700	700SX20-0003 SIGN STRUCTURE, OVERHEAD CANT. 30.0'	1.000 EA	_____	_____	_____	_____
3270	ATTD, 700	700SX20-0003 SIGN STRUCTURE, OVERHEAD CANT. 37.0'	1.000 EA	_____	_____	_____	_____
3280	ATTD, 700	700SX20-0003 SIGN STRUCTURE, OVERHEAD CANT. 39.0'	1.000 EA	_____	_____	_____	_____
3290	ATTD, 700	700SX20-0003 SIGN STRUCTURE, OVERHEAD CANT. 40.0'	1.000 EA	_____	_____	_____	_____
3300	ATTD, 700	700SX20-0003 SIGN STRUCTURE, OVERHEAD CANT. 41.0'	1.000 EA	_____	_____	_____	_____
3310	ATTD, 700	700SX20-0003 SIGN STRUCTURE, OVERHEAD CANT. 51.0'	1.000 EA	_____	_____	_____	_____
3320	700	700SX20-0007 CONDUCTOR CABLE 2 CONDUCTOR CABLE EGC	360.000 LF	_____	_____	_____	_____
3330	700	700SX20-0007 CONDUCTOR CABLE 4 CONDUCTOR CABLE EGC	5,560.000 LF	_____	_____	_____	_____

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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
3340	ATTD, 700	700SX20-0017 REMOVE EXIST. OVERHEAD SIGN STRUCTURE .	5.000 EA	_____	_____	_____	_____
3350	ATTD, 700	700SX20-0022 CONC FOUNDATION ITS CONTROLLER CABINET	1.000 EA	_____	_____	_____	_____
3360	ATTD, 700	700SX20-0022 CONC FOUNDATION LF-1, TY. A, MODIFIED	21.000 EA	_____	_____	_____	_____
3370	701	701SD20-0001 SIGN PANEL	2,128.900 SF	_____	_____	_____	_____
3380	704	704SD20-0006 TYPE B CLASS I PVMT LINE MRKG 4"	30.000 LF	_____	_____	_____	_____
3390	704	704SD20-0010 TYPE B CLASS I PVMT LINE MRKG 24"	1,027.000 LF	_____	_____	_____	_____
3400	704	704SD20-0026 TYPE B CLASS VI PVMT LINE MRKG 4"	10.000 LF	_____	_____	_____	_____
3410	704	704SD20-0027 TYPE B CLASS VI PVMT LINE MRKG 6"	110,813.000 LF	_____	_____	_____	_____
3420	704	704SD20-0029 TYPE B CLASS VI PVMT LINE MRKG 12"	10,062.000 LF	_____	_____	_____	_____
3430	ATTD	704SD20-0032 INLAID PAVEMENT MARKER ASPHALT	1,561.000 EA	_____	_____	_____	_____
3440	704	704SD20-0048 PVMT SYMB MRKG SGL TURN ARR. TY B CL II	5.000 EA	_____	_____	_____	_____
3450	704	704SD20-0060 SYMB MRKG LANE REDUCTION ARR TY B CL II	4.000 EA	_____	_____	_____	_____

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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
3460	510	704SP20-0001 REMOVAL OF SRPM	1,440.000 EA	_____	_____	_____	_____
3470	ATTD	705SX20-0001 LUMINAIRE CONVENTIONAL 160W LED, TYPE 3	5.000 EA	_____	_____	_____	_____
3480	ATTD	705SX20-0001 LUMINAIRE CONVENTIONAL 241W LED, TYPE 3	23.000 EA	_____	_____	_____	_____
3490	ATTD, 703, 705	705SX20-0003 LIGHTING REMOVAL OF EXISTING LIGHTING EQUIPMENT	LUMP SUM	LUMP SUM	_____	_____	_____
3500	801	801SD20-0003 ITS CTRLR. CAB.W/SUNSHIELDS GRND. MNTD.	1.000 EA	_____	_____	_____	_____
3510	ATTD	801SX20-0001 COMMUNICATION EQUIP. ROUTER	1.000 EA	_____	_____	_____	_____
3520	ATTD	801SX20-0001 COMMUNICATION EQUIP. STRUCTURE MOUNTED JUNCTION BOX	2.000 EA	_____	_____	_____	_____
3530	ATTD	801SX20-0003 COMMUNICATION EQUIP. 3- CELL INNERDUCT	20,692.000 LF	_____	_____	_____	_____
3540	802	802SD20-0001 UNINTERRUPTIBLE POWER SUPPLY ITS-CC	1.000 EA	_____	_____	_____	_____
3550	804	804SD20-0001 DYNAMIC MSG. SIGN TYPE 1 FULL COLOR	1.000 EA	_____	_____	_____	_____
3560	804	804SD20-0012 DMS COMMUNICATION CABLE	385.000 LF	_____	_____	_____	_____

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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
3570	808	808SD20-0003 FIBER OPTIC CABLE 96 STRAND	25,559.000 LF	_____	_____	_____	_____
3580	808	808SD20-0004 FIBER OPTIC DROP CABLE 12 STRAND	250.000 LF	_____	_____	_____	_____
3590	808	808SD20-0005 PRE-TERMINATED FIBER PATCH PANEL	1.000 EA	_____	_____	_____	_____
3600	808	808SD20-0006 UNDERGROUND SPLICE ENCLOSURE	5.000 EA	_____	_____	_____	_____
3610	808	808SD20-0007 FIBER DISTRIBUTION CENTER	2.000 EA	_____	_____	_____	_____
3620	809	809SD20-0002 MANAGED FIELD ETHERNET SWITCH Gbps	4.000 EA	_____	_____	_____	_____
3630	809	809SD20-0006 DIST.SFP MODULE 1Gbps, LC, MED. HAUL	13.000 EA	_____	_____	_____	_____
3640	812	812SD20-0004 BORED ITS CONDUIT HDPE 4"	549.000 LF	_____	_____	_____	_____
3650	812	812SD20-0007 ITS CONDUIT HDPE 2"	154.000 LF	_____	_____	_____	_____
3660	812	812SX20-0008 ITS CONDUIT HDPE 4"	29,900.000 LF	_____	_____	_____	_____
Section: 0001				Total:		_____	
				Total Bid:		_____	

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FORM C-21B

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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
302SD20-0001	BEDDING MATL.AGGR.NO. 25 OR 26	0.400	_____
302SD20-0002	BEDDING MATL. AGGR. NO. 57	0.400	_____
303SD20-0001	REGULAR EXCAVATION	0.290	_____
303SD20-0007	BORROW EXCAVATION	0.290	_____
303SD20-0029	SILTATION CONTROL EXCAVATION	0.290	_____
303SD20-0036	STORM WATER MAN. BASIN EXCAV.	0.290	_____
305SD20-0005	SELECT MATL. TY. I MIN. CBR-30	0.600	_____
307SD20-0001	HYDRAULIC CEMENT	0.200	_____
307SD20-0010	MANIPULATION 8"	1.200	_____
308SD20-0012	AGGR. BASE MATL. TY. I NO. 21B	0.600	_____
308SX20-0003	CRUSHER RUN AGGR. NO. 25 OR 26	0.400	_____
312SD20-0005	COVER MATL. AGGR. NO. 78	0.600	_____
313SD20-0001	ASPH-STAB. OPEN-GRADED MATERIAL	3.000	_____
315SD20-0004	ASPHALT CONCRETE TY. IM-19.0A CONST	3.500	_____
315SD20-0005	ASPHALT CONCRETE TY. IM-19.0D CONST	3.500	_____
315SD20-0007	ASPHALT CONCRETE TY. SM-9.5A CONST	3.500	_____
315SD20-0008	ASPHALT CONCRETE TY. SM-9.5D CONST	3.500	_____

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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		
315SD20-0010	ASPHALT CONCRETE TY. BM-25.0A CONST	3.500	_____
317SD20-0002	STONE MATRIX ASPH. SMA-9.5 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	_____
414SD20-0001	EROSION CTRL. STONE CL. A1, EC-1	0.600	_____
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	_____
506SD20-0002	RETAINING WALL RW-3	1.892	_____
506SD20-0007	RETAINING WALL EXCAVATION	0.290	_____
508SD20-0004	DEMO. OF PAVEMENT FLEXIBLE	0.200	_____
515SD20-0004	FLEXIBLE PAVE.PLANING 0"-2"	0.071	_____
515SD20-0006	FLEX PAVEMENT PLANING ABOVE 4"	0.110	_____

Date: _____

Signature: _____

(Firm or Corporation)

(Vendor No.)

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FORM C-21C

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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
316SD20-0036	REINF. STEEL BRIDGE APPR. SLAB CONST.	_____
403SD20-0007	STEEL PILES 14"	_____
403SD20-0039	DRIVING TEST FOR 14" STEEL PILE	_____
406SD20-0003	CR REINF. STEEL CL. I 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	_____
505SD20-0017	GUARDRAIL TERMINAL GR-MGS2	_____
505SD20-0018	GUARDRAIL END ANCHORAGE GR-MGS3	_____
505SD20-0019	GUARDRAIL HEIGHT TRANSITION GR-MGS4	_____
507SD20-0006	FENCE FE-CL VINYL COATED	_____
700SD20-0018	VA SIGN POST W4 X 13	_____
700SD20-0034	SIGN POST STP-1, 2", 14 GAUGE	_____
700SD20-0035	SIGN POST STP-1, 2 3/16", 10 GAUGE	_____
700SD20-0036	SIGN POST STP-1, 2 1/2", 10 GAUGE	_____
700SD20-0037	SIGN POST STP-1, 2 1/2", 12 GAUGE	_____
700SD20-0156	LIGHTING POLE LP-2 TYPE D	_____

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

Virginia Department of Transportation

Date Printed: 01/04/2024

Contract ID: C0000107937C01

FORM C-21C

Order No.: K58

Rev 12-21-08

Page 2

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- LIGHTING POLE LP-2 TYPE E
0157

Date: _____

Signature: _____

(Firm or Corporation)

(Vendor No.)

ORDER NO.: K58
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Virginia Department of Transportation

Date Printed: 01/04/2024

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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
315SD20-0004	ASPHALT CONCRETE TY. IM-19.0A CONST
315SD20-0005	ASPHALT CONCRETE TY. IM-19.0D CONST
315SD20-0007	ASPHALT CONCRETE TY. SM-9.5A CONST
315SD20-0008	ASPHALT CONCRETE TY. SM-9.5D CONST
315SD20-0010	ASPHALT CONCRETE TY. BM-25.0A CONST
315SD20-0018	ASPH.CONC.CURB BACKUP MATL. CONST
317SD20-0002	STONE MATRIX ASPH. SMA-9.5 64E-22

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Determination of Major Items

Item Number	Item Description
315SD20-0010	ASPHALT CONCRETE TY. BM-25.0A CONST
519SX20-0001	SOUND BARRIER WALL ABSORPTIVE
317SD20-0002	STONE MATRIX ASPH. SMA-9.5 64E-22
315SD20-0005	ASPHALT CONCRETE TY. IM-19.0D CONST

**ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01**

Form C-111
Rev. 2-15-11

**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
MINIMUM DBE REQUIREMENTS**

PROJECT NO: 0286-029-259 C501, D605, B628, B630, B631, B632

FHWA NO: STP-5B01(488)

*****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 15.00%

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.: K58
CONTRACT ID. NO.: C0000107937C01

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.: 0286-029-259 C501, D605, B628, B630, B631, B632

FHWA NO: STP-5B01(488)

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.: K58
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Form C-112
Rev. 3-1-11
Page 2 of 2

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.: K58
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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)

[cn315-000100-00](#)

SECTION 315.05(c) PLACING AND FINISHING is modified by replacing the third paragraph with the following:

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. On all roads except secondary routes, 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. On all roads except secondary routes, 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 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.

1-18-17 (SPCN)

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

[cn505-000100-01](#)

IMPACT ATTENUATOR — This work shall consist of replacing damaged impact attenuators, or installing new, by furnishing and installing impact attenuators in accordance with Section 505 of the Specifications and as directed by the Engineer. Replacement impact attenuators shall be a Type I (Re-Directive Low-Maintenance) as designated on VDOT's MASH Provisionally Approved Products List. Impact attenuators shall be installed in accordance with the manufacturer's specifications and instructions, Standard Drawing IA-LM, and Section 505 of the Specifications.

If replacing an existing impact attenuator, the Contractor shall inspect the condition of the existing impact attenuator foundation pad for size, thickness, adequacy of reinforcement, slope, cracking, surface wear, shifting, undermining, settling, or other signs of age or deterioration which may be unsuitable for continued use. If any of these conditions are present, the Contractor shall notify the Engineer and request authorization prior to replacing the existing foundation pad.

If the existing foundation pad is suitable for continued use and existing bolt patterns are present, the Contractor shall confirm that installing new bolts will not negatively impact performance of the unit.

Anchor bolts shall be set into holes drilled with rotary impact drills of the sizes recommended by the manufacturer of the attenuator, and as approved by the Engineer. Bolt holes shall be cleaned with a bottle brush before installing the anchor bolts.

The Type I (Re-Directive Low-Maintenance) Impact Attenuator shall be bolted in place according to the attenuator manufacturer's instructions, but not before the fresh concrete foundation, if applicable, has reached 28-day strength, determined in accordance with Section 217 of the Specifications.

If a transition is required, the appropriate manufacturer's standard transition shall be used.

The work site shall be protected according to Section 512 of the Specifications and the VWAPM.

Installers and repair personnel shall be certified by the manufacturer. The Contractor shall submit two copies of the manufacturers' installation instructions to the Engineer prior to beginning work.

The Contractor shall provide one training session to VDOT personnel at a location selected by the Engineer within the VDOT District where the impact attenuators were installed, when designated as a pay item. The training sessions shall be conducted by a manufacturer's representative and cover impact attenuator maintenance and repair. The Department may add additional training sessions to be paid for at the unit price bid. Each session shall be structured such that the personnel trained will be able to perform maintenance and repair beginning within one year of the training.

The Contractor shall provide documentation tracing the steel in the finished product back to raw material in accordance with Buy America requirements.

Impact attenuator will be measured in units of each and will be paid for at the Contract Each price. This price shall include furnishing and installing pad, impact attenuator, and transitions.

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Remove existing impact attenuator will be measured and paid for as **remove existing guardrail terminal** in accordance with Section 505 of the Specifications. This price shall include removing and disposing of existing impact attenuator.

Site Preparation will be measured and paid for as **Guardrail terminal site preparation** in accordance with Section 505 of the Specifications.

Maintenance and Repair Training will be measured in units of each and will be paid for at the Contract each price.

Payment will be made under:

Pay Item	Pay Unit
Impact attenuator (Type, Speed)	Each
Maintenance and Repair Training	Each

1-24-19_(SPCN)

[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)

[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) [\[formerly cn512-030100-00\]](#)

[cn522-000300-00](#)

PROTECTION OF NESTING BIRDS DURING BRIDGE MAINTENANCE — If bird nests are found on a bridge included in the Contract, the Contractor shall immediately notify the Engineer and suspend all work in the immediate vicinity of the nests until authorized to continue. The Contractor may proceed with other work activities that do not result in removal of nests or nest contents.

7-24-20 (SPCN)

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

[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)

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

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.: K58
CONTRACT ID. NO.: C0000107937C01

CONTINUOUS PROSECUTION OF WORK — The Contractor may schedule and perform work on this contract any time within the fixed time limit set forth in the contract; however, work on each route/section shall be continuously prosecuted once started until completion of that particular route/section.

6-20-06; Reissued 7-12-16_(SPCN)

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)

PIER PROTECTION SYSTEM shall be installed as shown on the Plans.

Pier protection system will be measured in feet and paid for at the Contract foot price for the height specified. This price shall include the barrier, reinforcing steel, footing, excavation for footing and backfilling as directed by the Engineer, and all miscellaneous hardware as detailed on the Plans within the pay limits shown in the Plans. This price shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Pier protection system (height)	Feet

10-20-20 (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.: K58
CONTRACT ID. NO.: C0000107937C01

BEDDING MATERIAL AGGREGATE NO. 25 OR 26 shall conform to Section 205 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. 25 or 26 will be measured in tons and will be paid for at the Contract unit price per ton. This price shall include furnishing, placing, and compacting.

Payment will be made under:

Pay Item	Pay Unit
Bedding Material Aggr. No. 25 or 26	Ton

4-10-20 (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 unit price per ton. This price shall include furnishing, placing, and compacting.

Payment will be made under:

Pay Item	Pay Unit
Bedding Material Aggregate. No. 57	Ton

4-10-20 (SPCN)

CRUSHER RUN AGGREGATE NO. 25 OR 26 shall conform to Section 205 of the Specifications and shall be placed in accordance with Section 302 of the Specifications. The aggregate 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

4-10-20 (SPCN)

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

RESET BEARING SOLE PLATE

SECTION 426 REPAIRING EXISTING STEEL STRUCTURES of the Specifications is amended as follows:

Section 426.03 Procedures is amended to include the following:

- p) **Reset Bearing Sole Plate** shall consist of removing existing welds connecting sole plate to girder; grinding girder flange to remove burrs; positioning HLMR bearing assembly in a truly neutral position; welding sole plate to girder; inspecting new welds; cleaning and applying paint to new welds and disturbed areas; and providing environmental, worker and safety protection, and disposal of material in accordance with Sections 408 and 413, and the details herein.

The following procedure shall be adhered to when resetting the bearings:

1. Each of the girders shall be jacked enough to relieve pressure from bearing, by an amount specified on the plans. The cost of jacking and supporting beams shall be paid for under the pay item Jacking and Blocking.
2. Remove existing fillet welds connecting sole plate to girder.
3. Grind bottom flange to remove burrs. Clean bottom of flange in accordance with Section 411.04(a) Method 5.
4. Position the HLMR bearing assembly in a truly neutral position at 60 degrees F.
5. Release jacks at that girder.
6. Using a fillet weld as specified on the plans, re-weld sole plate to girder flange. New welds shall be inspected by magnetic particle testing to be performed by the Contractor.
7. All new welds and areas where existing coating is disturbed shall be cleaned and re-coated using the Coating System specified on the plans.
8. The existing structure is designated a Type B structure in accordance with Section 411.

Section 426.04 Measurement and Payment is amended to include the following:

NS Bridge Constr. Reset Bearing Sole Plate will be measured in units of each and will be paid for at the contract unit price per each.

Payment will be made under:

Pay Item	Pay Unit
Bridge Constr. Reset Bearing Sole Plate	Each

7-6-23 (SPCN)

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

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: removing temporary erosion and sediment control devices, seeding/over seeding, punch list, clean up, and Work of a minor nature, as agreed to by the Engineer.

● **Substantial Completion Date** is the date on or before which all work required for Substantial Completion must be completed such that the Contractor receives an incentive. 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 **May 11, 2027**. The Department will pay an incentive of **\$8,000** for each Calendar Day before the Substantial Completion Date that the Substantial Completion requirements are met. The incentive is capped at **\$984,000**.

If the Substantial Completion requirements are not met on or before the Substantial Completion Date, the Department will assess a disincentive of **\$8,000** per Calendar Day after the Substantial Completion Date that the Contractor does not achieve Substantial Completion, including Sundays and Holidays. The disincentive is capped at **\$984,000**.

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.

8-11-23 (SPCN)

CONCRETE FOUNDATION (LF-1 TY. A), MODIFIED shall be constructed in accordance with the plan details.

Measurement and payment for the Concrete foundation LF-1 Type A Modified will be in accordance with Section 700.06 of the Specifications for Concrete foundation.

Payment will be made under:

Pay Item	Pay Unit
Conc. Foundation (LF-1 Type A Mod.)	Each

11-17-23 (SPCN)

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

SECTION 510—RELOCATING OR MODIFYING EXISTING MISCELLANEOUS ITEMS of the Specifications is amended as follows

Section 510.04 Measurement and Payment is amended to include the following:

Remove Existing Fence will be measured in linear feet and will be paid for at the contract unit price per linear feet. The price shall include removal, disposal and cleaning up, restoring the area. The price shall include removal of foundation for fence posts and filling/ completing the hole.

Remove Existing Pipe (Type, Size) will be measured in linear feet and will be paid for at the contract unit price per linear foot. This price shall include saw-cutting, removing and disposing of existing pavement or concrete, removing the pipe, concrete collar and cover, all necessary excavation, and disposal of waste materials to an offsite location.

Remove- Existing Manhole will be measured in units of each and will be paid for at the contract unit price per each. This price shall include disconnecting pipe connections, saw-cutting, removing and disposing of existing pavement or concrete, removing the manhole, frame and cover, all necessary excavation, and disposal of waste materials to an offsite location.

Remove-Existing Drop Inlet will be measured in units of each and will be paid for at the contract unit price per each. This price shall include disconnecting electrical connections, saw-cutting, removing and disposing of existing pavement or concrete, removing the drop inlet, frame and cover, all necessary excavation, and disposal of waste materials to an offsite location.

Remove-Existing Drop Inlet SWM Riser will be measured in units of each and will be paid for at the contract unit price per each. This price shall include disconnecting electrical connections, saw-cutting, removing and disposing of existing pavement or concrete, removing the drop inlet, frame and cover, all necessary excavation, and disposal of waste materials to an offsite location.

Remove Existing Endwall will be measured in units of each and will be paid for at the contract unit price per each. This price shall include disconnecting electrical connections, saw-cutting, removing the endwall, all necessary excavation, and disposal of waste materials to an offsite location.

Modify Existing Drop Inlet shall be measured and paid for in units of each, complete and in place. This price shall include removal of portions of existing structure to receive the proposed pipe as shown in the plans, furnishing and placing all Class A3 concrete, reinforcing steel, labor, tools equipment and all incidentals necessary to complete the work as shown in the plans.

Modify Existing Manhole, shall be measured and paid for in units of each, complete in place, which price shall include removal of portions of existing structure to receive the proposed pipe as shown in the plans, furnishing and placing all Class 20 concrete, reinforcing steel, labor, tools equipment and all incidentals necessary to complete the work as shown in the plans.

The Contractor shall exercise the utmost care not to damage the adjacent structure, using shoring and precision cutting when modifying the existing Manhole to receive the proposed pipe.

Modify Existing Riser, shall be measured and paid for in units of each, complete in place, which price shall include removal of portions of existing structure to receive the proposed pipe as shown in the plans, furnishing and placing all Class 20 concrete, reinforcing steel, labor, tools equipment and all incidentals necessary to complete the work as shown in the plans.

The Contractor shall exercise the utmost care not to damage the adjacent structure, using shoring and precision cutting when modifying the existing Drop Inlet, to receive the proposed pipe.

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

Adjust Existing Drop Inlet shall be measured and paid for in units of each, complete in place, which price shall include removal of portions of existing structure as shown in the plans, furnishing and placing all Class 20 concrete, reinforcing steel, resetting manhole frame and cover, labor, tools equipment and all incidentals necessary to complete the work as shown in the plans. Inverts of existing manholes to be modified shall be shaped in accordance with Standard IS-1.

Adjust Existing Manhole shall be measured and paid for in units of each, complete in place, which price shall include removal of portions of existing structure as shown in the plans, furnishing and placing all Class A3 concrete, reinforcing steel, resetting manhole frame and cover, labor, tools, equipment and all incidentals necessary to complete the work as shown in the plans.

Payment will be made under:

Pay Item	Pay Unit
Remove Existing Fence	Linear Foot
Remove Existing Pipe (Type, Size)	Linear Foot
Remove- Existing Manhole	Each
Remove-Existing Drop Inlet	Each
Remove-Existing Drop Inlet SWM Riser	Each
Remove Existing Endwall	Each
Modify Existing Drop inlet	Each
Modify Existing Manhole	Each
Modify Existing Riser	Each
Adjust Existing Drop Inlet	Each
Adjust Existing Manhole	Each

11-20-23 (SPCN)

Communication Lines Conduit System This work shall consist of furnishing and installing bridge conduit systems and/or bridge lighting systems in accordance with section 419 of the Specifications, the plans, or as established by the Engineer.

Communication Lines Conduit System will be paid for at the contract lump sum price per structure. This price shall include furnishing and installing the communications line conduit system and all incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Communication Lines Conduit System B632	Lump Sum

11-20-23 (SPCN)

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

3-Cell Innerduct will be measured in units of linear feet and will be paid for at the contract unit price per linear foot. This price shall include furnishing and installing the 3-Cell Innerduct in accordance with the plans and all incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Communication Equip. 3-Cell Innerduct	Linear Foot

11-20-23 (SPCN)

Structure Mounted Junction Box will be measured in units of each and will be paid for at the contract unit price per each. This price shall include furnishing and installing the structure mounted junction box in accordance with section 238 and section 700 of the Specifications, and all incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Communication Equip. Str. Mounted Junction Box	Each

11-20-23 (SPCN)

Communication Equipment Router will be measured in units of each and will be paid for at the contract unit price per each. This price shall include furnishing and installing the communications equipment router in accordance with section 809 of the Specifications, and all incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Communication Equip. Router	Each

11-20-23 (SPCN)

STOCKPILE SURPLUS MATERIALS

There is no location in the project that can be used to stockpile surplus and/or excavated materials. The Contractor is required to seek written approval from VDOT before utilizing a location on or off the right of way for use as a stockpile area.

12-1-23 (SPCN)

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

IMPACTS TO TRAFFIC

Total closures of any roadway or intersection for such work as installation and removal of overhead sign structures, erection of bridge members or with substantiation of need by the contractor will require:

At minimum, four (4) weeks advance notice to VDOT (this shall include the district construction engineer, district traffic operations director, and district communications manager). This advance notice will allow the contractor and VDOT to coordinate on a public outreach campaign and/or advertising to reach affected motorists and target audiences. Alternate dates can be advertised in the event of inclement weather.

The contractor will be responsible for any costs associated with internet, mobile, print and/or radio advertising to alert motorists and commercial traffic to the lane closures.

The contractor will be responsible for communicating with the toc to use variable message boards to encourage through travelers to consider taking an alternate route.

If a total closure greater than fifteen (15) minutes is required, it shall be approved separately with full maintenance of traffic and traffic management plans.

All lane and/or shoulder closures shall be entered into LCAMS at least ten (10) days in advance of the proposed lane and/or shoulder closure and no later than close of business Wednesday the week prior to the closure stating the location, purpose, time and duration of closure. Any conflicts generated from LCAMS shall be resolved no later than close of business Thursday the week prior to the closure.

The contractor shall confirm at least twenty-four (24) hours before any scheduled lane and/or shoulder closure and shall include a written reiteration of the proposed tasks and a listing of materials, labor and equipment to be utilized, in order for toc to post the information on the VDOT website and VA511 system.

12-1-23 SPCN

Gate Valve with Extended Stem shall be in accordance with the plans, material notes, and details describing the work.

Gate Valve with Extended Stem will be measured in units of each, complete and in place and will be paid for at the contract unit price per each. This price shall include gate valve, extended stem, 2-inch square operating unit, fittings, joint restraint, tracer wire with grounding bar and rod (if required), and shall include furnishing all tools, labor, materials, equipment and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Drainage Gate Valve with Extended Stem	Each

11-27-23 (SPCN)

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

CONCRETE FOUNDATION ITS CONTROLLER CABINET – Concrete Foundation shall be in accordance with the ITS Controller Cabinet Foundation Details drawing and Section 700 of the Specifications.

Concrete Foundation ITS Controller Cabinet will be measured units of each and will be paid for at the contract unit price per each for the standard, type and size designated. This price shall include providing foundation design and shop drawings; concrete, reinforcing steel, anchor bolts, washers, nuts, bolt circle templates, lubricant, torque, ultrasonic test on anchor bolts, grounding electrodes (including grounding electrode clamps, grounding electrode conductors, and installation), conduits, testing grounding conductor-to-electrode continuity, excavating, backfilling, compacting, disposing of surplus and unsuitable material, and restoring disturbed areas.

Payment will be made under:

Pay Item	Pay Unit
Concrete Foundation ITS Controller Cabinet	Each

11-17-23 (SPCN)

REMOVE AND DISPOSE EXISTING SIGNAL EQUIPMENT AND TRAFFIC CONTROL DEVICES

This work shall consist of removing and disposing of existing signal equipment and traffic control devices as shown on the plans and as directed by the Engineer. Disposal shall be in accordance with section 106.04 of the Specifications

Remove and Dispose Existing (Type) Sign Structure will be measured in units of each and will be paid for at the Contract each price for the type of structure specified. This price shall include removing and disposing of the existing sign structure and all supported sign panels, conduits, cables, lights, luminaires, and luminaire retrieval system attached to the structure; disengaging existing electrical service; and capping and sealing conductors. This price shall also include excavating, demolishing, and removing foundational elements to at least two feet below ground line; capping and sealing conduit with hydraulic cement mortar or grout, and epoxy resin; disposing of waste materials; backfilling with suitable materials; compacting; and restoring (grading, topsoiling and seeding). For bridge mounted overhead sign structures, this price shall also include cutting existing anchor bolts, capping and sealing, hydraulic cement mortar or grout, and epoxy resin.

Remove and Dispose Existing Dynamic Message Sign (DMS) will be measured in units of each and will be paid for at the Contract each price. This price shall include removing and disposing of the existing DMS sign panel, framing and bracing, conductor cables, and attachment hardware.

Remove and Dispose Existing Dynamic Message Sign (DMS) Control cabinet will be measured in units of each and will be paid for at the contract unit price per each. This price shall include removing and disposing of the controller cabinet and incidental equipment.

Remove and Dispose Existing Broadband Communication Service will be measured in units of each and will be paid for at the contract unit price per each. The price bid shall include the removal and disposal of the telephone service network interface device, mounting, fittings, and miscellaneous cabling.

Remove and Dispose Existing Lighting Equipment will be paid for at the contract lump sum price. This price shall be full compensation for removing and disposing of the existing lighting equipment as shown on the plans or as directed by the Engineer.

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

Payment will be made under:

Pay Item	Pay Unit
Remove Existing Overhead Sign Structure	Each
Remove Existing Dynamic Message Sign (DMS)	Each
Remove Existing Dynamic Message Sign (DMS) Control Cabinet	Each
Remove Existing Interim Broadband Communication Service	Each
Remove Existing Lighting Equipment	Lump Sum

REMOVE EXISTING TEMP. CONC. (TCB-1) MEDIAN BARRIER This work shall consist of removing the existing concrete, median barriers and removing and disposing of the existing impact attenuators, as shown on the plans.

The existing TCB-1 Barriers shall be removed and delivered to a storage area designated by the Engineer. The Contractor shall then coordinate with the Northern Region Operations Office (NRO) to determine which TCB-1 Barriers will be salvaged or disposed.

Remove Existing TCB-1 Median Barrier will be measured in linear feet and will be paid for at the contract unit price per linear foot. This price shall include removal, loading, transporting, unloading and all necessary excavation, and disposal of designated materials in accordance with Section 106.04 of the Specifications.

Payment will be made under:

Pay Item	Pay Unit
Remove Exist. TCB-1 Median Barrier	Linear Foot

TEMPORARY PAVEMENT WEDGE

At the conclusion of each workday, equipment and materials shall not be stored within the established clear zone and/or deflection zone of physical barriers in accordance with the contract documents. Any areas excavated below the existing pavement surface and within the clear zone, unless protected with barrier, shall be backfilled with approved material to form an approximate 6:1 wedge against the existing pavement surface for the safety and protection of vehicular traffic. All cost for placing, maintaining, and removing 6:1 wedge (4:1 minimum) shall be included in the price bid for other items in the contract, and no additional compensation will be allowed. Cost for temporary 6:1 wedge shall be included in the unit cost of other items. See Appendix A of the VWAPM for drop-off requirements

12-8-23 (SPCN)

INCIDENTAL COST ITEMS

Brush Silt Barrier

If the removal of Brush Silt Barrier is specified by the plans or required by the Engineer, the cost of removal and disposal of brush shall be in accordance with Section 109 of the applicable VDOT Road and Bridge Specifications.

Existing Drainage Facilities

Existing drainage facilities being utilized as a part of the drainage system and designated on the plans "To Be Cleaned Out" shall be cleaned as directed by the Engineer. The cost incidental to this shall be included in the contract price for other items.

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

Sequence of Construction/Maintenance of Traffic

The Sequence of Construction (SOC) and Maintenance of Traffic (TTC) shown in the plans are provided to only show a general handling of traffic during construction. The contractor is required to submit a maintenance of traffic plan together with a complete sequence of construction for the bridge work and roadway work. The cost of developing and submitting a complete sequence of construction and maintenance of traffic plans is considered incidental to the cost of other items.

Utilities

The contractor shall schedule all phases of construction in such a manner that water sewer, cable, power, and any overhanging or underground utility services will not be interrupted. The cost of any temporary connection, in part or whole, shall be incidental to the utility relocation/construction.

The contractor shall coordinate their utility adjustments/relocation activities with the owner of the utility. The contractor is required to protect all existing well, septic tanks, sanitary drain fields, etc. as directed by the engineer whether shown on the plans or not.

The cost of this work is considered incidental to the cost of other items.

Regular Excavation

The cost of removal of all existing concrete items located in the area to be graded, including, but not limited to the following; Curb, Gutter, Sidewalk, Aprons, Underdrain, shall be included in the price bid for regular excavation:

12-4-23 (SPCN)

REMOVAL OF SNOW-PLOWABLE RAISED PAVEMENT MARKERS DURING TRAVEL LANE SHIFTS

The Contractor shall locate, remove, and dispose of all existing asphalt-embedded Snowplowable Raised Pavement Marker (SRPM) castings which lie within the travel path when traffic lanes are 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. The cost for performing this work shall be included in the price bid for other appropriate items of work.

3-3-20 (SPCN)

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

SP0F0-000100-00

Reissued July 12, 2016

PREDETERMINED MINIMUM WAGE RATES

"General Decision Number: VA20230116 09/01/2023

Superseded General Decision Number: VA20220116

State: Virginia

Construction Type: Highway

Counties: Fairfax, Fairfax* and Falls Church* Counties in Virginia.

*including the independent cities of Falls Church and Fairfax

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.	

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

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.
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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
1	09/01/2023

ELEC0080-011 12/01/2021

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

* LABO0011-011 09/01/2023

	Rates	Fringes
LABORER: Common or General.....	\$ 21.94	8.32

LABO0011-012 09/01/2020

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

	Rates	Fringes
LABORER		
Asphalt Raker.....	\$ 21.51	7.69
Asphalt Shoveler.....	\$ 20.59	7.69

 PLAS0891-011 06/01/2020

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER....	\$ 20.70	8.03

 * SUVA2016-052 07/02/2018

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 20.97	0.00
FENCE ERECTOR.....	\$ 15.28 **	0.00
IRONWORKER, REINFORCING.....	\$ 34.18	0.00
IRONWORKER, STRUCTURAL.....	\$ 34.18	0.00
LABORER: Grade Checker.....	\$ 14.88 **	0.00
LABORER: Pipelayer.....	\$ 20.48	0.00
LABORER: Power Tool Operator....	\$ 15.69 **	0.00
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 23.93	0.00
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 19.00	3.49
OPERATOR: Broom/Sweeper.....	\$ 17.40	2.01
OPERATOR: Crane.....	\$ 29.46	0.00
OPERATOR: Drill.....	\$ 24.89	0.00
OPERATOR: Gradall.....	\$ 19.26	0.00
OPERATOR: Grader/Blade.....	\$ 23.21	0.00
OPERATOR: Hydroseeder.....	\$ 16.64	0.00

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

OPERATOR: Loader.....	\$ 18.92	0.00
OPERATOR: Mechanic.....	\$ 22.84	0.00
OPERATOR: Milling Machine.....	\$ 23.19	2.94
OPERATOR: PAVEMENT PLANER GROUNDSMEN.....	\$ 19.75	0.00
OPERATOR: PAVEMENT PLANER.....	\$ 21.14	0.00
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 21.39	2.98
OPERATOR: Piledriver.....	\$ 21.83	4.08
OPERATOR: Roller (Finishing)....	\$ 18.73	3.23
OPERATOR: Roller.....	\$ 18.92	0.00
OPERATOR: Screed.....	\$ 22.13	4.89
OPERATOR: Asphalt Spreader and Distributor.....	\$ 20.50	2.16
OPERATOR: Bulldozer, Including Utility.....	\$ 20.64	0.00
PAVEMENT MARKING OPERATOR.....	\$ 22.15	0.00
PAVEMENT MARKING TRUCK DRIVER....	\$ 18.78	0.00
TRAFFIC CONTROL: Flagger.....	\$ 13.64 **	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.....	\$ 18.05	0.00
TRUCK DRIVER: Single & Multi Axle.....	\$ 18.94	3.02

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

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

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** 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 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).

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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

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.

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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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[SP0F0-000130-02](#)

October 3, 2023
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 October 23, 2023

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.

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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 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.

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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:

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.

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

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

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

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

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

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, 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.

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

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

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

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

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 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.

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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 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.

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

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

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

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

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

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

III. NONSEGREGATED FACILITIES

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

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The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA- 1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), 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 basic hourly 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. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act ([40U.S.C. 3141\(2\)\(B\)](#)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. 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 must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. 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 classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH-1321) must 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. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in [29 CFR part 1](#), a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

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

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

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c. *Conformance.* (1) The contracting officer must 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 be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is used 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) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) 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 will be sent by the contracting officer by email to DBAconformance@dol.gov. 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.

(4) 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 will, by email to DBAconformance@dol.gov, 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.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must 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.

d. *Fringe benefits not expressed as an hourly rate.* 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 may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

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e. *Unfunded plans.* 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, in accordance with the criteria set forth in § 5.28, 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.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and 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.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its procurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, [31U.S.C. 3901–3907](#).

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3. Records and certified payrolls (29 CFR 5.5)

a. *Basic record requirements (1) Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) *Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; 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 [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) *Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section 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 [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act, the contractor must 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.

(4) *Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. *Certified payroll requirements (1) Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts- covered work is performed, certified payrolls to the contracting agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) *Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (e.g., the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH-347 or in any other format desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division website at <https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347.pdf> or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

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(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a “Statement of Compliance,” signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working 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](#); and

(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(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) *Use of Optional Form WH-347.* The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 will satisfy the requirement for submission of the “Statement of Compliance” required by paragraph 3.b.(3) of this section.

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification.* 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. 3729](#).

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

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(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, 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, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under [29 CFR part 6](#) any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices (1) Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform 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 (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must 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, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must 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 this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

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(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and [29 CFR part 30](#).

c. 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 journeyworkers 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 must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

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

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

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10. **Certification of eligibility.** a. By entering into this contract, the contractor certifies that neither it 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 [40U.S.C. 3144\(b\)](#) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, [18U.S.C. 1001](#).

11. **Anti-retaliation.** It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#); or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#).

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 watchpersons 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 and interest from the date of the underpayment. 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 watchpersons 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.

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* \$31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, 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 that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, [31U.S.C. 3901–3907](#).

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower- tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

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5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

- a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;
- b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;
- c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or
- d. Informing any other person about their rights under CWHSSA or this part.

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.

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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.

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 long- standing 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).

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VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

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

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 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; 2CFR 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 200.327.

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.

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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 200.327.

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.
- 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.

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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 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

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(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.

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).

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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 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.

* * * * *

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

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) 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;

(2) 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

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(3) 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)

b. 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 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.

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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.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B) This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:
 - a. To the extent that qualified persons regularly residing in the area are not available.
 - b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.
 - c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

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2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

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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;
 - d. "Minority" includes:

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- (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 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:

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- 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.

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- 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 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:	
6140 Petersburg - Colonial Heights - Hopewell, VA	30.6

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	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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SP105-000100-00

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
INFORMAL PARTNERING

January 14, 2008c; Reissued July 12, 2016

I. DECLARATION AND DESCRIPTION

The Virginia Department of Transportation (VDOT) is firmly committed to the formation of a partnering relationship with the Contractor, all subcontractors, suppliers, FHWA representatives; where appropriate, other federal agencies, local government officials, utilities representatives, law enforcement and public safety officials, consultants, and other stakeholders to effectively and efficiently manage and complete each construction or maintenance contract to the mutual and individual benefits and goals of all parties. Partnering is an approach to fulfilling this commitment where all parties to the contract, as well as individuals and entities associated with or otherwise affected by the contract, willingly agree to dedicate themselves by working together as a team to fulfill and complete the construction or maintenance contract in cost effective ways while preserving the highest standards of safety and quality called for by the Contract combined with the goals of on time/on budget completion. The approach must still allow for the fact that the members of the team share many common interests yet have differing authorities, interests, and objectives that must be accommodated for the project to be viewed as successful by all parties. It is recognized by VDOT that partnering is a relationship in which:

- Trust and open communications are encouraged and expected by all participants
- All parties move quickly to address and resolve issues at the lowest possible level by approaching problems from the perspectives and needs of all involved
- All parties have identified common goals and at the same time respect each other's individual goals and values
- Partners create an atmosphere conducive to cooperation and teamwork in finding better solutions to potential problems and issues at hand

II. INFORMAL PARTNERING STRUCTURE

It is the business intent of the Department that **informal** partnering will be required on **this** project, whereby the spirit and principles of partnering are practiced from onsite field personnel to executive level owners and employees. The VDOT Field Guide to Partnering available on the VDOT website <http://www.virginiadot.org/business/resources/partnerfinalallowres.pdf> will be the standard reference guide utilized to structure and guide partnering efforts. This guide will be systematically evaluated to incorporate better practices as our partnering efforts evolve. Of particular note is the need for effective and responsive communication between parties to the partnering relationship as emphasized in Section 105.03(d) of the Specifications.

Informal partnering need not require the services of a professional facilitator and may be conducted by the actual partnering participants themselves. Informal partnering, and more specifically the Partnering Charter, will not change the legal relationship of the parties to the Contract nor relieve either party from any of the terms of the Contract.

III. PROCEDURES

The following are general procedures for informal partnering and are not to be considered as inclusive or representative of procedural requirements for all projects. Participants shall consult the VDOT Field Guide for Partnering for assistance in developing specific guidelines to those efforts required for their individual projects.

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Prior To Project Construction: At least 5 days prior to or in connection with the preconstruction conference the Contractor shall attend a conference with the Engineer at which time he and the Engineer shall discuss the extent of the informal partnering efforts required for the project, how these have been accommodated in the Contractor's bid and the identity of expectations and stakeholders associated with the project. Informal partnering efforts require the Department and the Contractor to mutually choose a single person from among their collective staffs, or a trained facilitator to be responsible for leading all parties through the VDOT Field Guide to Partnering and any subsequent partnering efforts.

Partnering Meetings During Project Construction: In informal partnering efforts the Contractor shall provide a location for regularly scheduled partnering meetings during the construction period. Such meetings will be scheduled as deemed necessary by either party. The Contractor and VDOT will require the attendance of their key decision makers, including subcontractors and suppliers. Both the Contractor and VDOT shall also encourage the attendance of affected utilities, concerned businesses, local government and civic leaders or officials, residents, and consultants, which may vary at different times during the life of the Contract. The Department and the Contractor are to agree upon partnering invitees in advance of each meeting. Follow-up partnering workshops may be held throughout the duration of the project as deemed necessary by the Contractor and the Engineer.

IV. MEASUREMENT AND PAYMENT

Informal Partnering, because the extent to which certain partnering activities are pursued is at the Contractor's option, and may vary according to project complexity, work history between the parties, project duration, the Contractor's own unique methods, means, and schedule to execute and complete the work, etc.; will not be paid for as a separate bid item but all the costs associated with informal partnering efforts for the duration of the work shall be considered inclusive and incidental to the cost of other appropriate items.

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
CONSTRUCTION RECORD DOCUMENTATION OF PERMANENT STORMWATER MANAGEMENT FACILITIES

February 1, 2018

I. Description

This specification covers the requirement for the Contractor to provide Construction Record Documents of permanent stormwater management facilities (SWMF).

II. Definitions

1. **Construction Record Documents (CRDs).** Documents that record and detail the construction and final state of a SWMF, including, but not limited to, construction record surveys, shop drawings, and all certifications required in the Contract for the specific type of SWMF.
2. **Licensed Professional.** A Professional Engineer, Land Surveyor, or Certified Landscape Architect licensed to practice in the Commonwealth of Virginia.

III. Requirements

The Contractor shall provide CRDs and other required information identified in Section IV for all permanent SWMF shown in the Plans. CRDs shall comply with Section 105.10(c) of the Specifications. All survey work and drawings shall comply with the VDOT Survey Manual and CADD Manual.

CRDs shall document the items summarized in Section IV for each type or category of SWMF on the Project. The CRDs shall be signed and sealed by a Licensed Professional.

A digitally signed and sealed copy of the CRDs and other required information for permanent SWMF on the Project shall be provided to the Engineer prior to Final Acceptance.

Deviations from the Plans that result in a decrease in the water quality or quantity volumes, or any change to the shape, size, location or elevations of the facility or its associated structures shall be shown on the CRDs for the Engineer's review. The Contractor shall be responsible for making any corrections to the SWMF required by the Engineer and updating the CRDs prior to Final Acceptance.

IV. CRDs for Permanent Stormwater Management Facilities

CRDs shall be provided for the following types of permanent SWMF's shown in the Plans:

1. **Constructed Wetlands, Wet Ponds, Extended Detention, and Dry Detention Basins.** These facilities require a construction record survey which shall include:
 - A. Finished elevations, including pretreatment areas, basin floor elevations, bench elevations, pool elevations, and embankment contours and elevations.
 - B. Horizontal location of basin footprint, spillway, outfall structure and outlet protection.
 - C. Spillway dimensions and elevations.
 - (1) Riser shape and elevations (crest and bottom).

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- (2) Orifice shape, dimensions, and elevations.
 - (3) Weir shape, dimensions, and elevations.
 - (4) Barrel shape, dimensions, and elevations (inlet and outlet).
 - (5) Emergency spillway shape, dimensions, and elevations.
- D. Baffle location, shape and dimensions.
2. **Infiltration, Bioretention, and Filtering Practices.** These facilities require a construction record survey which shall include:
- A. Finished elevations including pretreatment areas, filter bed surface, berm and earthen spillway.
 - B. Horizontal location of observation wells, cleanouts, spillways and outfall.
 - C. Types of outlet and overflow structures, shape and elevations (crest and bottom).
 - D. Pipe barrel shape, dimensions, and elevations (inlet and outlet).
 - E. Underdrain pipe shape, size and invert elevations.
 - F. Underground storage structure type, shape, dimensions, and elevations.
3. **Manufactured Treatment Devices (MTDs) and Permeable Pavement.** Manufacturer's shop drawings shall be provided for all manufactured components of MTDs and Permeable Pavement. A statement for planting in conformance with the Plans shall be included. MTDs require a construction record survey which shall include:
- A. Horizontal location of the facility and outfall.
 - B. Horizontal location of observation wells and cleanouts.
 - C. Rim and invert elevations of associated structures or access location.

V. **Measurement and Payment**

Construction Record Documents for permanent SWMF will be paid for at the Contract lump sum price. This price shall include performing the work described herein on all SWMF's shown on the Plans.

Payment will not be made until the Contractor provides the Engineer with CRDs, signed and sealed by a Licensed Professional, and they are accepted by the Engineer.

Payment will be made under:

Pay Item	Pay Unit
Construction Record Documents	Lump Sum

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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_DBE_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.

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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 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 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.

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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:

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- 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 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;

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- 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;
- 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.

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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 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:

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- (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, 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.

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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 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.

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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 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.

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(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 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.

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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.

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.

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- (2) The projected date that the Contractor shall require a substitution or replacement DBE to commence work if consent is granted to the request.
 - (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.

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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.

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.

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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.

		Value of Trans. Serv.
<u>Firm X</u>		
Truck 1	Owned by DBE	\$100 per day
Truck 2	Owned by DBE	\$100 per day
<u>Firm Y</u>		
Truck 1	Leased from DBE	\$110 per day
Truck 2	Leased from DBE	\$110 per day
<u>Firm Z</u>		
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
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.

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- 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
 - 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:

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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 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 it's 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.

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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 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 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.

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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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.

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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 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 III 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.

1. **Scheduling Conference** – 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 one hundred and twenty (120) days; as well as project specific requirements and other key issues that will impact the progress schedule or are necessary for the preparation, maintenance, and submittal of the progress schedule.
2. **Project Scheduler** – For projects with awarded Contract Amount of \$100 million or more, the Contractor shall designate a Project Scheduler for the project and shall submit his/her qualifications for the Engineer's written approval prior to submission of the Preliminary or Baseline Schedule. The Project Scheduler must have at least three (3) years of verifiable experience in successfully preparing and maintaining schedules on large scale projects of similar type and complexity. The Contractor shall provide current contacts for verification of the Project Scheduler's qualifications and experience. The Project Scheduler shall be primarily responsible for the development and maintenance of the project schedule and shall be present in all scheduling meetings and discussions on major issues concerning the project 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:

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- 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 one-hundred and twenty (120) 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 one hundred and twenty (120) 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.

- 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 one-hundred and twenty (120) 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 sixty (60) 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 submission and Data Date 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.

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- (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) Mark the "Drive activity dates by default" checkbox in the Project Details Resources tab.
 - (f) Unmark the "Resources can be assigned to the same activity more than once" checkbox in the Project Details Resources tab.
 - (g) Mark the "Link Budget and At Completion Cost for not started activities" checkbox and specify "Reset Remaining Duration and Units to Original" in the Project Details Calculation tab.
 - (h) Specify "Subtract Actual from At Completion" in the Project Details Calculation tab.
 - (i) Mark the "Recalculate Actual Units and Cost when duration % complete changes" checkbox in the Project Details Calculation tab.
 - (j) Mark the "Update units when costs change on resource assignments" checkbox in the Project Details Calculation tab.
 - (k) Mark the "Link actual to date and actual this period units and cost" checkbox in the Project Details Calculation tab.
 - (l) Activity Unit of Time Duration Format shall be set to "Day", with no decimals.
 - (m) Activity Date Format shall be set to "MM-DD-YY" (e.g., 03-01-21) 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.

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- (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., 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.

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- (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 normal adverse 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 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:

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- (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) **Cost Loading:** Each activity associated with a bid item for which the Contractor expects to receive payment shall be cost-loaded, using the scheduling software “Resources” feature and according to the following:
- (a) A Project parent resource shall be created under which all resources created for the Project shall be nested. The Resource ID for the Project parent resource shall match the Contract ID (e.g., C000XXXXXXX) and the Resource Name shall match the Project Description as shown in the Contract.
 - (b) For projects with awarded Contract Amount of \$100 million or more, a “Cost” parent resource shall be created under the Project parent resource using the Material resource type, under which the individual Bid Item resources created for the Project will be nested. The Resource ID for the parent Cost resource shall be unique and defined using the Contract ID as a prefix (e.g., C000XXXXXXX.Cost). The Resource Name shall be defined as “Project Bid Item Resources”.
 - (c) Project-specific “Bid Item” resources shall be defined for each bid item as shown in the Contract, using the Material resource type. Each bid item resource shall indicate the Item Code, Item Description, Unit of Measure, and Unit Price as shown in the Contract Schedule of Items. The Resource ID for each bid item shall be unique and shall include the Contract ID as a prefix followed by the Item Code (e.g., C000XXXXXXX.00100). The Resource Name shall match the corresponding Item Description (e.g., Mobilization).
 - (d) Project-specific “Commodity” resource codes shall be defined and assigned to bid item resources associated with the top three (3) to six (6) major operations that are expected to drive the schedule, as mutually agreed upon by the Contractor and the Engineer. The Commodity resource codes shall be defined using the Contract ID as a prefix including as applicable, Earthwork (EW), Drainage Pipe (DP), Aggregate Base (AB), Asphalt Paving (AP), Pile Driving (PD), Substructure Concrete (SC), Structural Steel (SS), Deck Concrete (DC), Precast Units (PU), etc.
 - (e) Each bid item resource shall be assigned a Project-specific resource calendar using the Contract ID as a prefix (e.g., C000XXXXXXX.5-Day Resource).
 - (f) The Default Units/Time shall be defined for each bid item resource associated with major operations that are expected to drive the schedule to establish the anticipated daily production output. The Default Units/Time shall be congruent with the information provided in the narrative.
 - (g) The Max Units/Time shall be defined for each bid item resource associated with major operations that are expected to drive the schedule to establish the anticipated maximum daily production output.

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- (h) The “Auto Compute Actuals” and “Calculate costs from units” boxes for each bid item resource shall be marked.
 - (i) The budgeted units and cost for each assigned bid item resource shall be defined to indicate the quantity and dollar value of work that the activity represents.
 - (j) The aggregate budgeted units and costs for all activities associated with a bid item shall equal the total quantity and amount of the bid item as shown in the Schedule of Items.
 - (k) The aggregate budgeted costs for all activities shall equal the Contract Amount, which shall include the original Contract Amount and any approved adjustments for authorized changes to the Work. Anticipated or actual payments for adjustments such as asphalt, fuel, steel, retainage, incentives, disincentives, etc., shall not be included in the Project Schedule.
- (12) Resource Loading: For projects with awarded Contract Amount of \$100 million or more, the Baseline Schedule shall be resource-loaded to indicate the labor (manpower), material (re-usable materials), and equipment (machinery or equipment) required to accomplish each activity that represents a major operation expected to drive the schedule. The Baseline Schedule shall be resource-loaded according to the following:
- (a) A “Labor” parent resource shall be created under the Project resource using the Labor resource type, under which all individual manpower resources created for the Project will be nested. The Resource ID for the Labor parent resource shall be unique and defined using the Contract ID as a prefix (e.g., C000XXXXXXXX.Lab). The Resource Name shall be defined as “Project Labor Resources”.
 - (b) A “Material” parent resource shall be created under the Project resource using the Material resource type, under which all individual re-useable material resources created for the Project will be nested. The Resource ID for the Material parent resource shall be unique and defined using the Contract ID as a prefix (e.g., C000XXXXXXXX. Mat). The Resource Name shall be defined as “Project Material Resources”.
 - (c) An “Equipment” parent resource shall be created under the Project resource using the Non-labor resource type, under which all individual equipment resources created for the Project will be nested. The Resource ID for the Equipment parent resource shall be unique and defined using the Contract ID as a prefix (e.g., C000XXXXXXXX. Equip). The Resource Name shall be defined as “Project Equipment Resources”.
 - (d) Project-specific “Labor” resources using Labor resource type shall be defined and assigned to major operations that are expected to drive the schedule to indicate the labor classification, trade, or crew that will perform the work. The Resource ID for each Labor resource shall be unique and shall be defined using the Contract ID as a prefix followed by a unique code and the Resource Name shall describe the Labor resource (e.g., C000XXXXXXXX.Pipe – Drainage Pipe Crew).
 - (e) Project-specific “Material” resources using Material resource type shall be defined and assigned to major operations that are expected to drive the schedule to indicate the major re-usable material that will be used to perform the work. The Resource ID for each Material resource shall be unique and shall be defined using the Contract ID as a prefix followed by a unique code and the Resource Name shall describe the Material resource (e.g., C000XXXXXXXX.CF1 – Column Forms Set #1).

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- (f) Project-specific "Equipment" resources using Non-Labor resource type shall be defined and assigned to major operations that are expected to drive the schedule to indicate the major equipment or machinery that will be used to perform the work. The Resource ID for each Equipment resource shall be unique and shall be defined using the Contract ID as a prefix followed by a unique code and the Resource Name shall describe the Equipment resource (e.g., C000XXXXXXX.CRN80T – 80 Ton Crane).
 - (g) Each Labor, Material, and Equipment resource shall be assigned a Project-specific resource calendar using the Contract ID as a prefix (e.g., C000XXXXXXX.5-Day).
 - (h) The Max Units/Time shall be defined for each Labor, Material, and Equipment resource to establish the daily availability limits.
 - (i) The "Auto Compute Actuals" checkbox for each Labor, Material, and Equipment resource shall be marked.
 - (j) Budgeted Units shall be defined for each Labor, Material, and Equipment resource assignment to establish the total units of time required to perform the activity.
- (13) Primavera P6 Software Schedule Options Settings: The Contractor shall calculate the Project Schedule (e.g., 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.
 - (f) Specify 'Finish Float = Late Finish – Early Finish' to compute Total Float.
 - (g) Specify 'Predecessor Activity Calendar' as the calendar for scheduling relationship lags.
- (14) 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.

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- 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 weather conditions; as well as seasonal or other known or specified restrictions (i.e. traffic, local events, environmental, permits, utility, etc.).
 - (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 cost-loading and anticipated monthly earnings for the entire Project. The Baseline Progress Earnings Schedule submission shall include:

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- (1) An Activity Cost-loading Report (ACR) generated from the Baseline Schedule, showing a breakdown of the bid item quantity and cost assignments for each activity. The ACR shall be grouped by Bid Item resource showing:
 - (a) For each activity the Activity ID, Activity Name, Price/Unit, Budgeted Unit (quantity), Budgeted Cost, Actual Cost, Remaining Cost, and At Completion Cost.
 - (b) Sub-totals for each Bid Item resource and overall Totals for the Project.
- (2) A Progress Earnings Schedule prepared using the VDOT Form C-13CPM and monthly cost data generated from the Baseline Schedule and as follows:
 - (a) The Controls Chart Data form shall show the current Completion Date and Contract Amount and Actual Monthly Earnings.
 - (b) The "Baseline Monthly Cost Data" and the "Current Update Monthly Cost Data" in the Earnings Data Input form shall be the same and based on the monthly cost data generated from the Baseline Schedule.
 - (c) The Actual Monthly Earnings in the Controls Chart Data form shall be updated to show the total actual earnings for each pay estimate.

D. Baseline Schedule Commodity Report – A Baseline Schedule Commodity Report showing the units-loading and anticipated monthly production output for each major operation expected to drive the schedule. The Baseline Schedule Commodity Report shall include:

- (1) A Commodity Loading Report (CLR) generated from the Baseline Schedule, showing a breakdown of the bid item quantity assignments for each associated activity. The CLR shall be grouped by Commodity resource code showing:
 - (a) For each activity the Activity ID, Activity Name, Original Duration, Budgeted Unit, Budgeted Unit/Time, Actual Duration, Actual Unit, Unit % Complete, Remaining Duration, Remaining Unit, Remaining Unit/Time, At Completion Duration, At Completion Unit, Default Unit/Time, and Max Unit/Time.
 - (b) Sub-totals for each Commodity.
- (2) A Commodity Progress Report (CPR) prepared using the VDOT Form C-13CPR and monthly units data generated from the Baseline Schedule showing for each estimate date and for each commodity:
 - (a) Monthly and cumulative planned units by early dates and late dates; and the monthly and cumulative actual units.
 - (b) Progress S-curves for the monthly cumulative planned units percentage by early and late dates and the monthly cumulative actual units percentage.

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:

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- 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 Update Schedule version (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.
 - (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 Budgeted Units and Budgeted Cost for approved changes to the Contract shall be incorporated accordingly to reflect the Contract Amount. The Actual Units and Actual Cost for each Bid Item resource assignment shall be updated to match the total quantity of work paid to date for each bid item as shown in the corresponding payment estimate. Anticipated payments or payments for adjustments such as asphalt, fuel, steel, retainage, incentives, disincentives, etc., shall not be included in the Project Schedule.
 - (7) For Resource loaded schedules, the Remaining Units or At Completion Units for each assignment shall be updated accordingly, to reflect the resource requirements for the remaining work.
 - (8) 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.

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- (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, and 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 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 and submitted according to Section II.2.C above, except the “Current Update Monthly Cost Data” in the Earnings Data Input worksheet of VDOT Form C-13CPM shall be based on the monthly cost data generated from the current Update Schedule.
- D. **Update Schedule Commodity Report** – An Update Schedule Commodity Report showing the monthly production output status and anticipated production for each major operation expected to drive the schedule. The Update Schedule Commodity Report shall be prepared according to Section II.2.D above, except the updated units data shall be based on the current Update Schedule.

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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.

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) (C000XXXXXXXX_U06RB, C000XXXXXXXX_U20RB, etc.).
 - (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.

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- (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 Budgeted Units and Budgeted Cost for approved changes to the Contract shall be incorporated accordingly to reflect the Contract Amount. The Actual Units and Actual Cost for each Bid Item resource assignment shall be updated to match the total quantity of work paid to date for each bid item as shown in the corresponding payment estimate. Anticipated payments or payments for adjustments such as asphalt, fuel, steel, retainage, incentives, disincentives, etc., shall not be included in the Project Schedule.
 - (7) For Resource loaded schedules, the Remaining Units or At Completion Units for each assignment shall be updated accordingly, to reflect the resource requirements for the remaining work.
 - (8) 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 Work. The Revised Baseline Progress Earnings Schedule shall be prepared and submitted according to Section II.2.C above, except the updated/revised cost data shall be based on the Revised Baseline Schedule.
- D. Revised Baseline Schedule Commodity Report** – A Revised Baseline Schedule Commodity Report showing the monthly production output status and anticipated production for each major operation expected to drive the schedule. The Revised Baseline Schedule Commodity Report shall be prepared according to Section II.2.D above, except the updated/revised units data shall be based on the Revised Baseline Schedule.
- 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.

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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:

- 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., C000XXXXXXX), version of Progress Schedule (e.g., PS1, BS, BSR1, U01, U04RB), type of submission (e.g., Preliminary Schedule, Baseline Schedule Narrative, Form C-13CPM), and Data Date of the submission. For example: C000XXXXXXX_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.

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- (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").
- (6) A copy of the "Activity Cost-loading Report (ACR)" in ".pdf" file format.
- (7) A copy of the "Commodity Loading Report (CLR)" in ".pdf" file format.
- (8) A copy of the "Activity Resource-loading Report (ARR)" in ".pdf" file format, as applicable.
- 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-13CPM)" in ".xlsm" file format.
 - (2) Copies of the "Monthly Progress Earnings Schedule" and "S-Curve" in ".pdf" file format.
- F. **Commodity Progress Report (CPR)** – For each submission of the Project Schedule, the Contractor shall submit a Commodity Progress Report (CPR) as follows:
 - (1) A copy of the "Commodity Progress Report (Form C-13CPR)" in ".xlsm" file format.
 - (2) A copy of the "Commodity Progress Report (CPR)" and "S-Curves" 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 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.

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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.

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.

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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.
- (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.

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- (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 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 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.

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- 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 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 work planned for the upcoming four (4) weeks; and work by the Department and others or 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 Four-Week Look-Ahead (FWLA) Schedule to the Engineer. The FWLA Schedule shall depict in a greater level of detail, the daily operations, showing actual dates for work performed since the last FWLA Schedule submission and planned dates for work to be performed in the upcoming four (4) weeks. The daily operations included in the FWLA Schedule shall specifically reference the applicable Activity IDs in the Project Schedule. The FWLA Schedule may be prepared using a computer software or by hand.

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- 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, on-going work, and work planned for the following sixty (60) days; and 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 total earnings percentage for Work completed to date, based on the current estimate, falls behind the cumulative late date earnings percentage relative to the SOR.
- (2) A Contract milestone or the Project Completion Date is currently projected to complete more than thirty (30) 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.

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:

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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

$$B = \$0.2816$$

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

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

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

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

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CONTRACT ID. NO.: C0000107937C01

SP109-000130-00

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
USE OF ELECTRONICALLY TRANSMITTED WEIGH TICKETS

October 10, 2019

SECTION 109 – MEASUREMENT AND PAYMENT of the Specifications is amended as follows:

Section 109.01(b) Measurement by Weight is replaced with the following:

Measurement by Weight: Materials that are measured or proportioned by weight shall be weighted on accurate scales as specified in this Section. When material is paid for on a tonnage basis, personnel performing the weighing shall be certified by the Department and shall be bonded to the Commonwealth of Virginia in the amount of \$10,000 for the faithful observance and performance of the duties of the weighperson required herein. The bond shall be executed on a form having the exact wording as the Weighpersons Surety Bond Form furnished by the Department and shall be submitted to the Department prior to the furnishing of the tonnage material.

Trucks used to haul material shall be equipped with a cover suitable to protect the material and to protect the traveling public. The truck tare to be used in the weighing operation shall be the weight of the empty truck determined with full tanks of fuel and the operator seated in the cab. The tare weight of trucks shall be recorded to the nearest 20 pounds. At the option of the Contractor, a new tare may be determined for each load. When a new tare is obtained for each load, the requirement for full tanks of fuel will be waived.

Net rail shipment weights may be used for pay quantities when evidenced by railroad bills of lading. However, such weights will not be accepted for pay quantities of materials that subsequently pass through a stationary mixing plant.

Scales shall conform to the requirements for accuracy and sensitivity as set forth in the NIST Handbook No. 44 for Specification Tolerances and Requirements for Commercial and Weighing Devices. Scales used in the weighing of materials paid for on a tonnage basis shall be approved and sealed in accordance with the requirements of the policies of the Bureau of Weights and Measures of the Department of Agriculture and Consumer Services, or other approved agencies, at least once every six months and upon being moved. Hopper and truck scales shall be serviced and tested by a scale service representative at least once every six months. Hopper scales shall be checked with a minimum 500 pounds of test weights and truck scales shall be checked with a minimum 20,000 pounds of test weights.

Copies of scale test reports shall be maintained on file at the scale location for at least 18 months, and copies of all scale service representative test reports shall be forwarded to the Department.

The quantity of materials paid for on a tonnage basis shall be determined on scales equipped with an automatic printer. Truck scale printers shall print the net weight and either the gross or tare weight of each load. Hopper scale printers shall print the net weight of each load. The weigh ticket shall also show the legal gross weight for material weighed on truck scales and the legal net weight for material weighed on hopper scales. As a substitute for printed tickets, electronic tickets may be provided. Electronic ticketing systems shall record and show all the same information required on a printed ticket and meet the requirements herein.

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If the automatic printer becomes inoperative, the weighing operation may continue for 48 hours provided satisfactory visual verification of weights can be made. The written permission of the District Materials Engineer shall be required for the operation of scales after 48 hours.

If significant discrepancies are discovered in the printed or electronically recorded and displayed weight, the ultimate weight for payment will be calculated on volume measurements of the materials in place and unit weights determined by the Engineer or by other methods deemed appropriate to protect the interests of the Commonwealth.

1. **Duties of the Weighperson.** The weighperson shall furnish a signed weigh ticket or electronic ticket for each load that shows the date, load number, plant name, size and type of material, project number, schedule or purchase order number, and the weights specified herein; maintain sufficient documentation so that the accumulative tonnage and distribution of each lot of material, by Contract, can be readily identified; and submit by the end of the next working day a summary of the number of loads and total weights for each type of material by Contract.
2. **Electronic ticketing system.** Electronic tickets may be provided as a substitute for weigh tickets at no additional cost to the Department. Electronic Tickets shall be automatically generated using a combined software and hardware fleet management or electronic ticketing system. This system shall be fully integrated with the Contractor's Load Read-Out scale system used to weigh the material being placed.

The system must be accessible to all engineering and inspection staff involved in the project via a mobile device (iOS or android) and a desktop computer.

In addition to the information required for printed weigh tickets, the system must provide the following information to the Engineer at any point in time during or after materials placement:

- Description of material being transported
- Mix Design Number or VDOT Material Identifier
- Unique Truck ID
- Time at Scale
- Time at Destination
- Time offloaded from vehicle
- Location (latitude and longitude in decimal degrees to nearest 0.0000001) where material was offloaded from truck.

If the supplier chooses to utilize the electronic ticket option, the system must allow individual tickets and daily summaries to be exported as Portable Document Format (PDF) files conforming to ISO 32000.

The system software and hardware shall be designed in such a way that data inputs from scales cannot be altered by the Contractor or the Department.

Delays due to poor GPS satellite reception, loss of cellular coverage, or any other technical or mechanical issues with an electronic ticketing system software, hardware, or other components will not be considered entitlement to any form of adjustment or time extension. The Engineer may reject material at any time if electronic tickets become unavailable or fail to provide appropriate and correctly formatted information at the time the ticket is transmitted. The Contractor, at his discretion, may provide printed tickets in place of electronic tickets, provided they comply with the requirements herein.

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CONTRACT ID. NO.: C0000107937C01

SP302-000120-00

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
JACK AND BORE

October 27, 2016

I. DESCRIPTION

The work covered by this section consists of providing all labor, materials, and equipment, and performing all operations required for installing the specified diameters of culvert or utility casing pipe by the jack and bore method in accordance with the requirements of the Contract documents at the locations, alignments and grades shown on the plans. This work shall also include the removal of obstructions, if encountered, in a controlled manner while maintaining face stability and avoiding loss of ground. This special provision supplements Section 302.03(a)1 of the current VDOT Road and Bridge Specifications.

Prior to bidding, the Contractor shall visit and examine the work site and all conditions thereon and take into consideration all such conditions that may affect this work. Subsurface data for the project is available for review at the District Materials Office.

II. QUALIFICATIONS

The Contractor shall be experienced in jack and bore operations and have completed a minimum of five jack and bore projects in similar ground and groundwater conditions with similar cover conditions using similar size, type, and length of pipes to be installed on this project within the last three years.

The Contractor shall furnish to the Engineer a listing of the required information including contact personnel and their current phone numbers. The Contractor shall furnish the name and experience record of the field supervisor who will be in daily responsible charge of the jack and bore operation as well as the operator for each shift. The field supervisor will be present at all times when the work is being progressed. Qualified work crew personnel shall each have a minimum of three years' experience with jack and bore equipment similar to that proposed for this project and in similar ground and cover conditions.

III. SUBMITTALS

The Contractor shall submit five copies of the following material to the Engineer for review and acceptance at least 30 calendar days prior to beginning jack and bore construction:

1. Shop drawings and narratives describing proposed pipe jack and bore means and methods including the following: equipment, equipment layout, procedures, sequence and production schedule. For boring equipment, show design, dimensions, method of operation, and steering control capability.
2. Description of proposed line and grade control methods.
3. Proposed procedures, materials, and equipment for lubricating the exterior of the pipe during jacking.
4. Proposed procedures, materials, and equipment for removing, clearing or otherwise making it possible to advance past obstructions.

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5. Proposed procedures, materials, and equipment to fill voids outside of the pipe created or detected during the advance of the pipe.
6. Calculations, prepared and stamped by a Registered Professional Engineer licensed in the Commonwealth of Virginia, that demonstrate the pipe to be jacked has been designed to support the maximum anticipated earth loads and superimposed live loads, including but not limited to jacking loads, that may be imposed on the pipe during and after construction. The Contractor shall determine the additional stresses imposed on the pipe during jacking operations and upgrade the quality and strength of the pipe and pipe joints to the extent necessary to withstand the additional stresses imposed by the jacking operation or change his methodology to account for additional loads and stresses.
7. Blank daily log of jack and bore progress, to be completed within 8 hours of the completion of each shift to document the jack and bore work accomplished, the amount of excavated soil, and the results of ground surface survey monitoring.
8. Description of method to remove and dispose of spoil.
9. Estimate of anticipated jacking loads.
10. Pit dimensions, locations, surface construction, profile, depth, method of excavation, shoring bracing and thrust block design, including drawings and complete calculations.
11. Plan for flood protection and dewatering of pits and tunnel structures during construction.
12. Verification that the pipe complies with applicable contract requirements.
13. Condition survey (photographs and ground survey) of existing surface conditions along the planned pipe alignments. Photographs at 100% coverage. Minimum ground survey at edges of pavement and centerline of each travel direction (along pipe alignment), and at pipe centerline and 10-foot offsets (perpendicular to pipe alignment).
14. A detailed plan for monitoring ground surface movement due to the jack and bore operation. The plan shall address the method and frequency of survey measurement. At a minimum, the plan shall include taking measurements of ground movements of all structures, roadways, and any other areas of concern within at least 25 feet on both sides of all jack and bore pipelines at a maximum spacing of 100 feet along the jack and bore route or as otherwise required by the Engineer. The Contractor shall submit initial survey readings prior to start of jack and bore operations. The plan shall include survey readings of surface monitoring points daily during active boring operations. Subsequent readings shall be performed a minimum of one week, two weeks, and four weeks after completion of jack and bore operations and at project completion.
15. Contingency plans for review and acceptance for the following potential conditions: Damage to the pipeline structural integrity and repair, loss and return to line and grade, and loss of ground.
16. Contingency plan also required for encountering obstructions. Details of proposed means and methods for obstruction removal are required along the alignment with consideration of possible constraints on surface access, including but not limited to the use of recovery shafts. Recovery shafts shall be constructed in accordance with submittals approved by the Engineer.

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17. Verification that procedures meet all applicable OSHA requirements. These procedures shall be submitted for record purposes only and will not be subject to approval by the Engineer. As a minimum, the following should be included: Protection against soil instability and ground water inflow; safety for shaft access and exit; protection against mechanical and hydraulic equipment operations and for lifting and hoisting equipment and material; ventilation and lighting; monitoring for hazardous gases; protection against flooding and means for emergency evacuation; protection of shaft; emergency protection equipment; and safety supervisory responsibilities.
18. As-built plans of all jack and bore elements within 30 calendar days of project completion. As-built plans shall include details of the installed pipes, temporary works, permanent structures, backfill materials, post-construction surveys, construction photographs, descriptions of problems encountered, and corrective procedures implemented.

IV. EQUIPMENT AND MATERIALS

1. Pipe shall meet the following minimum requirements:
 - A. For culvert installations, the pipe shall be made of reinforced concrete in accordance with ASTM C76. For utility installations, the pipe shall be made of steel (ASTM A139), 0.5 inches minimum wall thickness, shall be round, with a smooth, even outer surface and shall have joints that allow for easy butt-welded connections between pipe sections. Other pipe types may only be used if approved by the Engineer.
 - B. Pipe ends shall be square and smooth so that the jacking loads are evenly distributed around the entire pipe joint to minimize point loads when the pipe is jacked.
 - C. The pipe shall be capable of withstanding the jacking forces that will be imposed by the process of installation.
 - D. The driving ends of the pipe and intermediate joints shall be protected against damage.
 - E. The detailed method proposed to cushion and distribute the jacking forces shall be submitted to the Engineer for review and acceptance.
 - F. Any pipe showing signs of failure shall be jacked through to the reception shaft, removed and replaced at no additional cost to the Engineer.
 - G. The pipe manufacturer's design jacking loads shall not be exceeded during the installation process. The pipe shall be designed to withstand all temporary installation loads.
2. Jacking equipment shall meet the following minimum requirements:
 - A. The thrust blocks shall be designed to transfer jacking loads into the soil and support the maximum pressure developed by the main jacking system with a minimum factor of safety of 2.5. The thrust blocks shall be perpendicular to the pipe alignment. Special care shall be taken when setting the pipe guide rails in the jacking pit to ensure correctness of the alignment, grade, and stability. If concrete thrust blocks or a treated soil zone are utilized to transfer jacking loads into the soil, the casing shall not be jacked until the concrete or treated soil have attained the required design strength.
 - B. The jacking head shall be suitable to protect the pipe from damage due to the thrust from the jacks, and to transfer that thrust from the jack to the pipe.

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- C. The jacking frame, upon which the pipe being jacked will rest, shall be of railroad rails or other suitable steel or wooden members set to the correct line and grade to act as guides for true alignment of the pipe.
- D. The main jacking equipment installed shall have a jacking capacity that is at least 150% of the maximum calculated allowable jacking load required to install the pipe.
- E. The jacking apparatus shall be strongly constructed, and set and maintained in proper relative position and alignment, in order to minimize forces that would tend to bend the pipe, cause it to deflect from true alignment, or displace the reaction blocks.

V. EXECUTION

1. Jacking and Receiving Pits shall meet the following minimum requirements:
 - A. The jacking and receiving pits shall be of adequate size to accommodate the boring machine, jacking head, frame, jacks, reaction blocks, added section of pipe, and other material and equipment, and to provide sufficient and safe working space. Pits shall be located as shown on the plans. The Contractor may provide additional pits to better suit the capabilities of the jack and bore equipment only with written approval of the Engineer. Any request for changes in the location or addition of shafts shall be submitted in writing. The cost of additional access shafts constructed for the Contractor's convenience will be considered incidental to the bid price.
 - B. The Contractor shall choose the excavation support system used. The Contractor shall be responsible for the design of the system. The design of pits shall ensure safe boring machine exit from the jacking pit and entry into the receiving pit. The Contractor shall furnish and install equipment to keep the jacking pit free of excess water. The Contractor shall also provide surface protection during the period of construction to ensure that surface runoff does not enter the pits.
 - C. All pits shall be backfilled in accordance with Section 303 of the Specifications. All shoring materials, bracing, temporary supports, rubbish, and construction materials shall be removed from the job site and disposed of upon completion of jack and bore operations.
2. Pipe installation shall be addressed as follows:
 - A. Bracing and backstops shall be so designed and jacks shall be of sufficient rating so that the jacking can progress without stoppage, except for adding lengths of pipe.
 - B. The use of water or other liquids to facilitate spoil removal is prohibited.
 - C. If voids are created or detected outside the pipe during the advance of the pipe, the Contractor shall fill the voids in accordance with the plan submitted per Section III.5.
 - D. If an obstruction is encountered during the advance of the pipe, the Contractor shall remove the obstruction in accordance with the contingency plan submitted per section III.16.
3. Tolerances shall be as follows:
 - A. The Contractor shall install the jack and bored pipe to within 2 inches vertically and 6 inches horizontally of the alignment shown on the plans. The installed pipe gradient shall not be less than the gradient shown on the plans.

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- B. Minimum pipe cover shall be 5 feet or three times the pipe outside diameter, whichever is greater, unless specified otherwise in the contract documents.
- C. If the jacked pipe is out of alignment by an amount that requires redesign or reconstruction of the pipe or associated structures, the Contractor shall do so at no additional cost to the Engineer.
- D. Contractor shall carry out operations to minimize settlement and heave of the ground and shall be responsible for damage due to settlement or heave from any construction induced activities. In the event of movement of the ground surface, structure or utility in excess of 0.5 inch being detected, or damage being recorded, the Engineer may order that the work be stopped and secured. Before proceeding, the Contractor shall correct any problems causing or resulting from such movement entirely at its own cost. If ground settlement or heave occurs which might affect the accuracy of temporary or permanent benchmarks, it is the Contractor's responsibility to monitor and report such movement to the Engineer.
- E. Unless otherwise noted in the Contract Documents, settlement or heave at the ground surface during and after construction shall not exceed 0.5 inch within 25 feet laterally on either side of the centerline of the pipe alignment.

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SP307-000100-01

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
CEMENT TREATED AGGREGATE (CTA) BASE

June 18, 2020

I. Description

This work shall consist of constructing a base course of the pavement structure using a plant mixture of approved aggregates, hydraulic cement, and water on a prepared surface in accordance with the requirements of this Special Provision and in conformity with the lines, grades, typical sections, and cross sections shown on the Plans or as directed by the Engineer.

II. Materials

1. **Cement** shall conform to the requirements of Section 214, Type I, IL, IP, or II. Cement shall be transported, stored, and otherwise protected in accordance with the requirements of Section 217.03 of the Specifications.
2. **Water** shall conform to the requirements of Section 216 of the Specifications.
3. **Asphalt** used for curing or priming shall conform to the requirements of Emulsified Asphalt in Section 210 of the Specifications.
4. **Aggregate** shall conform to Section 208 of the Specification or other Contract requirements. Aggregate Base, Type 1, Size No. 21A shall be used conforming to the following requirements:
 - A. **Optimum Water Content:** Material shall be delivered at a water content of not less than optimum or more than optimum plus 2 percentage points determined by AASHTO T 134, Method B.
 - B. **Compressive Strength:** Tests for compressive strength shall be performed in accordance with the requirements of ASTM D1633, Method A for conformance to the specified value (a 7-day compressive strength of 650 psi).
 - C. **Durability:** Neither the wet-dry weight loss nor the freeze-thaw weight loss shall exceed 14% in accordance with AASHTO T 135 Method B and AASHTO T 136 Method B, respectively.

III. Job-Mix Formula

If unsatisfactory results or other conditions make it necessary, the Contractor shall submit a new job-mix formula for approval. CTA shall not be delivered to the Project until the submitted job mix formula has been approved by the Engineer.

1. **Mix Design:** The job mix formula shall use a cement content that, when tested in the laboratory per ASTM D1633 Method A, produces a 7-day compressive strength of 650 psi.
2. **Submittals:** The Contractor shall submit for the Engineer's approval a proposed job-mix formula through the "Producer Lab Analysis and Information Details" (PLAID) website <https://plaid.vdot.virginia.gov> and certified test reports at least 30 calendar days before the CTA production. Tests older than 12 months shall not be used except for durability (wet-dry and freeze-thaw weight loss) tests. Test results for the durability tests will be valid for 3 years. The certification shall show the ASTM or AASHTO specifications or tests for the material, the name of the company performing the tests, the date of the tests, the test results, and a statement that the material did or did not comply with the applicable specification. The submittal package shall include the following:

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- Job Mix Identification Number
- Sources of materials (Aggregate, Cement)
- Aggregate gradation
- Target cement content with associated plot
- Compressive strength at seven days determined in accordance with ASTM D1633, Method A (Minimum three specimens per cement content)
- Laboratory compaction characteristics with associated plot (maximum dry density and optimum water content) determined in accordance with AASHTO T 134, Method B
- Wet-Dry weight loss determined in accordance with AASHTO T 135, Method B
- Freeze-Thaw weight loss determined in accordance with AASHTO T 136, Method B

Target cement content shall be determined using the following procedures:

- A. Conduct a Proctor test (AASHTO T 134, Method B) on a sample containing 4.5% cement.
- B. Prepare sets of three specimens each at 2%, 4.5%, and 7% cement and test for compressive strength in accordance with ASTM D1633, Method A. Compact all specimens to maximum dry density (± 3 pcf) and optimum water content (± 1 percentage point).
- C. Plot a compressive strength versus cement content graph using the average strength values at each cement content by connecting the points with a straight line.
- D. Select a target cement content from the graph at 650 psi. An example is shown in Figure 1. A different gradation or source shall be used if the strength of 650 psi is not reached within the 2-7% cement content range.

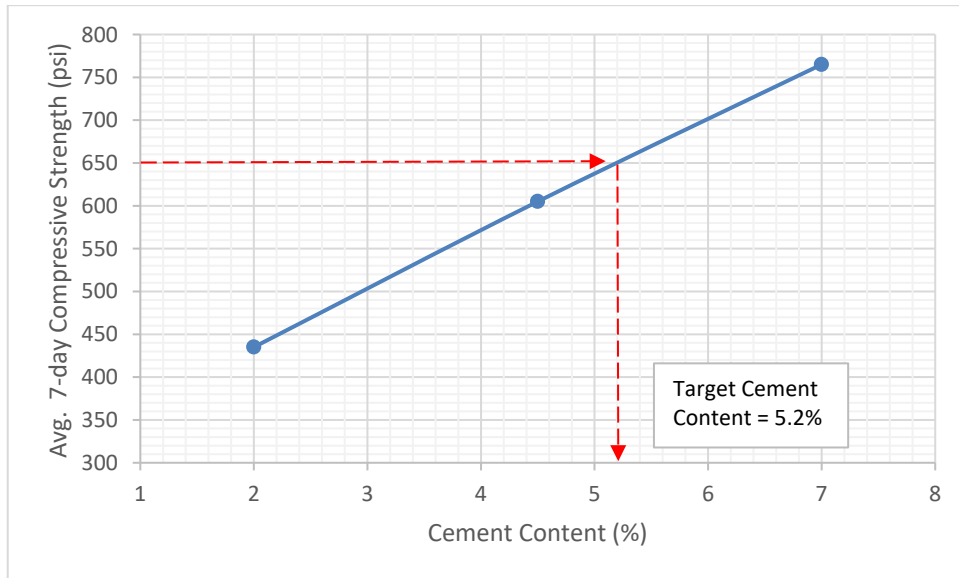


Figure 1: Example compressive strength versus cement content graph

IV. Construction Method

1. Weather Limitations

CTA shall not be placed when aggregate or the surface on which the course will be placed is frozen. The Contractor shall not start placing CTA until the air temperature is at least 40°F in the shade and rising.

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CTA shall not be placed in the rain. If unexpected rain occurs during placement, placement shall be halted, and the layer shall be quickly compacted, tested, and protected. CTA that becomes wet by rain during transport or placement shall be evaluated by the Engineer, and may be rejected.

2. Procedures

- A. **Preparing Existing Surface:** The Contractor shall prepare the surface of the roadbed in accordance with Section 305.03 of the Specifications.
- B. **Preparing Materials:** Aggregate shall be proportioned and mixed with cement and water in an approved central mixing plant. The plant shall be equipped with feeding and metering devices that will introduce materials into the mixer in the specified quantities. Mixing shall continue until a uniform mixture has been obtained.

CTA shall be transported from the plant to the job site in trucks or other hauling equipment having beds that are smooth, clean, and water-tight. Truck bed covers shall be provided and used to protect the CTA from rain or drying out. CTA shall be spread on a moistened surface (no standing water) in a uniform layer by a self-propelled spreader or other approved method. Not more than 60 minutes shall elapse between the start of mixing at the plant and the start of compacting the CTA on the prepared subgrade. Retarder may be allowed at the discretion of the Engineer.

The Contractor shall determine cement content by the titration method as described in VTM-40. Sampling and testing for determining cement content shall be performed at the plant. However, nothing herein shall be construed as waiving the requirements of Sections 106.06 and 200.02 of the Specifications. The Department may sample and prepare specimens at a plant or project at any time to verify compliance with strength requirement.

The Engineer's acceptance for cement content will be based on the mean of the results of tests performed on samples taken in a stratified random manner from each lot. The rate of sampling will be four samples per lot. A lot of material is defined as 2000 tons, or 4000 tons for Contract items in excess of 50,000 tons. If the Project requires less than 2000 tons or the job-mix formula for the aggregates is modified within a lot, then that amount shall be defined as a lot. If a portion of the lot is rejected on the basis of individual test results, the remainder shall be defined as a lot.

A lot will be considered acceptable for cement content if the mean result of the tests is within the following process tolerances of the job-mix formula for the number of tests taken. However, no one sample shall have a cement content more than 1.6 percentage points below the design cement content.

Table 1
Process Tolerances for Cement Content

No. of Tests	Tolerance
1	-1.6
2	-1.1
3	-0.9
4	-0.8

If an individual test result indicates that the cement content of the material represented by the test is deficient by more than 1.6 percentage points from the design cement content, the portion of the material represented by the sample shall be removed from the road.

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If the average value of the test results for a lot falls below the allowable process tolerance, a payment adjustment will be applied to the contract unit price at the rate of 1.0 percent for each 0.1 percent the material is outside the process tolerance. If the total adjustment is 8.0 percent or less and the Contractor does not elect to remove and replace the material, the Contract unit price paid for the material will be reduced at the rate specified herein. The adjustment will be applied to the tonnage included in the entire lot.

- C. **Compacting and Finishing:** Prior to the beginning of compaction, the CTA shall be brought to a uniformly loose condition for its full depth and compacted thoroughly. At compaction, the CTA shall have a water content of not less than optimum or more than optimum plus 2 percentage points. Compaction equipment shall be subject to the approval of the Engineer, and the number of such units shall be sufficient to ensure the specified density and completion of the processed section within 3 hours from the time the water is added to the mixture. No section shall be left undisturbed for longer than 30 minutes during the compaction operation. The compacted thickness of any one layer shall be not more than 6 inches, except that the Engineer may approve increasing the compacted depth of a single layer of the CTA course to 10 inches when vibrating or other approved types of special compacting equipment are used. In multiple layer construction, the surface of the compacted material shall be kept moist until covered with the next layer. Successive layers shall be placed and compacted so that the required total thickness of the CTA course is completed in the same shift.

The CTA base course will be tested in place for depth and density. Field density determinations shall be performed with a portable nuclear field density testing device, using a density control strip as specified in Section 304 and VTM-10 except that the density shall be a minimum 95% of the theoretical maximum dry density as determined by AASHTO T 134, Method B when direct transmission testing is performed upon the completion of the control strip to verify the compaction.

As compaction nears completion, the surface shall be shaped to the required lines, grades, and cross sections. The water content of the surface material shall be maintained at not less than the specified optimum during finishing operations. Compaction and finishing operations shall be completed within the specified time and carried out in a manner that will produce a smooth and dense surface free of ruts, cracks, ridges, and loose material. The total time (from the time water is added to the mixture at the plant to final grade) may be increased at the discretion of the Engineer if retarder is used due to longer haul times, however, the time will not be allowed to exceed 4 hours in any case.

- D. **Construction Joints:** At the end of each shift's construction, a transverse construction joint shall be formed that is a vertical face, perpendicular to the centerline, and is free of loose material.

Longitudinal construction joints (parallel to the centerline) shall be formed to a consistent, well-defined vertical edge that is free of loose material. The longitudinal joints shall be located so there is a 2-foot minimum offset from planned joints in any overlying layer.

While forming construction joints, the Contractor shall ensure the material in the joint area is adequately compacted and that the joints are finished level and even with the remainder of the CTA course.

- E. **Tolerances:** The finished CTA course shall conform to the specified thickness and density, subject to the following tolerances:

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- (1) **Density:** Density for test section shall be determined in accordance with VTM-10. Five readings shall be made on each test section for density using the same method of test used on the Roller Pattern and Control Strip. None of the five readings shall be less than 95% of the Control Strip density, and any portion on which density is less than 95% of the Control Strip density shall be removed and replaced. The Contractor has the option of re-compacting the material if the time since water was added at the plant has not exceeded 4 hours if a retarder was used or 3 hours without a retarder. The average of the five readings shall be equal to or greater than 98% of the Control Strip density. If the average density does not meet this requirement, the Contractor may elect to leave the lot in place at a reduced unit price determined in accordance with Table 2.

Table 2
Payment Schedule for Density

Average Dry Density (%)	Payment (%)
98.0 and greater	100
97.0-97.9	95
96.0-96.9	90
95.0-96.0	75

- (2) **Thickness:** Thickness will be determined in accordance with VTM-38B except that maximum lot size shall be 1 mile for each paver application width. Sample shall be taken from the lot at the following rate:

Table 3
Lot Size and No. of Samples required for Thickness

Lot size	No. of samples required
0-0.5 Mile	2
0.5-0.75 Mile	3
0.75-1 Mile	4

Acceptance of the course will be based on the requirements of Section 308.04 of the Specifications except when the depth is deficient by more than 1 inch. The Contractor shall correct sections on CTA base courses that are deficient in depth by more than 1 inch by applying asphalt concrete at their own expense if approved by the Engineer, or by removing and replacing the affected areas.

- F. **Curing:** The completed CTA course shall be cured with an emulsified asphalt seal applied as soon as possible and in no case later than 24 hours after completion of the finishing operations. The surface of the base CTA course shall be kept continuously moist using an application of water that shall not erode the CTA (e.g. a fog-type water spray or equivalent) until the emulsified asphalt is applied.

Emulsified asphalt shall be uniformly applied at the rate of approximately 0.25 gallon per square yard or as shown on the Plans. Application of the emulsified asphalt shall produce full coverage without excessive runoff. At the time the emulsified asphalt is applied, the CTA course shall be tightly knit and free from loose and extraneous material.

Should it be necessary for construction equipment or other traffic to use the emulsion-covered surface before the emulsified asphalt has cured sufficiently to prevent pickup, sufficient sand blotter cover shall be applied before such use.

The CTA course shall be protected from freezing for at least 7 days after its construction.

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G. **Traffic:** CTA course may be opened immediately to low-speed lightweight local traffic (less than 10 tons; no tandem axle or tractor trailer trucks) and to construction equipment provided the emulsified asphalt is not impaired and the CTA is sufficiently stable to withstand marring or permanent deformation (<1/4"). Construction equipment shall be limited to that used in applying emulsified asphalt and placing subsequent layers. The section can be opened to all traffic after a period of 7 days or the CTA has received a subsequent layer, and is sufficiently stable to withstand marring or permanent deformation.

H. **Surfacing:** Subsequent pavement layers (asphalt concrete or Portland cement concrete) may be placed any time after finishing, as long as the CTA is sufficiently stable to support the required construction equipment without marring or permanent distortion (<1/4") of the surface.

If a subsequent pavement layer is placed within 24 hours of the CTA placement, the CTA may be moist cured until the next pavement is placed. The emulsified asphalt seal may not need to be applied in such case.

I. **Maintenance:** Maintenance in accordance with Section 105.14(c) of the Specifications shall include immediate repairs of defects, which work shall be performed by the Contractor and repeated as often as necessary to keep the course continuously intact. Repairs to the CTA course shall be performed in a manner that will ensure the restoration of a uniform surface and stability of the area repaired. If it is necessary to replace any processed material, the replacement shall be for the full depth, with vertical cuts, using either fresh cement-treated material or concrete. No skin patches will be permitted.

V. **Measurement and Payment**

Cement-Treated Aggregate Base Material will be measured in tons and will be paid for at the Contract ton price. This price shall include furnishing and installing cement-treated aggregate; emulsified asphalt, cover material, water for curing and maintenance; and restoring shoulders and ditches when grading is not a pay item.

Payment will be made under:

Pay Item	Pay Unit
Cement Treated Aggregate Base Material	Ton

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SP315-000710-01 [formerly SP315-070100-01]

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
RIDEABILITY
(For Asphalt Concrete Pavement)

August 3, 2017

I. Description

For pavements designated in the Contract, the final ride quality acceptance will be based on the lowest average International Roughness Index (IRI) for each 0.01-mile section produced by a minimum of two test runs, using a South Dakota style road profiling device and reported for each travel lane. The device shall measure both wheelpaths with laser height sensing instruments. The Department will conduct the testing within 30 calendar days from Contractor's written request for testing following the completion of the final surface course and final pavement striping over the designated section. If temporary pavement marking is placed and the lanes are clearly delineated over the completed final surface course, the Contractor may request ride testing in writing and the Department will conduct testing within 30 calendar days from the request. The Department will conduct the testing as soon as possible upon receipt of the Contractor's testing request, providing the Contractor can arrange unimpeded access to the paved surface for constant highway speed test runs. Testing will be conducted according to VTM-106.

II. Acceptance

An IRI number in inches per mile will be established for each 0.01-mile section for each designated lane. The last 0.01-mile (52 feet) section before a bridge, the first 0.01-mile (52 feet) section after a bridge, and the beginning and end 0.01-mile (52 feet) sections of the final surface will not be subject to a pay adjustment.

Areas excluded from testing by the road profiling device will be tested using a 10-foot straightedge. 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. Humps and depressions exceeding the specified tolerance shall be subject to correction as directed by the Engineer, at no additional cost to the Department.

1. Incentive-disincentive projects

A. General

Tables A and B provide the acceptance quality of pavement based on the finished rideability for interstate and non-interstate roadways.

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TABLE A
INTERSTATE SYSTEM

IRI After Completion (Inches Per Mile)	Pay Adjustment (Percent Pavement Unit Price)
45.0 and Under	115
45.1-55.0	110
55.1-70.0	100
70.1-80.0	90
80.1-90.0	80
90.1-100.0	70
100.1-120.0	60 or Subject To Corrective Action
120.1-140.0	40 or Subject to Corrective Action
140.1-160.0	20 or Subject to Correction Action
Over 160.0	0 or Subject to Corrective Action

TABLE B
NON-INTERSTATE SYSTEM

IRI After Completion (Inches Per Mile)	Pay Adjustment (Percent Pavement Unit Price)
55.0 and Under	115
55.1-65.0	110
65.1-80.0	100
80.1-90.0	90
90.1-100.0	80
100.1-110.0	70
110.1-130.0	60 or Subject To Corrective Action
130.1-150.0	40 or Subject to Corrective Action
150.1-170.0	20 or Subject to Corrective Action
Over 170.0	0 or Subject to Corrective Action

The Engineer reserves the right to require corrective action according to Tables A and B. The method of correction shall be reviewed for approval by the Engineer and correction shall be performed at the Contractor's expense.

Corrections to the riding surface of Asphalt Concrete Pavement, other than remove-and-replace, will not be permitted prior to the Department's rideability testing. Reheating of asphalt concrete pavement will not be permitted. No incentives will be provided for sections on which corrective actions other than remove-and-replace have been performed before rideability testing.

The Engineer will be the sole determining authority on whether corrective measures submitted by the Contractor are acceptable. If the Contractor performs corrective action to the pavement without prior approval from the Engineer, no incentive payment will be made for the Asphalt Concrete Pavement within the limits where corrections were performed.

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The Engineer may require correction of any or all adjoining traffic lanes or shoulders at the Contractor's expense to ensure uniform cross section.

Where corrections are made after the initial Department rideability test, the pavement will be retested by the Department to verify that corrections have produced the acceptable ride surface. No incentives will be provided for sections on which corrective actions have been required by the Engineer. Additional corrections may be required by the Engineer based on the retested IRI measurements at the Contractor's expense. In the event the corrective actions do not result in 100 percent payment, and not subject to further corrective action, the Contractor will be assessed the corresponding percent payment.

B. Single-Lift Construction

An AC layer is defined as a material lift equal to or greater than 2.5 times the maximum nominal aggregate size for the AC mixes specified in the Contract. A material lift less than the specified application rate or less than 2.5 times the maximum nominal aggregate size for the AC mixes specified in the Contract is considered a "scratch course" and not an AC layer.

Where only one AC layer shall be placed, the Department will test pavement sites subject to this special provision prior to work by the Contractor. Upon request by the Contractor, the Department will provide the IRI testing results. If this IRI testing is conducted more than 180 calendar days prior to the scheduled beginning of the work, the Department or Contractor may request new IRI testing.

If the completed surface has IRI test results which indicate a 30 percent or more improvement in the ride quality, based on the average IRI (original surface and completed overlay) for each 0.1-mile length of each travel lane subject to this Special Provision, no corrective action will be required. This percent improvement is based on the 0.1-mile paved section average IRI and not the individual 0.01-mile increments. When the percent improvement is achieved for a 0.1-mile section, the payments (incentives, disincentives and full payment) for the individual 0.01-mile increments will be summed. The Contractor will then be paid the greater of the total adjusted payments or 100 percent for that 0.1-mile section.

This rideability specification does not relieve the Contractor from responsibility concerning workmanship according to the Specifications, other contract requirements or as defined by the Engineer.

2. Incentive Only Projects

For projects designated as "incentive only", Table C will be applied for calculating pay adjustment. A pay adjustment calculation will be made at each 0.01 mile segment and summed over each 0.1 mile. Any penalties, calculated at each 0.1 mile, will be ignored for incentive only projects. Only pay adjustment calculation producing an incentive for each 0.1 mile (if any) section will be summed to determine the total incentive over the project. Therefore, no disincentive will be assessed over the entire project. The contractor will be paid the greater of the total incentive or 100 percent payment for the project. The standard exemptions will be applied to calculate the average IRI over the lane.

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TABLE C – INCENTIVE ONLY PROJECT	
IRI After Completion (Inches Per Mile)	Pay Adjustment (Percent Pavement Unit Price)
60.0 and Under	115
60.1-70.0	110
70.1-85.0	100
85.1-95.0	90
95.1-105.0	80
105.1-115.0	70
115.1-135.0	60
135.1-155.0	40
155.1-175.0	20
Over 175.1	0

Incentive only projects will not be subject to corrective action as a result of the rideability results. Ride testing prior to paving by the Department is not required for incentive only projects. Pay adjustments will be applied to the theoretical tonnage of the surface mix asphalt material for the lane width and section length tested. This rideability specification does not relieve the Contractor from responsibility concerning workmanship according to the Specifications, other contract requirements or as defined by the Engineer.

III. Measurement and Payment

Pay adjustments will be applied to the theoretical tonnage of the surface mix asphalt material for the lane width and section length tested (generally 12 feet wide and 52.8 feet long) based on testing prior to any corrective action directed by the Engineer. For the sections where corrective action is required, pay adjustment will be based on the testing after the corrective action has been accomplished.

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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.

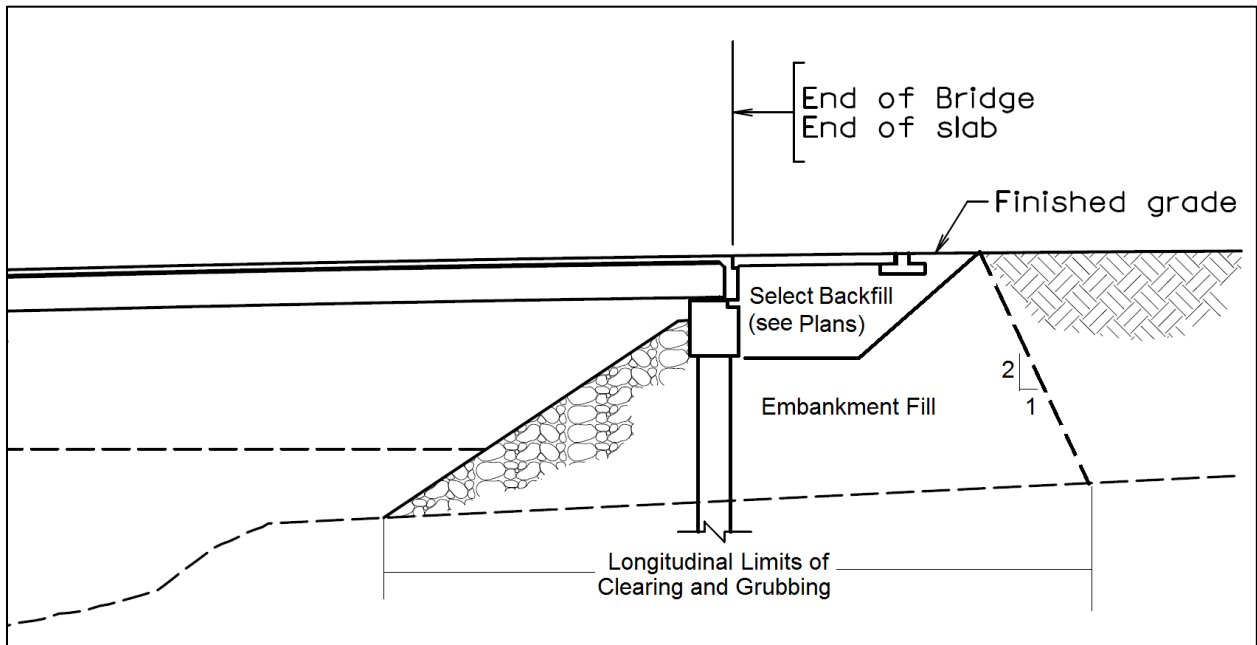


Figure 1
Limits of Clearing and Grubbing in the Vicinity of Bridge Abutments
Not to scale

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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.

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

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

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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

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.

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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 count 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

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

SP407-000500-00

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
SUPERSTRUCTURE ERECTION STABILITY

June 10, 2022

I. DESCRIPTION

This work shall consist of preparing and submitting primary member erection plans and procedures meeting the superstructure erection stability requirements herein to the Engineer for review. The Contractor remains solely responsible for: the means and methods to be used to stabilize and maintain all structural members during all stages of construction, including but not limited to transporting, storing, lifting, placing, and post-erection; and for any errors, omissions, or risks inherent in the Erection Plans and Procedures and in the supporting documentation. The Department's review of the Contractor's submittal for primary member erection plans and procedures will be limited to conformance with the Contract requirements.

The Contractor shall perform and prepare all erection engineering calculations, drawings, and documentation required to successfully erect the superstructure. Erection engineering calculations, drawings, and documentation shall be submitted in accordance with the Stability Classifications established herein, or as requested by the Engineer.

This Special Provision supplements Sections 405 and 407 of the Specifications.

II. DEFINITIONS

1. **Active Work Space** – An area, or portion thereof, where construction or erection activities are actively in progress or personnel are present.
2. **Erection** – The process including handling, shipping and assembling the bridge structural steel, prestressed concrete, or post-tensioned concrete superstructure.
3. **Erection Engineer** – A Professional Engineer retained by the Contractor to provide professional engineering services and complete calculations required herein. An Erection Engineer shall be a Professional Engineer licensed to practice engineering in the Commonwealth of Virginia.
4. **Erection Engineering Calculations** – Engineering calculations associated with the development and substantiation of the Erection Procedures.
5. **Erection Plans and Procedures** – The engineering drawings, calculations, and specifications prepared by the Erection Engineer describing the erection (e.g., the field-installation, member-placement, and temporary support) of the primary members, the specific sequence, methods, equipment, and other procedures that the Contractor plans to use in erecting the primary members.
6. **Erection Supervisor** – The person responsible for all rigging and handling of bridge members. The Erection Supervisor shall be present at the erection site during the erection of primary members.
7. **Erector** – The firm responsible for the erection of the primary members; may be self-performed by the Contractor or a subcontractor specializing in the erection of primary members.

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8. **Inactive Work Space** – An area, or portion thereof, where construction or erection activities have ceased for a period of time and personnel are not present (e.g., area vacated at the end of a work shift, overnight, or during inclement weather).
9. **Primary Member** – A steel or concrete member designed to carry the loads applied to the structure as determined from an analysis. May include a superstructure beam, girder, truss, cross-frames or diaphragms.
10. **Shoring Tower** – A structure that is used to temporarily support superstructure segments prior to those segments being made into a continuous girder.
11. **StrongBack** – A beam or girder that acts as a secondary support member to superstructure elements. The superstructure elements may not be safe during construction without the strongbacks.
12. **Temporary Support Structure** – A temporary structure that is required during shipping or erection to support or stabilize the structure, or a portion of the structure, and is removed when no longer required for structural support or stabilization. Temporary support structures may include but are not limited to strongbacks, falsework, hold cranes, tie-downs, and primary member restraints.
13. **Superstructure Unit** - Composed of all spans in a continuous portion of superstructure. Units may be continuous for live load only (e.g., prestressed concrete beams) or dead load and live load (e.g., structural steel plate girders).

III. BRIDGE STABILITY CLASSIFICATIONS

Bridge superstructure units will be classified as Stability Class SA, SB, or SC according to the following conditions:

Table III-1: Summary of Geometric Requirements

DESCRIPTION		Class SA	Class SB	Class SC
LONGEST SPAN LENGTH	CONCRETE	0' to 75'	> 75' to 135'	> 135'
	STEEL	0' to 100'	> 100' to 160'	> 160'
CURVED GIRDER	CONCRETE	N/A		
	STEEL	N/A	$L/R < 0.05$	$L/R \geq 0.05$

L = span length, bearing to bearing along the centerline (CL) of the member of the controlling span.

R = the radius of the centerline of the member.

If a bridge superstructure unit meets multiple classes, use the highest class. Class SA is lower than Class B, and Class B is lower than Class SC.

For a bridge over in-service roadways or railroads and its longest span length meets Class SA, use Class SB as the minimum stability class.

If shoring tower, strongback or falsework is required, use Class SC.

If a bridge superstructure unit is not covered in this table, the Engineer will specify the stability classification.

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IV. MEETINGS AND SUBMITTALS

1. The Erection Plans and Procedures shall describe and specify all aspects of how the structural members are to be erected, including, but not limited to, transportation and shipping, sequence of erection, methods or techniques to be used, equipment to be used, and materials to be used, along with any temporary works or other devices necessary.
 - A. The Erection Plans and Procedures shall be signed and sealed by the Erection Engineer. For Class SC, the Erection Plan and Procedures for each primary member shall be reviewed by the Fabricator prior to submittal to the Engineer for potential issues related to constructability, fabrication feasibility, and ease of shipping. The Fabricator shall provide the Contractor a summary of findings; the Contractor shall include the Fabricator's review summary, with Contractor's disposition for each comment provided, with the Erection Plans and Procedures submittal to the Department for review.
 - B. The Erection Plans and Procedures shall include, but not be limited to, the following:
 - (1) **Handling and Shipping Plan** – A handling and shipping plan shall be included for all Stability Classes SB and SC members with shipping lengths greater than 75 feet. This plan shall include the following:
 - (a) Shipping length and weight.
 - (b) Truck/rail/barge & load configuration sketches.
 - (c) Tie-down configurations and tightening process.
 - (d) Anticipated hauling routes.
 - (e) Method of shipping (e.g., truck, rail, barge, etc.).
 - (f) The following additional items shall be included with the submittal for Stability Classification SC for shipping pieces with shipping length greater than 135 feet:
 - i. Temporary support locations.
 - ii. Stability calculations demonstrating adequate and stable primary member configuration for handling and shipping to project site, accounting for but not limited to: wind, travel speed (including the values used in calculations for the transport vehicle), and the superelevation of the roadway.
 - iii. Approved mix design for beams/slabs if strength required for handling and shipping exceeds final design strength required by the Contract. In this case, the handling and shipping strength shall be identified on the working drawings. Additional test cylinders shall be planned and produced in accordance with Section 405 of the Specifications.
 - (2) **Erection Diagrams, Notes, and Documentation** - The erection diagrams, notes, and documentation shall include the following:
 - (a) Erection Sequence – For all stability classes, the Contractor shall provide an erection sequence for all primary members (including any attached secondary members).
 - i. The erection sequence shall be shown on a plan view of the bridge for each erection stage, highlighting: the structural components to be erected and their weights, centers of gravity, and splice locations; lifting crane locations for primary member picks that are necessary during the particular stage; and crane capacity charts. Member Reference Marks shall be the same as used on working drawings.

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- ii. The illustrative plan views described above shall be provided in sufficient detail. The illustrative plan included with the erection sequence shall be developed with CADD for Class SB and SC structures. In lieu of CADD drawings, scaled drawings or photocopies of the erection plans from the contract plans may be used with the Engineer's approval. For Class SA structures, the Contractor may submit a request at the time of the pre-construction conference to the Engineer to accept a hand sketch or no.
 - iii. A written narrative of the procedure to be followed by the Erector shall be submitted. The narrative shall outline items such as structural components to be erected, and the use and sequence of removal for temporary bracing, anchorage, restraints, blocking, bearing installation, etc.
- (b) Potential obstructions or restrictions for crane operations – For all stability classes, provide potential obstructions or restrictions to crane operations (e.g., existing structures, utilities, nearby airport operations, etc.).
 - (c) Crane locations, capacity charts, related site conditions – For all stability classes, provide location of each crane to be used for each primary member pick, showing the crane type, crane pick radius, crane support methods (e.g., mats, work trestles, etc.), and the means of attachments to the primary members being lifted or supported. This shall include Crane Capacity Charts or tables that demonstrate the adequacy of each crane configuration, boom length, counterweight configuration, outrigger configuration, and pick weight required. Where additional crane capacity is required by another entity (e.g., Norfolk Southern, CSXT, WMATA, etc.), submittal shall factor the pick weight required appropriately.
 - (d) Rigging detail, weight, capacity, arrangement – For Stability Classes SB and SC, provide details, weight, capacity, and arrangement of all rigging (e.g., beam clamps, lifting lugs, etc.) and all lifting devices (e.g., spreader and lifting beams) required for lifting primary members.
 - (e) Lifting weight of primary member picks – For all Stability Classes, determine all rigging and pre-attached elements (e.g., cross-frames or splice plates); provide lifting weight of primary members, including all rigging and pre-attached elements.
 - (f) Temporary lateral bracing – For Stability Classes SB when skew exceeds 45 deg. and SC, the Erection Engineer shall determine the size, spacing, and location of any temporary lateral bracing necessary to supplement permanent cross-frames for their proposed erection sequence. Adjustments may be made to satisfy the Contractor's preferred erection sequence at no additional cost to the Department (e.g., addition of any members or components, and any changes that may modify the deflections and cambering).
 - (g) Temporary devices bolted to permanent members (steel girders and trusses) – For Stability Classes SB and SC, provide details of any temporary rigging or lifting devices to be bolted to permanent members. Welding to any permanent member will not be permitted for any temporary method of attachment.
 - (h) Cross-frame/diaphragm connections (steel girders and trusses) – For Stability Classes SB and SC, provide the number and location of cross-frame or diaphragm connections which shall be made to maintain safety and stability before advancing to the next erection sequence. Include bolting requirements for bolted splice assembly and cross-frame or diaphragm connections at each stage of construction when the minimums needed exceed the minimum required by Section 407.06 of the Specifications.

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- (i) Certification documents/catalog cuts for pre-engineered devices/equipment – For Stability Class SC, provide Manufacturer’s certification documents or catalog cuts for pre-engineered devices or equipment when these items are used during erection of primary members. These items shall be subject to review by the Engineer.
- (j) Proposed removal of a field splice – where the Contractor requests the removal of a splice, the Erection Engineer shall provide calculations demonstrating that the modified primary member is structurally adequate and stable for the proposed conditions.
- (k) Blocking details for bearings – For Stability Class SC, provide blocking details for bridge bearings and necessary girder supports before and after the sole plates are welded to the girders.
- (l) Temporary tie-down/restraint device details for bearings – For Stability Class SC, provide details for temporary tie-down or restraint devices for bearings which restrict movement in the same direction as final bearing configuration due to applied loads such as wind, thermal, or construction. Load shall be transmitted to the bearings in accordance with Section 408.03(a)11 of the Specifications.
- (m) Loading Restrictions – For Stability Class SC, provide any restrictions for wind, construction, dead, and live loading. Include any other applicable loading restrictions (e.g., maximum wind speed at the time of lift when lower than indicated herein).
- (n) Temporary Support Structure Details – Provide details of temporary support structures as described herein. If the temporary support is pre-fabricated (e.g., selected from a supplier’s catalog), the type and capacity shall be defined in the Erection Plans. Lateral capacity and vertical capacity requirements shall be considered as appropriate. If the temporary support is to be constructed by the Contractor on site, a complete design with full details, including member sizes, connections, and bracing elements shall be provided. In either case, details related to how the primary members will bear on the temporary support, including elevations at the top of the falsework, shall be included.

Temporary support structure details shall also include:

- i. Foundation requirements for temporary support structures: For Stability Class SC, provide foundation requirements for temporary support structures including design of foundations and soil bearing capacities.
- ii. Strongbacks: Details and placement of strongback for shipping and timing of removal from primary member.
- iii. Hold cranes: Approximate location of hold cranes used to provide temporary support to the assembly shall be indicated along with the associated crane loads. The crane type, capacity, boom lengths, pick radius, and means of attachment to the primary members shall be indicated.
- iv. Falsework: Location of falsework used to provide temporary support to the assembly shall include working drawings in accordance with VDOT Road and Bridge Specifications 105.10(c)-2.
- v. Temporary tie-downs: Location and details for temporary tie-downs that are required to facilitate the erection, as well as the associated tie-down loads shall be indicated. The details shall include the tie-down, primary member attachment devices, and anchoring devices.

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- vi. Primary member restraints: The details shall indicate appropriate restraint of Primary members from twisting and rollover at supports. Primary members shall be restrained from twist and rollover at supports unless the need for such restraint is demonstrated to be unnecessary by appropriate analysis in the Erection Engineering Calculations.
 - vii. Release or removal of temporary support structures: The details shall indicate when, and under what conditions, any temporary support structures may be released or removed in the erection sequence, or if they may be left in place while subsequent erection proceeds.
- (o) Jacking Device Details – The Contractor shall develop a plan and supporting calculations for jacking, blocking, and supporting beams. Unless approved by the Engineer in writing, all jacks and temporary support systems shall be designed to support traffic loadings, dead load, temporary construction loads, and all other anticipated loading during work requiring the jacking and blocking of beams. The design shall be in accordance with the same edition of AASHTO LRFD Bridge Design Specifications and VDOT Modifications as used for design, unless noted otherwise. The plans and calculations shall be signed and sealed by a Professional Engineer holding a valid license to practice engineering in the Commonwealth of Virginia.
- For Stability Class SC, jacking and blocking details required to complete the erection shall be provided to the Engineer for review. Their location, type, size, and capacity shall be indicated, along with their intended use, sequence of engagement, load level, jack pressure table, and any other key operational parameters.
- (3) **Erection Engineering Calculations** – Perform all calculations required to erect the structure.
- (a) Erection Engineering Calculations shall be signed and sealed by the Erection Engineer.
 - (b) The following supporting calculations for each Structural Stability Class shall be submitted for review:
 - i. For Stability Class SA with steel girders, Class SB with steel girders, and for all Class SC: where the concrete deck placement sequence varies from the plans, calculations shall demonstrate that local flange buckling, lateral torsional buckling, global buckling, uplift, and camber have been verified to meet the appropriate superstructure material requirements.
 - ii. For all Stability Classes, a detailed lifting analysis for primary members shall be performed under the following conditions:
 - a) For prestressed concrete members:
 - 1) If primary structural members are to be shipped or placed on dunnage with support points other than indicated in the Plans or if the Plans do not indicate appropriate support points, refer to Section 405.05-(h) of the Specifications.

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- 2) Lifting and support points for all primary members shall be as shown on the plans. If plans do not indicate lifting and support points, or the primary members are to be lifted or supported at points other than indicated in the Plans, the Contractor shall lift and support individual primary members at locations in accordance with Section 405.05-(h) of the Specifications. The Contractor shall be responsible for the design and safety of the lifting device used.
- b) For structural steel members:
 - 1) If primary structural members are to be transported or placed on dunnage with support points other than indicated in the Plans or if the Plans do not indicate appropriate support points, refer to Section 407.05-(b) of the Specifications.
 - 2) Lifting and support points for all primary members shall be as shown on the plans. If plans do not indicate lifting and support points or the primary members are to be lifted or supported at points other than indicated in the Plans, the Contractor shall support individual primary members in accordance with Section 407.05-(b). The Contractor shall be responsible for the design and safety of the lifting device used.
- c) Requests by the Contractor to use lifting or support points other than those indicated shall be submitted to the Engineer for review and shall be accompanied by computations showing that stresses are within the allowable range using an impact factor of 1.50 to the dead load for structures over railroads, and an impact factor of 1.25 to the dead load for all other structures.

For lifting multiple primary members that have been pre-assembled, the Contractor shall be responsible for determining appropriate lifting and support points. The Contractor shall include computations using the indicated impact factor and showing that stresses are within the allowable range specified above; the lifting and support point locations shall be indicated in the submittal. All lifting equipment and connection devices shall have sufficient capacity for the actual lifting load plus impact specified above. The factor of safety provided by the manufacturer in the lifting capacity data (i.e., crane capacity charts) shall not be considered as satisfying part of the impact requirement listed herein.

- iii. The following supporting calculations for Structural Stability Class SC shall be submitted for review:
 - a) Load capacity and verification of stability for temporary support structures and cranes for each pick and release.
 - b) Calculations for crane supports (e.g., crane mats, barges, work trestles, etc.) shall be submitted.
 - c) Structural adequacy and stability of primary members:
 - 1) Prestressed Concrete: Provide compilation of all shipping and erection loads and associated deflections. Substantiate structural adequacy and stability of primary members for each step of bridge assembly in accordance with the current Precast Concrete Institute (PCI) Recommended Practice for Lateral Stability of Precast, Prestressed Concrete Bridge Girders.

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- Factor of Safety against cracking ≥ 1.0
- Factor of Safety against failure ≥ 1.5

If modification to concrete mix is proposed (e.g., for strength, etc.), include the revised concrete mix design data for review.

- 2) Structural Steel: Substantiate structural adequacy and stability of primary members for each step of bridge assembly for the means and methods used. Provide calculations to demonstrate the primary member does not experience the following:
 - Loads greater than capacity prior to completion of bridge assembly
 - Local flange buckling
 - Lateral torsional buckling
 - Global buckling
 - Uplift
- d) Wind loads for erection and lifting on site
 - 1) Wind Case 1 – active work space: wind speed = 20 MPH or equivalent pressure for the maximum safe wind speed under which the cranes are permitted to operate, whichever is greater. Refer to the AASHTO Guide Specifications for Wind Loads on Bridges during Construction.
 - 2) Wind Case 2 – inactive work space: equivalent pressure for the wind speed determined by the 3-second gust wind velocity Figure 4.1.2-1 and may be modified using wind speed reduction factor during construction as specified in Article 4.1.2 of the AASHTO Guide Specifications for Wind Loads on Bridges during Construction.
 - 3) Wind Case 3 – uncured (partial or total) deck pour where the concrete deck placement sequence varies from the plans, in place: refer to the AASHTO LRFD Bridge Design Specification, Section 4.6.2.7.
 - 4) The wind speed shall be increased where records, experience, or site-specific wind studies indicate that wind speeds higher than those in Figure 4.1.2-1 of the AASHTO Guide Specifications for Wind Loads on Bridges during Construction.
- e) If drop-in girders are used, calculations for temperature effects for fit-up and stresses due to any required jacking forces shall be provided. Include details for jacking and applied load tables.
- f) Calculations verifying adequate capacity of Contractor-fabricated rigging such as lift beams, welded lugs, spreader beams, beam clamps, etc. shall be submitted.
- g) Calculations verifying adequate structural capacity of any partially-bolted main connections after release of temporary support system shall be submitted.

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2. **Pre-Erection Meeting:** For structures in Stability Class SC, the Contractor shall hold a Pre-Erection Meeting for coordination between the Engineer, Erection Engineer, Erection Supervisor and all other necessary parties involved in the design, inspection, shipping, fabrication, and erection of the structural members. The meeting shall take place after the completion of review of submittals and at least 14 days prior to erection. This meeting shall review, at a minimum, the following:
 - Safety Procedures
 - Handling and Shipping Plan
 - Erection Diagrams, Notes, and Documentation

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3. Summary of the meeting and submittal requirements:

TABLE IV-1 CLASS SA	
ITEMS	REFERENCE
MEETINGS	
Pre-Construction Conference	105.02
ERECTION PLANS AND PROCEDURES	
Erection Diagrams, Notes, and Documentation	IV.1.B.(2)
Erection Sequence	IV.1.B (2).(a)
Potential obstructions or restrictions for crane operations	IV.1.B (2).(b)
Crane locations, capacity charts, related site conditions	IV.1.B.(2).(c)
Erection Engineering Calculations	IV.1.B.(3)
Structural adequacy & stability (Steel only)	IV.1.B.(3).(b).i
Detailed lifting analysis	IV.1.B.(3).(b).ii

TABLE IV-2 CLASS SB	
ITEMS	REFERENCE
MEETINGS	
Pre-Construction Conference	105.02
ERECTION PLANS AND PROCEDURES	
Handling and Shipping Plan	IV.1.B.(1)
Shipping length & weight	IV.1.B.(1).(a)
Truck/rail/barge & load configuration sketches	IV.1.B.(1).(b)
Tie-down configuration & tightening process	IV.1.B.(1).(c)
Applicable permits (anticipated) & hauling routes	IV.1.B.(1).(d)
Method of shipping	IV.1.B.(1).(e)
Erection Diagrams, Notes, and Documentation	IV.1.B.(2)
Erection sequence	IV.1.B (2).(a)
Potential obstructions or restrictions for crane operations	IV.1.B (2).(b)
Crane locations, capacity charts, related site conditions, etc.	IV.1.B.(2).(c)
Rigging detail, weight, capacity, arrangement	IV.1.B.(2).(d)
Lifting weight primary member picks	IV.1.B.(2).(e)
Temporary lateral bracing (skew > 45 degrees only)	IV.1.B.(2).(f)
Temporary devices bolted to permanent members (steel only)	IV.1.B.(2).(g)
Cross-frame/diaphragm connections (steel only)	IV.1.B.(2).(h)
Erection Engineering Calculations	IV.1.B.(3)
Structural adequacy & stability (Steel only)	IV.1.B.(3).(b).i
Detailed lifting analysis	IV.1.B.(3).(b).ii

TABLE IV-3 CLASS SC	
ITEMS	REFERENCE
MEETINGS	
Pre-Construction Conference	105.02
Pre-Erection Meeting	IV.2
ERECTION PLANS AND PROCEDURES	
Handling and Shipping Plan	IV.1.B.(1)
Shipping length and weight	IV.1.B.(1).(a)
Truck/rail/barge and load configuration sketches	IV.1.B.(1).(b)
Tie-down configuration and tightening process	IV.1.B.(1).(c)
Applicable permits (anticipated) and hauling routes	IV.1.B.(1).(d)
Method of shipping	IV.1.B.(1).(e)
Temporary support locations	IV.1.B.(1).(f).i
Mix designs – beams/slabs	IV.1.B.(1).(f).iii
Erection Diagrams, Notes, and Documentation	IV.1.B.(2)
Erection sequence and schedule	IV.1.B (2).(a)
Potential obstructions or restrictions for crane operations	IV.1.B (2).(b)
Crane locations, capacity charts, related site conditions, etc.	IV.1.B.(2).(c)
Rigging detail, weight, capacity, arrangement	IV.1.B.(2).(d)
Lifting weight primary member picks	IV.1.B.(2).(e)
Temporary lateral bracing (skew > 45 degrees only)	IV.1.B.(2).(f)
Temporary devices bolted to permanent members (steel only)	IV.1.B.(2).(g)
Cross-frame/diaphragm connections (steel only)	IV.1.B.(2).(h)
Cert. documents/catalog cuts for pre-engineered devices/equipment	IV.1.B.(2).(i)
Requests to remove splice, including calculations demonstrating adequacy	IV.1.B.(2).(j)
Blocking details for bearings	IV.1.B.(2).(k)
Temporary tie-down / restraint device details for bearings	IV.1.B.(2).(l)
Loading restrictions	IV.1.B.(2).(m)
Temporary support structure details	IV.1.B.(2).(n)
Foundation requirements for temporary support structures	IV.1.B.(2).(n).i
Strongback details	IV.1.B.(2).(n).ii
Hold crane locations	IV.1.B.(2).(n).iii
Falsework locations	IV.1.B.(2).(n).iv
Tie-downs and primary member restraints	IV.1.B.(2).(n).v
Release or removal of temporary support structures	IV.1.B.(2).(n).vi
Jacking device details	IV.1.B.(2).(o)
Erection Engineering Calculations	IV.1.B.(3)
Structural adequacy & stability (All primary members)	IV.1.B.(3).(b).i
Detailed lifting analysis	IV.1.B.(3).(b).ii
Shipping stability calculations	IV.1.B.(1).(f).ii
Load capacity and stability of temporary structures	IV.1.B.(3).(b).iii.a
Calculations for crane supports	IV.1.B.(3).(b).iii.b
Structural adequacy and stability (step by step erection)	IV.1.B.(3).(b).iii.c
Wind loads for erection and lifting on site	IV.1.B.(3).(b).iii.d
Temperature effects for fit-up (for drop-in girders)	IV.1.B.(3).(b).iii.e
Adequacy of Contractor-fabricated rigging	IV.1.B.(3).(b).iii.f
Structural capacity of partially bolted primary members after release of temporary support system	IV.1.B.(3).(b).iii.g

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V. SUBMISSION PROCEDURES

1. The Contractor shall submit the Erection Plans and Procedures and all required calculations for the primary members. The transportation details, e.g., tie-down type, locations and details, and any modifications to the lifting or support locations shall be coordinated between the Fabricator, Erector, and Shipping Provider for incorporation into the working drawings to the greatest extent possible.
2. Erection Plans and Procedures, including subsequent revisions, will be reviewed and returned to the Contractor in accordance with Section 105.03 of the Specifications.
 - A. All submissions required herein, and any subsequent revisions to be made, shall be submitted to the Engineer with sufficient time to permit review in accordance with the Contract requirements. The Contractor shall consider the time required for the various potential review activities (i.e., resubmissions, etc.) and make submissions accordingly. Submissions shall be made at least 30 days prior to the start of erection activities, as applicable. Projects requiring railroad review shall be submitted at least 45 days prior to the start of erection activities, as applicable.
 - B. Changes to the erection procedures, after the initial review of the Erection Plans and Procedures, may require revisions to portions of the Erection Plans and Procedures or working drawings at the Engineer's sole discretion.
 - C. There shall be no additional expense to the Department or contract time extension due to:
 - (1) Any revision to the Erection Plans and Procedures by the Contractor, once initially reviewed by the Department.
 - (2) Revisions required due to Contractor's means and methods, or rejection of the Erection Plans and Procedures submittal resulting from the Engineer's initial or subsequent review.
3. The Engineer's review period for Erection Engineering Calculations submittals required by Section IV.1.B, or as directed by the Engineer, will conform to Section 105.03 of the Specifications. Any and all written review comments provided by the Department shall be addressed to the Engineer's satisfaction before starting erection operations.

VI. ADDITIONAL REQUIREMENTS FOR WORKING DRAWINGS

1. Working drawings shall show complete detail drawings of any modifications to permanent structural components, including temporary support or lifting locations, proposed by the Contractor with signed and sealed calculations demonstrating the modifications are both necessary and adequate to accommodate proposed erection sequence loads.
2. Working drawings shall show all penetrations or embedded items required for safe shipping and lifting (including erection). Drilling through the web or flange will not be permitted. Bulb tees or similarly shaped beams shall not be stabilized during shipping using tie-downs placed over the top flange unless approved by the Engineer. During erection, tie downs over the top flange shall only be used if approved by the Engineer. The Engineer will only allow tie downs if computations demonstrate that the flange will not crack or deform under the force of tie downs at service load.

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VII. MEASUREMENT AND PAYMENT

Preparing and furnishing superstructure Erection Plans and Procedures. This work includes: all associated documentation, including but not limited to Erection Engineering Calculations, and Handling and Shipping Plans; modifications to permanent structural components proposed by the Contractor; Erection Diagrams, Notes, and Documentation; Erection Engineering Calculations, and Working Drawings to the Engineer for review. This work will not be measured for separate payment. The cost thereof, including revisions and supplements, shall be included in the Contract price of appropriate items.

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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 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.

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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 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.

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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 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.

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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 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.

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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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CONTRACT ID. NO.: C0000107937C01

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.

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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 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.

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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.

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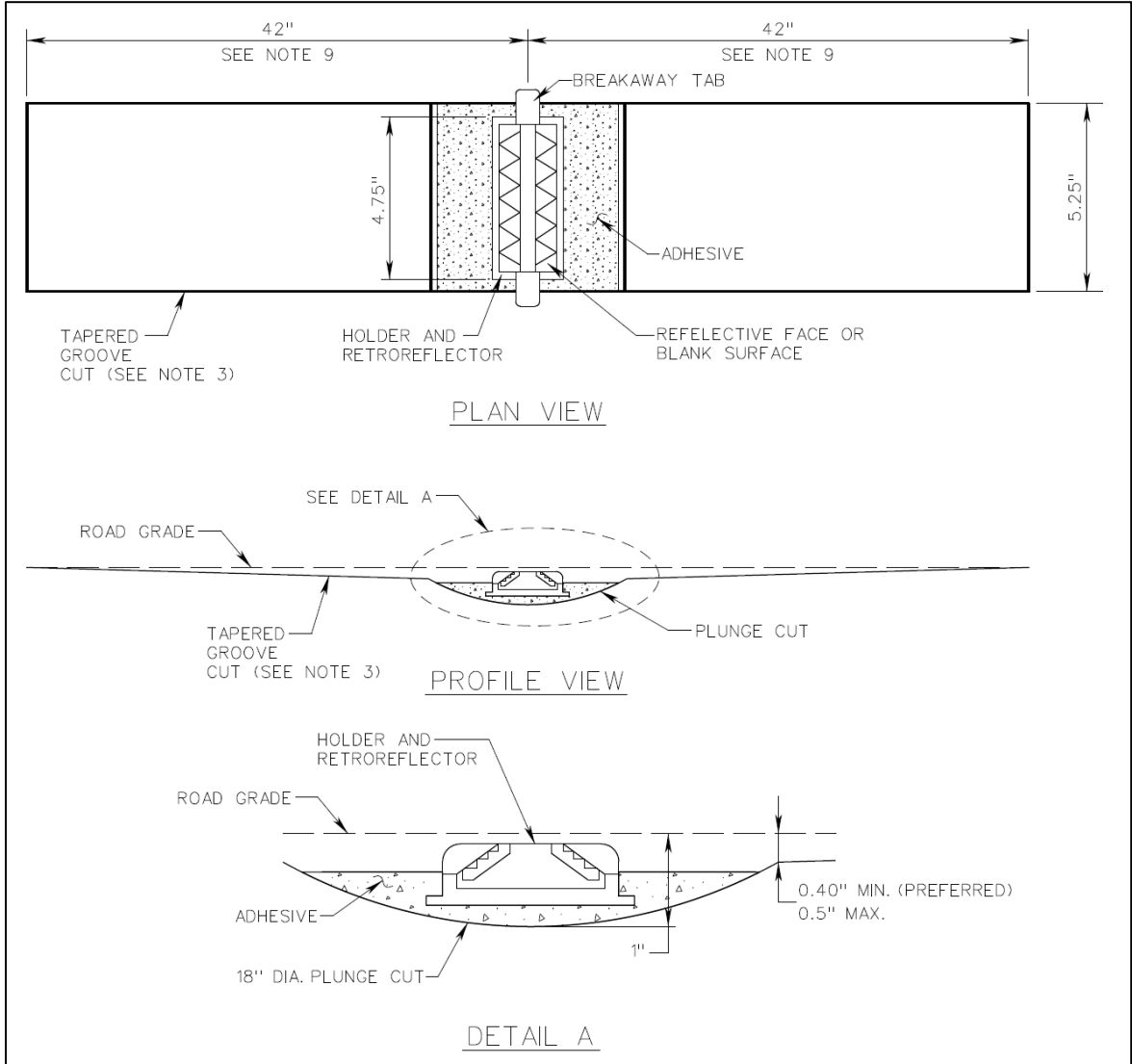


Figure 1: Installation of Inlaid Pavement Marker

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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SP705-000100-00

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
LIGHT EMITTING DIODE (LED) LUMINAIRES

July 27, 2018

I. Description

This work shall consist of furnishing and installing LED luminaires for roadway lighting systems (conventional poles, wall mounted, high mast, and overhead sign lighting) not including tunnel lighting, in accordance with this Special Provision, as shown on the Plans, and as directed by the Engineer.

II. General Requirements

The luminaire shall be designed and assembled by the same manufacturer. The luminaire manufacturer shall be ISO 9001 certified or with a documented quality management system of equal stringency and shall have at least five years of experience in manufacturing LED roadway luminaires.

The Independent laboratory used for the luminaire testing shall be on OSHA's current list of Nationally Recognized Testing Laboratories (NRTLs). The testing laboratory shall be located within the continental United States or Canada.

The luminaire shall be UL listed or have a documented quality management system of equal stringency. The luminaire shall be DesignLights Consortium (DLC) listed or Energy Star certified.

III. Materials

All electrical and electronic components of the luminaire shall be compliant with Restriction of Hazardous Substances (RoHS) Directives.

All electrical and electronic components of the luminaire shall meet IEEE C62.41.1, IEEE C62.41.2, and ANSI C136.2 requirements.

The luminaire shall include quick connect/disconnect plugs between separate electrical and electronic components. Wiring within the electrical enclosure shall be NFPA 70/ NEC compliant.

The luminaire shall use a barrier-type terminal block with three line-side wire connectors (including a ground terminal) for power connection to the luminaire. All terminal positions shall be clearly identified. Each connector shall accept only one conductor and accommodate #8 through #12 AWG wire.

The luminaire operating temperature shall include the range of -40°F (-40°C) to 104°F (40°C), with no lumen de-rating from -4°F (-20°C) through 77°F (25°C). The luminaire shall have a passive cooling method (heat sink).

The contact surface between dissimilar metals shall be in accordance to the Section 700 of the Specifications.

1. **Luminaire Housing** shall be constructed of aluminum alloy, die-cast or extruded with minimum shell thickness of 0.050 inches (50 mils). Other materials may be used if proven to have equal or greater strength, ultraviolet and corrosion resistance, and are approved by the Engineer.

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Bolts, studs, nuts, set screws, washers, and rivets shall be furnished as commercial items suitable for the application and in accordance with the manufacturer's instructions.

Exposed hardware on the housing including cover and latch shall be stainless steel, zinc, or steel with a zinc alloy electroplate and chromate top coat. Other materials may be used if proven to have equal or greater strength, ultraviolet and corrosion resistance, and are approved by the Engineer.

The housing shall include a corrosion resistant polyester powder coat with a minimum of 2 mil nominal thickness. The finish shall exceed a rating of 8 according to ASTM D1654 after 1000 hours of the salt (fog) testing in accordance with ASTM B117.

If non-metallic materials are used for the housing, the coating may not be required if approved by the Engineer and provided the surface of the housing can demonstrate equal or greater strength, and ultraviolet resistance. The testing procedure shall be in accordance with ASTM G154 or G155.

The housing shall be constructed as one integral piece (with the exception of the high mast luminaire). The electrical and the optical compartment shall not be connected using bolts or any other separable means.

The luminaire housing shall protect the interior against dust, solid objects, and moisture.

The housing shall be designed to allow water shedding and resist the build-up of debris and icicles.

The housing shall have an exterior label stating "LED" and wattage in accordance with ANSI C136.15 and must be visible from the ground.

The housing color shall be gray unless otherwise specified on the Plans.

2. **Optical Assembly** shall be completely sealed and the ingress protection (IP) shall be rated IP66 or higher.

The LED assembly shall have a minimum L70 of 100,000 hours at the specified LED drive current and ambient temperature of 77°F (25°C) based on a minimum of 10,000 hours of data per IES LM-80 and the IES TM-21.

The optical assembly shall have a color rendering index (CRI) of at least 70

Polymer refractive materials shall be UV-inhibited high impact plastic and lens shall be high-impact borosilicate glass or UV-stabilized acrylic. Other materials may be used if proven to have equal or greater strength, ultraviolet and corrosion resistance, and are approved by the Engineer.

3. **Driver** shall be secured inside the housing and suitable for use in wet locations.

The driver shall have a dimming control signal of 0 to 10V in accordance with IEC 60929.

The driver shall be rated for operation and storage within an ambient temperature range of 40°F (-40°C) to 104°F (40°C) of the luminaire. -

The driver shall be UL listed and shall meet FCC electrical interference emission and immunity requirements.

The driver shall conform to the following performance requirements:

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- Rated life of 100,000 hours minimum at an ambient temperature of 77°F (25°C).
 - Power factor of 0.9 or higher, with total harmonic distortion of 20% or less at full load.
 - Minimum efficiency of 90% at maximum load and a minimum efficiency of 85% for the driver operating at 50% power
 - Accommodate input voltages of 120V – 277V or 347V – 480V.
 - Have thermal overload protection mechanism.
4. **Surge Protection Device (SPD)** shall be an integral part of the luminaire and the LED power supply. The SPD shall be Type 4 in accordance with UL 1449.

The SPD shall be rated at minimum 10KV/5KA surge level.

The SPD shall operate with no performance degradation within an ambient temperature range of -40°F (-40°C) to 104°F (40°C) of the luminaire, 0-95% Relative Humidity (RH), non-condensing.

5. **Warranty**

The luminaire shall be warranted by the manufacturer for a minimum of 10 years from date of installation against any failure resulting from materials, and defects.

Failure is defined as one or more of the following:

- Significant light output reduction from more than 10% of the LED packages
 - Moisture inside the optical assembly
 - Lens discoloration
 - Driver failure
 - Presence of other conditions that do not meet specifications.
6. **Additional criteria** shall be applied to specific type of luminaires as indicated below:

A. **Conventional Pole-mounted Luminaire**

- (1) Shall have a system efficacy of at least 100 lumens/watt.
- (2) Weight shall not exceed 50 pounds.
- (3) Effective projected area (EPA) of maximum 3 square feet.
- (4) Shall conform to the requirements of ANSI C136.31 for vibration and be rated at least 3G.
- (5) The optical assembly shall be rated correlated color temperature (CCT) of 3000 or 4000 Kelvin (K) in accordance with ANSI C136.37.
- (6) Shall include a prewired 7-pin twist lock ANSI C136.41-compliant receptacle and a rain-tight shorting cap.

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- (7) Shall be designed to slip-fit onto a nominal 2-inches inside diameter or 2-3/8-inches outside diameter tenon and allow for an insertion of at least 3-1/2 inches, with internal barrier preventing over-insertion of the tenon.
- (8) Shall include clamp with minimum four appropriate size bolts in accordance with the manufacturer's instructions, unless otherwise directed by the Engineer.
- (9) Shall include a leveling device for horizontal or vertical orientation.
- (10) The housing shall include a door that is easy to open and close, or remove and replace without requiring any tool.

B. Wall mounted Luminaire

- (1) Shall have a system efficacy of at least 70 lumens/watt.
- (2) Weight shall not exceed 30 pounds.
- (3) Conform to the requirements of ANSI C136.31 for vibration and be rated at least 1.5G
- (4) The optical assembly shall be rated CCT of 3000K or 4000K in accordance with ANSI C136.37.
- (5) Shall be equipped with 0 to 10V field-adjustable output module for dimming capabilities if required on the Plans or directed by the Engineer.
- (6) Shall be designed such that it can be mounted onto a vertical flat surface by means of at least three appropriate size bolts with approved chemical or mechanical anchors through the wall side of the housing, in accordance with the manufacturer's instructions, unless otherwise directed by the Engineer.
- (7) Shall include a wire entry for the incoming power on the top, bottom, back, or vertical sides as required on the Plans. Each entry shall be pre-manufactured and tapped for a standard conduit connection. Unused entries shall be properly closed with screw type plugs supplied by the manufacturer.
- (8) The housing shall include a door that is easy to open and close, or remove and replace without requiring any tool.

C. High Mast Luminaire

- (1) Shall have a system efficacy of at least 100 lumens/watt.
- (2) Weight shall not exceed 70 pounds.
- (3) EPA of maximum 3.1 square feet.
- (4) Conform to the requirements of ANSI C136.31 for vibration and be rated at least 3G
- (5) The optical assembly shall have a rated CCT of 3000K or 4000K in accordance with ANSI C136.37.

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- (6) Shall include a prewired 7-pin twist lock ANSI C136.41 compliant receptacle and a rain-tight shorting cap.
- (7) Shall be adjustable and designed to slip-fit onto a mast arm mount from a nominal 1-1/4-inches to 2-inches inside diameter and 1-5/8-inches to 2-3/8-inches outside diameter tenon and allow for an insertion of at least 3-1/2 inches, with an internal barrier preventing over insertion of the tenon.
- (8) Shall include clamp with at least four bolts specified by the manufacturer unless otherwise directed by the Engineer.
- (9) The housing shall include a door that is easy to open and close, or remove and replace. The door may require a basic tool (such as a flat-tip or phillips screwdriver) to open and close.

D. Overhead Sign Lighting Luminaire

- (1) Shall have a system efficacy of at least 70 lumens/watt.
- (2) Weight shall not exceed 30 pounds.
- (3) EPA of maximum 0.75 square feet.
- (4) Conform to the requirements of ANSI C136.31 for vibration and be rated minimum 3G
- (5) The optical assembly shall be rated CCT of 3000K in accordance with ANSI C136.37.
- (6) Shall be equipped with 0 to 10V field-adjustable output module for dimming capabilities if required on the Plans or directed by the Engineer.
- (7) Shall be designed such that it can be installed onto one of the following types (as per the Standard Drawing OSS-1):
 - Retrieval system
 - Mounting Bracket
- (8) The housing shall include a door that is easy to open and close, or remove and replace without requiring any tool.

IV. Procedures

The Contractor shall securely install the luminaires at locations designated on the Plans, in accordance with the manufacturer's instructions.

Overhead sign lighting luminaires shall be installed as per the Standard Drawing OSS-1. If indicated on the Plans, the sign lighting luminaires shall be mounted on luminaire retrieval systems. The Contractor shall demonstrate the functionality of the luminaire retrieval system in the presence of the Inspector. Sign lighting luminaires to be installed without a luminaire retrieval system shall be attached to luminaire mounting brackets.

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High mast luminaire and ring assemblies shall be installed and tested in accordance with Section 705. High mast luminaires shall be rotated to maximize illumination on the road and minimize illumination outside the right-of-way, as indicated on the Plans and as directed by the Engineer.

The Contractor shall perform testing of the electrical components in accordance with Section 705 of the Specifications.

V. Measurement and Payment

Conventional luminaire will be measured in units of each and will be paid for at the Contract unit price for the wattage and type specified. This price shall include the luminaire housing, slipfitter, optical assembly, drivers, terminal block, surge protection device, labeling, conductor cables to the termini at the base of the pole or junction box, 7-pin receptacle with shorting cap, photo electric control, adjustments, testing, warranty, and incidental hardware to complete the work.

Wall-mounted luminaire will be measured in units of each and will be paid for at the Contract unit price for the wattage and type specified. This price shall include the luminaire housing, mounting hardware, optical assembly, drivers, terminal block, surge protection device, labeling, conduit, conductor cables to the termini at the junction box, adjustments, testing, warranty, and incidental hardware to complete the work.

High mast luminaire will be measured in units of each and will be paid for at the Contract unit price for the wattage and type specified. This price shall include the luminaire housing, slipfitter, optical assembly, drivers, terminal block, surge protection device, labeling, conductor cables to the termini at the base of the pole or junction box, 7-pin receptacle with shorting cap, photoelectric control, adjustments, testing, warranty, and incidental hardware to complete the work.

High Mast Ring Assembly will be measured in units of each and will be paid for at the contract unit price for the number of luminaires to be installed at that location. This price shall include the luminaire ring, lowering device with head frame and assembly, winch assembly, electric drills, electric raise/lower unit, lowering cables, junction box with prewired terminal block, adjustments, testing and incidental hardware to complete the work.

Sign lighting luminaire will be measured in units of each and will be paid for at the Contract unit price for the wattage and type specified. This price shall include the luminaire housing, mounting hardware, optical assembly, drivers, terminal block, surge protection device, labeling, conduit, conductor cables to the termini at the safety switch or junction box at the base of the structure, 7-pin receptacle with shorting cap, photoelectric control, service entrance head, grounding lug, safety switch, contactor, adjustments, testing, warranty, and incidental hardware to complete the work.

Electrical service, if required, shall be measured in accordance with Section 700 of the Specifications.

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Luminaire retrieval systems will be measured in units of each and will be paid for at the Contract unit price per each. This price shall include the luminaire retrieval system, adjustment, and testing.

Payment will be made under:

Pay Item	Pay Unit
Conventional luminaire (wattage and type)	Each
Wall mounted luminaire (wattage and type)	Each
High mast luminaire (wattage and type)	Each
High mast ring assembly (number of luminaires)	Each
Sign lighting luminaire (wattage and type)	Each
Luminaire retrieval system (structure)	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
PREVAILING WAGE RATES

October 12, 2023

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

Section 107.13 – Labor and Wages is amended as follows:

Section 107.13(a) Predetermined Minimum Wages is replaced with the following:

- (a) **Prevailing Wage Rates:** The provisions of federal and state laws requiring the payment of a prevailing minimum wage rate are incorporated in and expressly made a part of this Contract. The Contractor and the Contractor's subcontractors shall promptly and fully comply with all such applicable provisions, including, but not limited to, the following.

1.0 Federal Requirements

The Contractor and subcontractors must comply with such of the regulations in 29 C.F.R. Parts 1, 3, and 5 as may be applicable to the Contract. These requirements are considered to be effective by operation of law, whether or not they are incorporated into the Contract, as set forth 29 C.F.R. § 5.5(e).

1.1 Wage Determinations

The U.S. Department of Labor (USDOL) publishes general wage determinations applicable to specified areas on the USDOL-approved website. Wage determinations contain, among other information, a list of wage and fringe benefit rates determined to be prevailing for various classifications of laborers or mechanics for specified type(s) of construction in a given area.

The applicable wage determinations are included in the Contract. These wage determinations apply for the duration of the Contract, except as specified below.

If for any reason it is determined post-award that a wage determination and/or the correct wage determination was omitted from Contract, the omitted wage determination will be incorporated into the Contract and effective by operation of law, retroactive to the award date of the Contract.

USDOL may periodically issue revisions of the wage determinations to reflect current prevailing wage rates. Revisions to wage determinations are effective with respect to the solicitation and Contract if issued at least 10 calendar days before bid opening. If issued less than 10 calendar days before bid opening, revisions are effective to the solicitation and Contract unless the Department finds that there is not a reasonable time still available before bid opening to notify bidders of the revision.

If the Contract is not awarded within 90 days after bid opening, any revised wage determination issued prior to award is effective to the Contract unless the Department obtains an extension of the original wage determination from the Administrator of the USDOL Wage and Hour Division.

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1.2 Change Orders

The wage determinations incorporated into the Contract at Contract execution apply for the duration of the Contract, subject to the following exceptions. When the Contract is changed to include additional, substantial construction, alteration, and/or repair work not within the scope of work of the original Contract, or to require the Contractor to perform work for an additional time period not originally obligated, including where an option to extend the term of a contract is exercised, the most recent revision of any applicable wage determination(s) published at the time the change order is issued or the option is exercised are incorporated in and applicable to the change order work. The Contractor and their subcontractors must comply with the revised wage determinations when pricing and performing the change order work.

The requirement to incorporate revised wage determinations does not apply where (i) the Contract is not changed as described in the preceding paragraph, (ii) the Contractor is simply given additional time to complete the original Contract work, or (iii) where the additional construction, alteration, and/or repair work in the change order is already within the scope of the Contract.

1.3 Certified Payrolls

Each Contractor or subcontractor engaged in the construction, prosecution, completion, or repair work on the Project each week must submit certified payrolls in accordance with the records and certified payrolls requirements of Form FHWA 1273, under section IV(3) - Records and certified payrolls (29 CFR 5.5), included in the Contract.

Each certified payroll required under this section must be delivered by the Contractor or subcontractor, within 7 days after the regular payment date of the payroll period in accordance with the Special Provision for Electronic Submission of Payrolls and DBE Subcontractor Payment for Federally Funded Projects (**SP107-000120-00**).

Each Contractor or subcontractor must preserve all regular payroll records for all laborers and mechanics working at the site of the work for a period of 6 years after all the work on the Contract is completed in accordance with Form FHWA 1273, section IV(3) - Records and certified payrolls (29 CFR 5.5), included in the Contract, and section 2.4, below.

1.4 Conformance

- A. Any class of laborers or mechanics, including helpers, which is not listed in the applicable wage determination, and which is to be employed under the Contract, must be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:
- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
 - (2) The classification is used in the area by the construction industry; and
 - (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- B. The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

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- C. If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Engineer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the Engineer by email to *DBAconformance@dol.gov*. The Administrator of the USDOL Wage and Hour Division, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the Engineer or will notify the Engineer within the 30-day period that additional time is necessary.
- D. In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the Engineer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Engineer will, by email to *DBAconformance@dol.gov*, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator of the USDOL Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the Engineer or will notify the Engineer within the 30-day period that additional time is necessary.
- E. The Engineer must promptly notify the Contractor of the action taken by the USDOL Wage and Hour Division under paragraphs (C) and (D) of this section. The Contractor must furnish a written copy of the Administrator's determination to each affected worker, or must be post it as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph (C) or (D) of this section must 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.

2.0 Virginia Requirements

- 2.1 If the Contractor needs a job classification not listed in the wage determination to submit a bid or comply with this provision, the Contractor shall submit to the Department a completed Additional Classification and Wage Rate Request using Form C-51. If other or additional classifications are used, omission of classifications shall not be cause for additional compensation to the Contractor. The Contractor shall be responsible for determining local practices with regard to the application of the various labor classifications.
- 2.2 Upon the award of the Contract, the Contractor shall certify, under oath, to the Commissioner of the Virginia Department of Labor and Industry (VDOLI) the pay scale for each craft or trade employed on the project to be used by the Contractor and any of the Contractor's subcontractors for work to be performed under the Contract. This certification shall, for each craft or trade employed on the project, specify the total hourly amount to be paid to employees, including wages and applicable fringe benefits, provide an itemization of the amount paid in wages and each applicable benefit, and list the names and addresses of any third party fund, plan or program to which benefit payments will be made on behalf of employees. The certification form available at: www.doli.virginia.gov/wp-content/uploads/2021/04/DOLI-Pay-Scale-Certification-for-Public-Works-Projects.pdf. The form may be emailed to prevailingwage@doli.virginia.gov, faxed to 804-371-6524, or mailed to Virginia Department of Labor and Industry, 600 East Main St., Suite 207, Richmond, VA, 23219, Attn: Prevailing Wage.

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- 2.3 The Contractor and the Contractor's subcontractors performing work on this Contract shall post the general prevailing wage rate for each craft and classification involved in prominent and easily accessible places accessible to all employees at the site of the work or at any such places as are used by the Contractor or subcontractors to pay workers their wages. Within 10 days of such posting, the Contractor or subcontractors shall certify to the Commissioner of VDOLI their compliance with this requirement. The certification form available at: www.doli.virginia.gov/wp-content/uploads/2021/04/PW_Posting_Compliance_Form.pdf. The form may be emailed to prevailingwage@doli.virginia.gov, faxed to 804-371-6524, or mailed to Virginia Department of Labor and Industry, 600 East Main St., Suite 207, Richmond, VA, 23219, Attn: Prevailing Wage.
- 2.4 The Contractor and the Contractor's subcontractors shall keep, maintain and preserve (i) records relating to the wages paid to and hours worked by each individual performing the work of any mechanic, laborer, or worker and (ii) a schedule of the occupation or work classification at which each individual performing the work of any mechanic, laborer, or worker on the public works project is employed during each work day and week. The employer shall preserve these records for a minimum of six years and make such records available to the Virginia Department of Labor and Industry within 10 days of a request and shall certify that records reflect the actual hours worked and the amount paid to its workers for whatever time period they request.
- 2.5 The Contractor shall insert this Special Provision into any subcontracts let to subcontractors for performance of services in connection with the Contract.

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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)

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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.

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,

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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 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.

Table II-12A – Standard Deviation is renamed Aggregate Properties and is replaced with the following:

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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 max.	47-67				2-10
SM-9.5 A,D,E				100 ¹	90-100	58-80	38-67		23 max		2-10
SM-12.5 A,D,E			100	95-100	90 max.	58-80	34-50		23 max		2-10
IM-19.0 A,D,E		100	90-100	90 max.	--	--	28-49				2-8
BM-25.0 A,D	100	90-100	90 max.	--	--	--	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.

Table II-14 – Mix Design Criteria is replaced with the following:

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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 (h)- is replaced with the following

(h) An antistripping additive shall be used in all asphalt mixes. It may be hydrated lime or a chemical additive from the Materials Division Approved List No. 7 or a combination of both. When using an approved chemical additive, 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.

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 Approved List 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 Approved List No. 66.

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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.

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 Size ¹	1 1/2"	1"	3/4"	1/2"	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.

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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.

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

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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.

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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.

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CONTRACT ID. NO.: C0000107937C01

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 the line and pile shall be not more than 1/2 percent of the length of the pile or 3 inches, whichever is smaller.

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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 AWP						
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:

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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 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

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- 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	
	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:

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Section 246.03(f) Permanent, Plastic-Backed, Preformed Tapes (Type B, Class IV and Type B, Class VI) is renumbered as 246.03(g).

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 to 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 DEPARTEMENT 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.

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- (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 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:

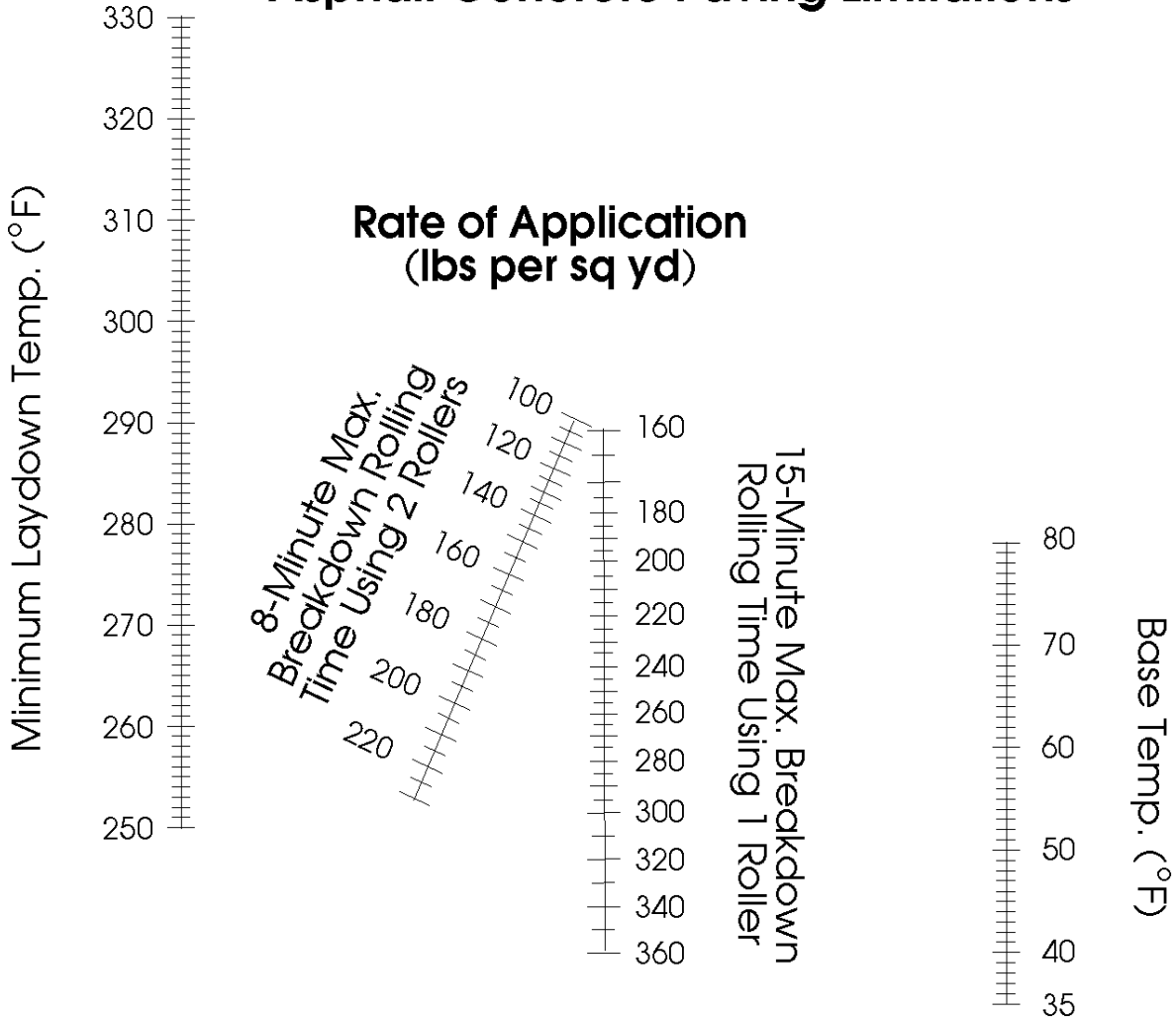
- 1. **When the base temperature is above 80 degrees F:** The Engineer will allow laydown of the mixture at any temperature conforming to the limits specified in Section 211.
- 2. **When the base temperature is between 40°F and 80°F** the Contractor shall use Table III-2 to determine the minimum laydown temperature of the asphalt concrete mixes. At no time shall the

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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
PG 64S-22 (S)	<=30%	50°F ²	290°F ²

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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.

- 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.

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- 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 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.

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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

¹ For 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 sublot 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.

(1) Method ‘A’ (plugs or cores)

Any pay adjustment will only be applied to Main Pavement.

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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.

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.

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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 be approximately 25 feet longitudinally at a location mutually agreed upon by the Contractor and Engineer.

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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 stripes 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 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.

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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.
- (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.

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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	Grade A490
	Bolts	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 recommendations, including the NTPEP data for product thickness and glass bead quantities to the Engineer.

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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/ftc). 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/ftc, the Contractor shall reapply the markings as indicated.

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:

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- 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 (I) herein.
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.

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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.

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.

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Section 512.03(l) – 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.

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.

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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.

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.

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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 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:

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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.

PTRS Placement shall be in accordance with the VWAPM.

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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.

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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 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:

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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 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.

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.

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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.

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:

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- 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 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.

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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.

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

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
VERIFYING EXISTING UTILITIES AND INSTALLING GUARDRAIL POSTS

May 8, 2020

I. DESCRIPTION

This work shall consist of verifying underground utility locations by hand digging test pits at locations specified by the Engineer. When necessary the work shall also include hand digging guardrail post holes in close proximity to underground utilities identified by test pits and as directed by the Engineer.

II. MATERIALS

Earthen material used as backfill test pits shall be of the same quality as the existing and shall conform to the applicable specifications.

Aggregate shall conform to Section 208 of the Specifications.

Asphalt concrete pavement patching material shall be hot or warm mix asphalt conforming to Section 211 of the Specifications. When weather limitations or other conditions prevent placing hot or warm mix asphalt and if approved by the Engineer, the Contractor may use Type I or II Cold Mix Asphalt Patching Material from the Department's Approved List 78. The Contractor shall submit product documentation for review by the Engineer.

Hydraulic cement concrete patching material shall conform to Section 217 of the Specifications or, if approved by the Engineer, shall be a concrete repair material selected from the Department's Approved List 31.

III. PROCEDURES

The Contractor shall coordinate with the Virginia 811 services and the Department before starting work.

The Department may have underground utility facilities within the project limits. Such facilities include, but are not limited to electric and fiber optic lines serving signals, roadway lighting, illuminated signs, and VDOT traffic management equipment. The Department's facilities will be marked by VDOT before the start of the contract time. The Contractor shall maintain these markings throughout the project duration so as to prevent damage to these facilities resulting from the Contractor's operations. The Contractor shall employ due care and diligence in maintaining these markings and be aware of their locations while performing the work. If the markings are destroyed by the Contractor's operations, the Contractor shall have them re-marked at no additional cost to the Department.

The Contractor shall anticipate and locate all underground utilities and obstructions that may conflict with the planned work and take all precautions necessary to avoid disturbing utility facilities in accordance with Section 105.08 of the Specifications.

The Contractor shall submit sufficient documentation to substantiate the need for test pits to the Engineer for approval before digging test pits.

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The Contractor shall excavate each test pit to a diameter and depth sufficient to confirm the presence or absence of an existing utility and to allow for verification of the type and condition of the utility. The Contractor shall support excavation as necessary to protect workers and adjacent conditions .

The Contractor shall prepare and present a signed report to the Engineer at the conclusion of each day's work. The report shall list each test pit's location (station and offset), depth from existing surface and pit size; as well as the offset and location, elevation and nature (size and type) of all utilities encountered.

The Contractor shall coordinate with the utility owners to determine if the existing utilities are active and verify their extent and locations, within the project limits.

When guardrail construction appears to be in close proximity to existing utilities, the Contractor shall perform test pit excavations in accordance with Virginia 811 procedures to verify the exact locations and elevations of these utilities and determine if these utilities will be in conflict with the proposed work. The Contractor shall dig the test pits well in advance of construction work.

When guardrail posts must be installed in close proximity to existing utilities and the Contractor has verified that installing such guardrail posts by driving or other mechanical means is prohibitive based on information obtained by test pitting and Virginia 811 marking, the Contractor shall install guardrail posts by hand digging. The depth and size of the holes shall conform to the Standard Drawings for the specific guardrail type being installed and shall conform to with existing lines, grades, and limits or to those established by the Engineer. All post holes shall be backfilled and compacted with material conforming to the Section 208 of Specifications and compacted after installing posts.

The Contractor shall patch or backfill resulting test pits and guardrail post holes with approved material placed in compacted layers not more than 4 inches deep in accordance with the applicable Specifications and as directed by the Engineer. Pavement patches and backfill shall be flush with the surrounding surfaces when the cavity is filled and material compacted. The Contractor shall remove and dispose of all surplus and unsuitable material.

The number of post holes to be hand excavated is estimated in the Contract, however, additional holes may be required due to field conditions. Additional holes must be as authorized by the Engineer.

IV. MEASUREMENT AND PAYMENT

Utility Test Pit (Surface type) will be measured in units of each per excavation through areas of surface type specified and will be paid for at the Contract each price. This price shall include surveying, excavating, sheeting/shoring, backfilling, compacting, disposing of surplus material, restoring the disturbed area, and providing daily reports.

Excavating two initial test pits per directional bore will be considered incidental to the directional bore and will not be measured for separate payment. If the Engineer determines additional test pits(s) are necessary to locate utilities during boring operations, the Department will pay the test pit Contract price per additional test pit.

Hand dig guardrail post hole will be measured in units of each and will be paid for at the contract unit price per each; only for posts that cannot be installed by driving or mechanical means in areas identified on the Plans or where directed by the Engineer. This price shall include excavating to the depth required to install the post, backfilling with material approved by the Engineer, compacting, and restoring pavement to match existing pavement, when necessary.

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The cost of removing and disposing of surplus material shall be incidental to this work.

Traffic control, if required, will be paid separately.

Payment will be made under:

Pay Item	Pay Unit
Utility Test Pit (Paved Area)	Each
Utility Test Pit (Unpaved Area)	Each
Hand Dig Guardrail Post Hole	Each

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
SECTION 605 - PLANTING

April 26, 2023

SECTION 605 - PLANTING of the Specifications is amended as follows:

605.01 — Description is amended to replace the first paragraph with the following:

This work shall consist of furnishing and planting trees, shrubs, vines, perennials, and other plants of the kinds, sizes, qualities, and quantities specified on the plans or by the Engineer and maintaining and replacing plants as specified herein. The fulfillment of the work is divided into two phases, the Installation Phase and the Establishment Period. The Installation Phase will begin with the start of landscaping operations by the Contractor after the Planting Operations Coordination Meeting and will terminate with Installation Phase Acceptance by the Department. The 1-year Establishment Period within VDOT right of way and the 3-year Establishment Period for Fairfax County Parkway Authority property will begin once all plantings are accepted by the Department in accordance with Section 605.07

605.02 — Materials is amended as follows:

Section 605.02 (g) Trees, Shrubs, Vines, Perennials, and Other Plants is replaced with the following:

(g) **Trees, Shrubs, Vines, Perennials, and Other Plants** shall conform to the requirements of Section 244 and the following:

1. All plants to be supplied shall be first class representatives of their normal species or varieties unless otherwise specified. All plant materials, including their root ball size and container size, are to conform in size and grade as specified under the current edition of ANSI Z60.1 "American Standard for Nursery Stock." The current edition of "*Hortus Third*" by L.H. Bailey, Hortorium, Cornell University shall be the authority for all plant names.
2. All plant material supplied, unless otherwise specified, that is not nursery grown, uniformly branched, does not have a vigorous root system, or does not conform to the current edition of ANSI Z60.1, "American Standard for Nursery Stock" will be rejected.
3. All B&B (balled and burlapped) plants shall be freshly dug at time of delivery and nursery grown unless otherwise permitted, and shall have been growing for at least two years prior to award date of the contract in USDA Plant Hardiness Zones 6 or 7, within the states of Virginia, Maryland, Delaware New Jersey, Pennsylvania, North Carolina or New York.
4. All plant materials shall have normal, well developed branches and a vigorous root system. Plant material that is not healthy, vigorous and free from defects, decay, disfiguring roots, sunscald injuries, bark abrasions, plant diseases, insect pest eggs, borers, and all forms of infestations or objectionable disfigurements will be rejected. Plant materials that are weak or which have been cut back from larger grades to meet certain specified requirements will be rejected.

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5. Shade and flowering trees are to be symmetrically balanced according to their normal habit of growth. Shade trees of standard variety shall have a single leader and shall be branched as indicated on the plans. Major branches shall not have V-shaped crotches capable of causing structural weakness. Trunks shall be free of unhealed branch removal wounds greater than a one inch diameter. Evergreens are to be full foliage. The major roots of the deciduous and evergreen trees shall not be more than 2 inches below the top of their root ball. This measurement shall be made 4 inches from the tree's trunk at multiple locations around the root ball. Deciduous and evergreen shrubs shall be well furnished with branches and have ample, well balanced root systems capable of sustaining vigorous growth. All vines, ground cover, ornamental grasses, and herbaceous plants shall have been growing for at least three months in the size of container specified and show full and substantial growth conforming to the industry standard size of the plant indicated.
6. Prior to digging, plant materials will be inspected by the Engineer. Plant material grown in fields or blocks which show evidence of containing any parts (seeds, rhizomes, roots) of Johnson Grass, Bull Thistle, or Canada Thistle will be rejected. Certain items selected will be marked with a seal furnished by the Engineer. Approval of plant materials on this inspection shall not be acceptance for use on the project. The plant materials will be inspected again at arrival on the subject site. Material arriving with broken seals, broken or loose balls, insufficient protection of roots or top, shriveled dry or insufficiently developed roots or which are weak and thin, or damaged or defective or which do not comply with the specifications will be rejected. All container grown plants shall be well rooted, vigorous and established, with full and well-balanced tops, in the appropriate container size for the height or spread of the plant specified, and shall not be root bound.
7. Plant materials represented by each shipment, invoice, or stock order shall be declared and certified free from disease of any kind. All necessary inspection certificates to the effect which are required by law for the necessary interstate or inter-district transportation shall accompany each shipment, invoice, or order of stock.
8. All tree pruning shall conform to the current edition of the National Arborist Association's "Pruning Standards for Shade Trees.

SECTION 605.04 - Procedures is amended as follows:

Section 605.04—Procedures is amended to include the following:

- t) **Sample Testing and Inspection:** The Contractor shall provide samples of all products (planting materials) for testing and visual inspection. All mulch, soils and soil amendment samples must be in 1 to 3 pound bags.

Section 605.04(d) Planting is amended to include the following:

The Contractor shall notify the Department at least 48 hours prior to beginning the work. All sources of supply, materials, construction schedule, and methods of construction shall be submitted to the Engineer for approval prior to beginning work covered by this section on the project. Plants restricted to planting either in spring or fall will be designated on the plans.

Section 605.04(e) Sources of Supply is amended to include the following:

The Contractor shall keep his list of plant sources to a minimum; the cost of plant inspection and tagging trips in excess of the contractor's initial source list shall be deducted from his invoices.

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Section 605.04(q) 2. Preparing Planting Pits for Trees and Shrubs is amended to include the following:

If the Contractor determines that the original excavated soil is not suitable for reusing with amendments for achieving and acceptable growing medium, the Contractor shall notify the Engineer. The Engineer reserves the right to have the soil tested prior to making a determination for replacement. The Engineer shall make a determination as to the quality of the soil and if found to be unacceptable, will direct the Contractor to use topsoil, approved organic material or other amendments in the soil mix. In cases where the soil is not suited for reusing or amending, the soil excavated from the planting pit, and/or unsuitable soils around the planting pit shall be removed as directed by the Engineer.

Section 605.04(q) 5. Preparing Plant Beds- is amended to replace the first paragraph with the following:

- a. The Engineer will only require plant bed preparation on 3H:1V or flatter slopes. Where grass and weeds are present, the Contractor shall mow existing vegetation to no less than 3 inches at least one week prior to any herbicide spraying. The vegetation shall be allowed to re-grow to a height of at least 4 inches and no more than 8 inches prior to applying herbicide. Spray any re-growth and kill all vegetation (top growth and roots) using a non-selective, non-residual post emergence herbicide conforming to Virginia Pesticide Applicator's Law and to the manufacturer's recommendations at least 14 days prior to beginning plant bed preparation, or shall physically remove all turf and weeds immediately before bed preparation. Apply non-selective herbicide in water with wetting agent and dye as follows:

Section 605.04(q) 5. Preparing Plant Beds- is amended to replace the third paragraph with the following:

- b. The Contractor shall remove any remaining grass, sod, and weeds from the bed. Rocks over 2 inches in diameter, clods, roots, and other objectionable material remaining on the surface shall be removed and disposed of in accordance with Section 106.04 or as approved in writing by the Engineer. On flat areas and slopes less than 3:1, two inches of compost, peat moss or other approved organic soil amendments shall be spread over the entire area of the plant bed and shall be cultivated in to a depth of at least 6 inches by a rotary cultivator before plant pits are excavated. Grass, sod, and weeds shall be removed from the bed. Individual planting pits within the bed shall not be dug until after the bed is prepared to the satisfaction of the Engineer.

605.07—Establishment Period is amended as follows:

Section 605.07 (a) Watering is replaced with the following:

- (a) **Watering:** During the establishment period, living plants shall be watered as frequently as is necessary to maintain an adequate supply of moisture within the root zone at all times. The Contractor's shall monitor site conditions and apply water to plants during the life of the Contract as may be required by weather conditions. The Contractor's watering schedule shall be in accordance with the frequency listed on the project's summary sheet general notes and in accordance with the Contractor's approved Establishment Period Phased Maintenance Schedule. That schedule withstanding, the Contractor shall be responsible for watering as frequently as is necessary to maintain an adequate supply of moisture within the root zone of all plantings at all times and especially whenever there is less than 1 inch of rainfall in a seven day period during the months of April through September. Water shall not be applied at a force that will displace mulch. The Engineer will make periodic inspections to ascertain the moisture content of the soil. The Contractor shall water all plant pits and beds during the life of the Contract. The Contractor shall manually apply water to all plant material; minimum quantities of water for each manual watering are as follows:

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Deciduous trees	20 gallons per pit
Evergreen trees	15 gallon per pit
Shrubs	2.5 gallon per pit
Groundcovers	50 gallons per 100 square feet
Perennials	50 gallons per 100 square feet
Ornamental grasses	1 gallon per pit
Vines	1 gallon per pit

Tree Irrigation Bags and Shrub Irrigation Bags may be used in lieu of the manual watering as approved by the Engineer. The irrigation bags shall be placed to provide a drip time of 6 to 10 hours. The irrigation bags shall be replaced if damaged or stolen at no additional cost to the Department. Irrigation bags shall be removed in the winter and replaced in the spring. The irrigation bags shall be removed by the Contractor prior to final acceptance.

1. The Engineer may require the use of watering needles or other approved watering methods to prevent displacement of soil, mulch and the runoff of water. The Engineer may make periodic inspections to ascertain the adequacy of the Contractor's watering efforts and the moisture content of the soil in the root zone of plantings. If it is determined from the Department's inspection the Contractor's watering efforts are not adequate to continuously maintain moisture in the root zone of plantings the Contractor will be notified that additional watering is required and shall respond as detailed herein.
2. The quantity of water supplied shall not be in excess of that normally required to ensure optimum growing conditions. Watering shall not commence until methods and equipment have been approved by the Engineer. The Engineer may require or suspend watering at any time.

Notification and Scheduling: When notified by the Engineer that additional watering is required (in addition to watering scheduled in the Contractor's approved Establishment Period Phased Maintenance Schedule), the Contractor shall begin watering within 48 hours of such notification with sufficient water, labor, materials, and equipment as required and shall continue to water daily where and as directed, without delays or interruptions, to ensure that the root zones of plantings do not become dry at any time. The Contractor's watering equipment shall include, but is not limited to a watering truck with a minimum tank capacity of 3,000 gallons. The quantity of water supplied shall not be in excess of that normally required to ensure optimum growing conditions. The Engineer may require or suspend watering at any time. If the Contractor fails to begin watering operations within 48 hours after notification, the Engineer may proceed with adequate water, forces, equipment, and materials to perform the needed watering and the entire cost of the Department's watering operations will be deducted from monies due the Contractor.

605.10—Measurement and Payment is amended as follows:

Section 605.10 Measurement and Payment is amended to replace the first paragraph with the following:

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Plants will be measured in units of each, on an actual count of living plants in a healthy growing condition, and will be paid for at the contract unit price per each as described in the Contract for the size (and, if specified, quality) designated. Plants that the Engineer deleted from the Contract will not be measured for payment. This price shall include furnishing and installing plants and miscellaneous planting materials; preparing planting pits, except when established as a separate pay item; furnishing and applying fertilizer; backfilling with approved soil mixture, except when linear or oversize planting pits are established as a separate pay item; staking; guying; anchoring; pruning; applying mulch, except to areas designated on the plans as plant beds; replacing dead or damaged plants; repairing, replacing and removing stakes and guys when no longer needed; and maintaining plants in a healthy growing condition until final acceptance.

Section 605.10 Measurement and Payment is amended to include the following:

Watering/Weed Control will be measured in units of 100 square feet of surface area and will be paid for at the contract unit price per unit. This price shall include a watering truck, water meter, 100 feet of hose and operator; initial watering when planting; watering during the Installation Phase and the Establishment Period; applying pre-emergent herbicide to beds and individual plant pits; pest management; controlling weeds in plant beds and tree rings (vegetation control) throughout the Establishment Period,

Payment will be made under:

Pay Item	Pay Unit
(Name of) Plant (Size)	Each
Watering/Weed Control	Unit

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
SECTION 244 ROADSIDE DEVELOPMENT MATERIALS

April 5, 2023

SECTION 244 – ROADSIDE DEVELOPMENT MATERIALS of the Specifications is amended as follows:

Section 244.02 (k) **Miscellaneous Planting Materials** is amended as follows:

Section 244.02(k) 9. Mulch for individual planting pits and planting beds is amended to include the following:

Shredded Hardwood Bark. Shredded hardwood bark shall consist of the bark from hardwood trees which has been milled and screened to a maximum 4 inch particle size and provide uniform texture free from sawdust, toxic substances, and foreign materials.

Section 244.02(k) is amended to include the following:

10. **Organic Material** used in conjunction with amending or manufacturing topsoil shall conform to the following. Organic materials regulated by the Virginia Department of Environmental Quality shall meet all applicable regulatory requirements.

- (a) Humus or peat shall be commercially produced natural humus or peat from freshwater sources and may contain sedge peat, sphagnum peat, or reed peat. The material shall be free from hard lumps, roots stones, and other objectionable material. There shall be no admixture of refuse or material toxic to plant growth. It shall be in a shredded or granular form able to pass through a 12 mm sieve. The acidity shall not be less than 3.5 PH and the organic matter shall not be less than 85%. The minimum water holding capacity shall be 200% by weight on an oven-dry basis.
- (b) Peat moss shall be commercially produced and be composed of the partly decomposed stems and leaves of any or several species of sphagnum moss. It shall be free from wood, decomposed colloidal residue and other foreign matter. It shall have an acidity range from 3.5 pH to 5.5 pH. Its water absorbing ability shall be a minimum of 110% by weight on an oven-dry basis.
- (c) Source-Separated Compost shall be commercially or municipally produced and shall be an organic substance produced by the biological and biochemical decomposition of source separated compostable material separated at the point of waste generation. Source-separated compostable material separated at the point of waste generation. Source-separated compostable materials may include, but are not limited to, manure and/or other agricultural residuals, forest residues, bark, and soiled and/or unrecyclable paper.

Source separated compost shall be reasonably free of sticks, stones, refuse, materials deleterious to soil structure, or any material toxic or detrimental to plant germination and growth. Source separated compost shall also meet the following specifications:

- 1. Minimum organic matter shall be 30% (dry weight basis)
- 2. Products shall be loose and friable, not dusty, and have a moisture content of 35% - 60%
- 3. Particle size shall be < 12.5 mm;
- 4. Soluble salts content shall be < 4.0 mmhos/cm (ds/m);
- 5. Compost shall be stable to very stable according to the current test methods
- 6. pH shall be 6.0-8.0.

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
INVASIVE SPECIES MANAGEMENT

May 23, 2016

I. DESCRIPTION

This work shall consist of managing invasive species by eliminating targeted vegetation in planting areas, areas specified on the plans, within fifteen feet of the planting area limits and specified areas, or as directed by the Engineer. The work shall include, but is not limited to, applying herbicides, mowing treated brush, removing treated trees, removing dead trees, chipping removed trees and debris, removing specified invasive trees within 30 feet of bridge structures and travel lanes, and properly disposing of chipped material and debris.

This work shall also include the following operations, individually or in combination:

- Basal stem application of herbicides to target trees, shrubs and other woody plants.
- Cut stump application of herbicides to target trees, shrubs and other woody plants.
- Foliar application of herbicides to target trees, shrubs and other woody plants.
- Foliar application of herbicides to target herbaceous plants.
- Felling, cutting, chipping and removing target trees, shrubs and other woody plants.
- Mowing invasive woody and herbaceous vegetation.
- Properly disposing of debris.
- Setting up and maintaining the required Maintenance of Traffic

Management of non-native invasive species (NNI) requires manual removal and herbicidal application, depending on the time of year, and species specific protocols as determined by the Engineer. The Contractor shall obtain all necessary permits (e.g. Request for Permission to Use Herbicides for Aquatic Vegetation Management Purposes) before initiating herbicide application.

II. MATERIALS

Herbicides: All herbicides shall be EPA registered chemicals that are approved for use in forested areas and/or adjacent to waterways to manage and prevent re-growth of undesirable vegetation. Use manufacturer recommended wetting agent, basal oil (when appropriate), and marking dye, or equivalents, as approved by the Engineer. (NOTE: Garlon 4 and Round-up Pro are not approved for use in and/or directly adjacent to waterways/wetlands however Rodeo Herbicide can be used as the alternative for environmentally sensitive areas). Submit a written request to the Engineer for use of herbicides other than those listed below and receive written approval prior to use of such chemicals on the project. Manufacturer's specification sheets (labels) for herbicide, wetting agent, basal oil, and dyes shall be submitted to the Engineer.

(a) Herbicides approved for use include:

- (1) Aquatic glyphosate – Aqua Neat*
- (2) Aquatic non-ionic wetting agent – Alenza 90*
- (3) Glyphosate – Roundup Pro Concentrate*
- (4) Pathfinder II* (marker dye will be added)
- (5) Rodeo Herbicide*
- (6) Triclopyr – Garlon 3A*, Garlon 4* - indicates examples of approved Trade Name Products

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Other incidental material needed to successfully eradicate NNI species. Herbicide type shall be approved by the Engineer before application.

III. CONSTRUCTION

The Contractor and Engineer shall survey all invasive vegetation management areas together prior to commencement of work to determine locations of invasive plant species listed below:

NON-NATIVE INVASIVE SPECIES	
NOXIOUS WEEDS	
<i>Carduus acanthoides</i>	Plumeless Thistle
<i>Carduus nutans</i>	Musk Thistle
<i>Cirsium arvense</i>	Canadian Thistle
<i>Cirsium vulgare</i>	Bull Thistle
<i>Sorghum bicolor</i>	Shattercane
<i>Sorghum halepense</i>	Johnsongrass
HERBACEOUS	
<i>Crown-vetch</i>	Coronaria varia
<i>Phragmites australis</i>	Common Reed
VINES	
<i>Akebia quinata</i>	Fiveleaf Akebia
<i>Ampelopsis brevipedunculata</i>	Porcelain Berry
<i>Celastrus orbiculatus</i>	Oriental Bittersweet
<i>Euonymus fortunei</i>	Wintercreeper
<i>Hedera helix</i>	English Ivy
<i>Lespedeza sericea</i>	Lespedeza
<i>Lonicera japonica</i>	Japanese Honeysuckle
<i>Polygonum perfoliatum</i>	Mile-a-Minute
<i>Pueraria montana var. lobata</i>	Kudzu
<i>Rhus radicans</i>	Poison Ivy
<i>Vitis labrusca</i>	Fox Grape
SHRUBS	
<i>Buddleia species</i>	Butterfly Bush
<i>Rosa multiflora</i>	Multiflora Rose
TREES	
<i>Ailanthus altissima</i>	Tree of Heaven
<i>Paulownia tomentosa</i>	Empress Tree
<i>Pyrus calleryana 'Bradford'</i>	Callery/Bradford Pear

Robinia pseudoacacia (Black Locust), not listed above, shall be removed from: perennial and grass beds; within a 10 feet radius of a more desirable tree species; within 30 feet of bridge structures or travel lanes. Removal of Black Locust occurring outside of the clear zone and outside of the locations described above is not required.

Manual Removal equipment includes, but is not limited to, hand tools; lever based tools (Weed Wrench), machetes, power pruners/trimmers, chainsaws, metal blade brush cutters, brush axes/hooks, shovels, spading forks, loppers, hedge shears, and associated safety equipment as approved by the Engineer. Limited use of wood chippers and mowers may be applicable.

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Herbicide Application equipment includes, but is not limited to, backpack sprayers, spray bottles, wick-applicators, or approved equivalents.

Submit qualifications of key personnel who will be performing and/or supervising work on site, which includes, but is not limited to, Virginia Pesticide Applicator's Licenses in appropriate categories.

- (a) The Engineer, in consultation with the designer and designated specialist, may instruct the Contractor to perform NNI species management at any point during the project. Management may require manual removal or herbicide treatment, or both, depending on conditions.
- (b) The Contractor shall perform the work according to the plan and provisions in this contract. Delays to other components of the project will not be granted or allowed due to NNI species management. Provide sufficient manpower to execute all aspects of invasive management work concurrently with other work when necessary.
- (c) A pre-construction meeting shall be scheduled before commencing any invasive plant management operations. Notify the Engineer seven days before commencing any invasive species management work.
- (d) The areas designated for herbicide treatment shall be clearly flagged by the Contractor's personnel in the field and reviewed by the Engineer before commencing herbicide treatment activities. The Contractor shall be prepared to discuss NNI species management and native plant preservation methodologies during this field review.
- (e) Depending on the species specific protocol (type, size, density) and existing site conditions, mechanical/manual removal of NNI may or may not require an herbicide application. Smaller areas of NNI may only require manual removal; however subsequent herbicide application may be necessary to manage and avoid re-emergence.
- (f) Invasive species plant material shall be removed from the designated management areas or additional areas designated by the Engineer and disposed of offsite unless otherwise authorized by the Engineer.
- (g) The Contractor and Engineer will conduct field verification of invasive species plant removal after completion of the work to determine success. Payment will not be made until this verification is complete, and the removal is completed to the satisfaction of the Engineer.

Depending on species protocol specific area of the site (type, size, density), and the extent of the particular NNI, three different herbicide treatments shall be used: 1. Cut-Stem Herbicide Treatment (two methods: a. Cut tump/Stem b. Hack and Squirt) 2. Basal Bark Herbicide Treatment 3. Foliar Herbicide Treatment.

- (a) The Contractor shall possess and maintain a current Virginia Pesticide Business License issued by the Virginia Department of Agriculture and Consumer Services (VDACS) as required by the Virginia Pesticide Control Act (Title 3.1, Chapter 14.1, Section 3.1-249 of the Code of Virginia) and in accordance with rules and regulations set forth by the VDACS Pesticide Control Board (VR 115-04-22 & 23). The Contractor shall ensure that all personnel designated to open, pour, mix, or apply any pesticide and/or adjuvant during the performance of work under this contract shall possess a current Commercial (For Hire) Pesticide Applicator Certification valid for Category 6 (Right-of-Way Pest Control) issued by the Virginia Department of Agriculture and Consumer Services (VDACS). NOTE: Registered Technicians cannot open, pour, mix, or apply any pesticide and/or adjuvant during the performance of work under this contract. Provide daily herbicide application cards to the Engineer within 24 hours of application.
- (b) Marking dye shall be from a commercial source, herbicide compatible, and water soluble. Mix marking dye with all herbicide prior to application at rates necessary to be readily visible in the field for at least three days after application.
- (c) The Contractor shall replace and/or prune any native plant material killed or damaged by the Contractor in applying and handling of herbicide. Due to the nature of the herbicide treatment area and the density of invasive species some collateral damage to desired vegetation may occur.

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- (d) All herbicide applications shall be selective low volume herbicide treatments with a backpack sprayer, squirt bottle, injection gun, paint brush, or other methods approved by the Engineer. Broadcast high volume applications and equipment mounted spray operations shall not be permitted due to the potential for off-target drift.
- (e) Use extreme caution when spraying adjacent to off-target, non-invasive vegetation or directly adjacent to any waterways/wetlands. The Contractor is responsible for any negligence in applying and handling the herbicide on the project. Conduct herbicide application only during appropriate weather conditions as indicated on the product label as high winds, rain, spraying during high humidity and/or high temperatures can result in uptake by off-target vegetation.
- (f) The Contractor and Engineer shall conduct a field verification of herbicide application success inspection after completion of the work and within two weeks of application. No payment will be made until sign of invasive species die-back is observed. If initial application is unsuccessful the Contractor shall reapply herbicide treatment at no additional cost to the Department.

IV. MEASUREMENT AND PAYMENT

Invasive Species Management will be paid for at the contract lump sum price. This price shall include manually removing NNI, disposing of materials and applying herbicide. Seventy five per cent (75%) of the lump sum price will be paid upon completion and acceptance of manual removal and herbicide application Payment will be confirmed when a semi-annual inspection shows that regeneration management has been completed to the satisfaction of the Engineer. Twenty five percent (25%) of the lump sum price will be paid on the semifinal monthly progress estimate. Failure to perform and successfully complete required operations as frequently as needed will result in forfeiture of a percentage of payment that correlates to the unperformed or unsuccessful work as determined by the Engineer.

Payment will be made under:

Pay item	Pay Unit
Invasive Species Management	Lump Sum

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
SECTION 514 – FIELD OFFICE

July 3, 2023

SECTION 514 – FIELD OFFICE of the Specifications is replaced with the following:

514.01 – Description

This work shall consist of locating, procuring, preparing site, clearing & grading, furnishing, erecting, equipping, maintaining, bi-weekly cleaning and removing & restoring property upon completion a field office of the type specified for the exclusive use of Department Engineers and Inspectors at a location on the project approved by the Engineer. The Contractor may either provide a modular trailer or rent an office building accommodation to satisfy the field office requirements.

514.02 – Procedures

The field office and equipment as required herein shall remain the property of the Contractor.

The Contractor supplied Department field office shall be separated from buildings and trailers used by the Contractor and shall be erected and made functional as an initial operation. Failure to have the field office functional when work first begins on the project will result in the Engineer withholding payment of the Contractor's monthly progress estimate, except that the estimate will not be withheld if the Contractor has shown that the failure is not due to negligence on his part or for reasons beyond his control. The field office shall be operational throughout the duration of the project and shall be removed upon project completion and final acceptance. Furnishings and equipment specified herein shall be in sound and functional condition throughout the duration of the project.

The field office shall be weatherproof, tightly floored and roofed, constructed with an air space above the ceiling for ventilation, supported above the ground and anchored against movement. The width of the field office shall be at least 24 feet, and the floor-to-floor ceiling height shall be at least 7 feet 6 inches. The inside walls and ceilings shall be constructed of Masonite, gypsum board, or other similarly suitable materials as permitted by fire and building codes. The exterior walls, ceiling and floor shall be insulated. Field office shall be provided and outfitted as follows according to the type specified.

Type I Double Wide Field Offices shall have an enclosed floor space of at least 2880 square feet with 200 square feet of counter space and 240 square feet of overhead shelving. Two Double Wide Field Offices are required in this project. The field offices shall be connected via a continuous platform to allow for access to each office. The field offices shall be equipped with the following:

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Quantity	Item
4	Double pedestal desks, keyed, (approximately 66 inches by 40 inches) at least 2,640 square inches
10	Double-pedestal desks, keyed, (approximately 60 inches by 36 inches) at least 2,000 square inches
2	Plan and drafting tables (approximately 30 inches by 96 inches) with adjustable stool
8	Computer tables - 29 inch height, with surface area approximately 48 inches by 30 inches
10	4-Drawer metal fire protection file cabinets, 15-inch drawer width, minimum UL rating of Class 350
4	2-Drawer fire protection file cabinets, 15 inch drawer width, minimum UL rating of Class 350
4	Rolling Plan racks for 24 by 36 inch drawings with 6 plan clamps
4	Bookcases 36 inches by 42 inches with four shelves
2	Dry erase boards – wall mounted, minimum 15 square feet, with eraser and markers
1	Full Size frost free refrigerator
1	Medium Size microwave
1	Medium Size Toaster Oven
2	Printing calculators
18	Office Chairs, all with casters
12	Wastebaskets & furnish trash bags
6	Folding conference tables – minimum 36 inches by 96 inches
12	Folding chairs
2	Pencil sharpeners
2	Answering Machines
1	Facsimile Machine with optional memory including replacement print cartridges.
1	Copy machine with the following features: - Capability of copying 8-1/2" x 11", 8-1/2 x 14" and 11" x 17" sized originals - Bin sorter - Automatic Feed - Automatic paper size selection - Size magnification/reduction from 200% to 50% of original image size - Service contract with preventive maintenance, including drum replacement and toner supply
2	Computer laser printers, up to 25 ppm print speed, Min. 600 dpi x 600 dpi resolution, Capable of printing 11x17, USB connectivity, wireless capability & furnish all required supplies and maintenance.
2	All in One Color printers with USB connectivity & wireless capability & furnish all required supplies
2	Scanners capable of High speed Duplex Scanning better or meeting minimum of these requirements & furnish all required supplies and preventive maintenance contract: - Scanner face: Duplex, Sheet fed Color Scanner - Scanning Method: HCIS Technology or better, Front & back side. - Resolution: Min 600 dpi. - Scanning speed: 65 ppm @ 300 dpi min. B/W & color. - Color depth: 24-bit. - Grayscale depth: 4/8 –bit. - Document size: Min: 2.0x2.8": Max. 11.9 x 25" - Environment: PC Compatible - Document feeding Mode: Auto load up to 300 sheets. - Auto detection: Double-feed detection, Document feed detection, page length detection. - Accessories; CD-ROM (CD), drivers & Utilities for Windows. - Image output: Binary, Gray Scale, Color, Color & Binary or Gray & Binary

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2	First Aid kits containing eyes and skin protection for emergencies
2	Smoke detectors with batteries

The field office (Meeting) shall have a screen to project images for meetings.

- (a) **Windows and Doors:** The field office shall have at least three windows with removable screens and appropriately sized blinds or shades. Each window shall have an area of at least 540 square inches, capable of being easily opened and secured from the inside. All field office types shall have at least two exterior passage doors. Doors shall be at least 30 inches in width and 78 inches in height. Exterior passage doors shall be equipped with locks and at least two keys per door shall be furnished to the Engineer or Project Inspector.

In addition, each exterior door shall be equipped with a steel security bar that is installed horizontally and fabricated to lock with a 3/8" diameter padlock shank. The Department will furnish the padlocks for the security bars.

- (b) **Steps:** Steps shall conform to the requirements of the *State Building Code* and shall be maintained free from obstruction.
- (c) **Storage Facility for Nuclear Gage(s):** The field office shall be furnished with two outside storage facilities for the Department's nuclear gage(s), which shall not be located within 10 feet of any structure. This facility shall be provided with electrical power and shall be equipped for an interior switched light and one single-phase, 120V, 15 amps, grounded, weatherproof, duplex receptacle for recharging the nuclear gage(s). The storage facility for the nuclear gage(s) shall be weatherproof, tightly floored and roofed, having a tamper resistant key operated lock with two keys furnished to the Engineer or Project Inspector.
- (d) **Storage Facility for Test Equipment:** The field office shall be provided with a storage facility, separate from the office for storage of test equipment, other than the nuclear gage. The storage facility shall have a minimum floor space of 64 square feet and include four shelves at least 11 inches deep mounted along the length of one wall. The storage facility for test equipment shall be weatherproof, tightly floored and roofed, having a tamper resistant key operated lock with two keys furnished to the Engineer or Project Inspector.
- (e) **Lighting, Heating, and Air Conditioning:** The field office shall have satisfactory functional lighting, electrical outlets, heating equipment, an exhaust fan, and air conditioner connected to an operational power source. At least one of the light fixtures shall be a fluorescent light situated over the plan and drafting table. There shall also be at least one 100 watt exterior light fixture at each exterior doorway. Electrical power and fuel for heating equipment shall be furnished by the Contractor.
- (f) **Fire Extinguishers:** The Contractor shall furnish and maintain one fire extinguisher for each required exterior passage door. Fire extinguisher(s) may be chemical or dry powder, UL Classification 10B:C (minimum), suitable for Type A:B:C fires and shall be mounted and maintained in accordance with OSHA Safety and Health Standards.
- (g) **Toilets:** Toilets shall conform to the requirements of the state and local boards of health or other bodies or courts having jurisdiction in the area. A minimum of two toilet facilities should be provided inside the Field Offices. The Contractor shall provide two toilet facilities inside the Field Office, with a continuous supply of water at a flow rate of not less than five gallons per minute. The toilet facilities shall be connected to either a sewer line or a permitted sewage holding tank with sewage pumping at a frequency that prevents overflow and backups. The toilet facilities shall have a positive functional lock on the inside of the doors.

The Contractor shall provide washing facilities in accordance with VOSH regulations.

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(h) **Drinking Water:** The Contractor shall provide bottled drinking water service that includes a dispenser capable of providing both hot and cold water, and disposable cups in each field office. The Contractor shall cause the bottled drinking water service to replenish both bottled water and disposable cups no less frequently than twice per month.

(i) **Utilities:** Except for telephone services, the Contractor shall make arrangements for necessary utility connections, maintain utilities, pay utilities service fees and bills, and make arrangements for final disconnection of utilities. The Contractor shall also furnish two touch tone telephones in each field office and permit the work necessary to install them. Electricity provided to the field office shall be hard-wired into the local electric supply. The Contractor should apply for power connection immediately after the contract award in order to have the electric connection ready by contract execution/NTP date.

The Contractor shall furnish 4 telephones and hookups at each end of the field offices. There shall also be an additional telephone over each plan table. All telephones shall be capable of having at least two lines. The Contractor shall also provide a 100 Mbps Speed Internet connection with a compatible wireless modem and wireless router capable of at least ten simultaneous internet connections and network printer. The Contractor should apply for high speed internet connection immediately after the contract award in order to have the high speed internet connection ready by contract execution/NTP date.

(j) **Miscellaneous Items:** The field office shall also include the following:

1. A certification that the office is free of asbestos and other hazardous material.
2. A broom, dust pan, mop, mop bucket, general cleaning supplies, and trash bags.
3. An all-weather parking area for twelve vehicles and all weather graveled access to the public roadway. The Contractor shall maintain the parking area and graveled access such that it is passable with a compact sedan without causing vehicular damage. The parking lot shall be sufficiently lighted to illuminate all areas of the lot.
4. Security measures for the Field Office during and other than normal working hours shall be equivalent to that used by the Contractor for his job site and office facilities.

514.03- Measurement and Payment

Field office (Type) will be measured in months of actual use by the Engineer and Inspectors and will be paid for at the contract unit price per month. This price shall include furnishing, erecting, maintaining, cleaning and removing the field office when no longer required, and providing the facilities, furnishings, equipment, utilities and services as described herein. Payment for periods less than one month shall be based on the pro-rata days during the month in which the field office is in use by the Engineer, except that payment will not be made for any time in excess of the time limit established in the Contract as extended in accordance with Section 108.04 of the Specifications.

Installation and service fees for the telephone(s) will be paid for by the Department.

Payment will be made under:

Pay Item	Pay Unit
Field Office (Type I) Modified	Month

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
NATURALLY- OCCURRING ASBESTOS SOIL

May 22, 2023

Project No.: 0286-029-259, B628, B630, B631, B632, C501, D616, P101, R201

I. SITE PREPARATION

The Contractor is hereby advised that naturally-occurring asbestos is present in the soil (“naturally-containing asbestos soils”) of the project between Station 1128+90 and Station 1223+75. In-situ asbestos-containing soils shall be left undisturbed as far as practicable.

The Contractor shall plan and prosecute excavation, management and filling activities in such a manner as to be in full compliance with the applicable requirements of all federal, state and local agencies, including but not limited to the Virginia Department of Labor and Industry, Virginia Department of Professional and Occupational Regulation, US Environmental Protection Agency, and Virginia Department of Environmental Quality for the safe handling of this material.

Excavated or exposed naturally-occurring asbestos soils shall be adequately wetted at all times. “Adequately wetted” means sufficiently mixed or coated with water or other non-hazardous aqueous solution to prevent dust emissions. Where excavation is required, handling shall be minimized.

The Contractor shall provide the services of a qualified asbestos professional, licensed by the Virginia Department for Professional and Occupational Regulation (DPOR), to perform both perimeter and personal air monitoring for asbestos. The contractor shall ensure the availability and use of proper personal protective equipment (as necessary) for Contractor personnel. Perimeter air monitoring shall be performed on a daily basis. The asbestos professional shall certify that the perimeter monitoring test results are representative of environmental conditions during operational periods. These results and certification shall be provided to the Engineer for his project files. If the results of perimeter monitoring indicate levels that exceed the National Emission Standards for Hazardous Air Pollutants (NESHAP) standards, Contractor shall cease operations until additional preventative measures can be implemented to reduce airborne asbestos to below acceptable NESHAP levels.

II. Disposal

The Contractor shall ensure that naturally occurring asbestos soils, including any surplus naturally-occurring asbestos soils, are utilized in areas containing similar naturally-occurring asbestos soil or disposed in areas containing similar naturally-occurring asbestos soils.

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III. Measurement and Payment

Excavation will be measured and paid for in accordance with Section 303 of the Specifications.

Management of Naturally-Occurring Asbestos Soil will be paid at the lump sum contract price. This price shall include, but is not limited to: conforming to federal state and local requirements, for insurance, obtaining any necessary permits, decontamination or personnel and equipment, adequate wetting of excavated asbestos-containing soils, transporting and disposing of asbestos-containing soils, the services of a qualified asbestos professional and for all materials, labor, tools, equipment, air monitoring, laboratory analyses, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Management of Naturally-Occurring Asbestos Soil	Lump Sum

ORDER NO.: K58
CONTRACT ID. NO.: C0000107937C01

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
LOW PERMEABILITY LINERS FOR STORMWATER MANAGEMENT FACILITIES

October 7, 2011

I. DESCRIPTION

This work shall consist of placing a low permeability liner for Stormwater Management (SWM) Facilities at the locations designated on the plans and details. This Special Provision does not address placement of dam embankment material or clay core cut-off trenches.

II. MATERIAL

SWM liner soil shall be classified as CL, CH or MH in accordance with ASTM D 2487 and shall have a maximum coefficient of permeability of 1×10^{-6} cm/sec in accordance with ASTM D 5084, after compaction. The maximum particle size shall be three inches in its largest dimension. Natural soils, which do not meet these specifications, may be blended with bentonite to provide the specified permeability characteristics.

Geosynthetic Clay Liner shall have a maximum coefficient of permeability of 1×10^{-8} cm/sec in accordance with ASTM D 5887.

III. SUBMITTALS

The Contractor shall submit the following to the Engineer for each type of liner material for review and approval prior to use:

- (a) Soil classification tests and permeability test (ASTM D 5084) results of unmodified soils proposed for use as SWM liners
- (b) A mix design supported by laboratory testing for soils modified with bentonite.
- (c) A Source of Material and Manufacturer's Certification for geosynthetic liners.

IV. PROCEDURES

It shall be the Contractor's option as to the type of impervious liner to be used, i.e. natural clay, blended soil or geosynthetic material, unless otherwise noted on the plans. All areas to receive the impervious liner shall be free of organic, frozen, wet, soft or loose soils, fractured rock, or other deleterious materials. These areas shall be evaluated by the Engineer prior to placement of the liner material.

Natural clay liners shall have a final compacted thickness of no less than 12 inches. All lining material shall be placed in loose lifts with a maximum depth of 8 inches prior to compaction and shall be compacted to a minimum 90 percent of the maximum dry density (VTM-1) at, or up to 30 percent above, the optimum moisture content. Remove all stone larger than 7 inches in its maximum dimension from the liner subgrade or low permeability soil liner material.

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Ensure adequate moisture is present when using blended materials for a liner. Any material that does not meet the above moisture or compaction requirements shall be reworked, re-compacted and retested until the required moisture content and density are achieved. The Contractor, at no additional cost to the Department, shall complete Construction Quality Control field density and moisture tests at the rate of one test for every 500 square yards of material placed for low permeability liner construction. Complete a minimum of one compaction test for every lift of fill placed per day.

During construction, the Contractor shall protect the liner material from excessive drying. Place a minimum 12 inches layer of topsoil or other approved material over the liner.

V. MEASUREMENT AND PAYMENT

Low Permeability Liner will be measured in square yards, complete-in-place and will be paid for at the contract unit price per square yard. . This price shall include the cost of excavation, subgrade preparation, soil conditioning, blending, compaction, grading and moisture conditioning and all other items incidental to the work.

Topsoil Liner Cover Material shall be Class A Topsoil to the depth specified and will be measured in cubic yards and will be paid for at the contract unit price per cubic yard. This price shall include furnishing, loading, transporting and applying topsoil to the depth specified, finishing areas and restoring damaged areas prior to final acceptance.

No payment will be made for geosynthetic clay liners that become ineffective, or are damaged due to improper storage, or for bentonite used in blended soils.

Payment will be made under:

Pay Item	Pay Unit
Low Permeability Liner	Square Yard
Topsoil, Liner Cover Material (Class A, 12 inch Depth)	Cubic Yard

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CONTRACT ID. NO.: C0000107937C01

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
ESTABLISHING PERMANENT VEGETATION

July 14, 2021

I. Description

This work shall consist of performing secondary soil stabilization to work performed during construction. The work shall be performed after Final Acceptance and shall be necessary to complete establishment of Permanent Vegetation or Permanent Vegetative Cover in accordance with the Specifications and as directed by the Engineer. The work shall include repairing or regrading gullies, washes, and disturbed areas; applying permanent seed or overseeding; maintaining temporary erosion and sediment (E&S) controls during the Establishment Period including, but not limited to, cleaning out silt and replacing silt fence fabric; and removing temporary E&S controls at the end of the Establishment Period or when directed by the Engineer.

II. Definitions

1. **Establishment Period.** One calendar year, beginning on the Final Acceptance date on the C-5, during which the Contractor shall retain the responsibility of establishing permanent vegetative cover.
2. **Permanent Vegetation or Permanent Vegetative Cover.** Ground cover that is abundant, uniform, mature enough to survive, and that will inhibit erosion.

III. Requirements

1. **Establishment of Permanent Vegetative Cover** shall be the responsibility of the Contractor on all denuded areas not otherwise permanently stabilized before Final Acceptance. Full establishment of Permanent Vegetative Cover is not always possible before Final Acceptance. As such the Contractor shall retain responsibility for establishing Permanent Vegetation on the project during the one year Establishment Period.

Class B Topsoil shall be applied to all regraded and/or repaired areas to receive permanent seeding in accordance with Section 602 of the Specifications before permanently seeding unless otherwise specified.

The Contractor shall prepare any portions of the project that have not achieved Permanent Vegetative Cover for overseeding and then over seed, at least twice or as directed by the Engineer, in accordance with Section 603.03 of the Specifications.

The Contractor shall begin soil preparation and overseeding work within 14 calendar days of being notified by the Engineer that overseeding is required. All project areas identified by the Engineer and any other areas where Permanent Vegetative Cover is not permanently established shall be prepared and overseeded.

2. **Temporary erosion and sediment (E&S) controls** shall be maintained by the Contractor during the establishment period in accordance with Section 303.03 of the Specifications until final stabilization has been achieved throughout the project. The Contractor shall remove all temporary E&S controls from the portions of the project that have been fully stabilized before Final Acceptance and shall remove remaining E&S controls at the end of the Establishment Period unless otherwise directed by the Engineer. Any land disturbance resulting from the removal of the temporary E & S controls shall be graded and over seeded in accordance with this special provision.

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I. Measurement and Payment

Permanent Vegetative Cover will be paid for at the Contract lump sum price. This price shall include preparing areas that have not achieved Permanent Vegetative Cover by repairing gullies, washes, and disturbed areas; applying topsoil; and overseeding those areas or applying permanent seed and mulch as directed by the Engineer. The price shall also include maintaining temporary E&S controls including, but not limited to, cleaning out and disposing of silt, replacing silt fence fabric, and removing and disposing of E&S controls at the end of the Establishment Period or when directed by the Engineer. Payment will be made on the semi-final estimate. Acceptance of the payment shall obligate the Contractor to perform all work required to establish Permanent Vegetative Cover during the Establishment Period.

Failure to complete the Establishment Period work may result in the Contractor being disqualified in accordance with Section 102.08 of the Specifications.

Payment will be made under:

Pay Item	Pay Unit
Permanent Vegetative Cover	Lump Sum

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
SECTION 105.09 – COOPERATION AMONG CONTRACTORS

August 9, 2023

SECTION 105.09—COOPERATION AMONG CONTRACTORS is amended to include the following:

The Contractor shall not impede the progress of work by other contractors but shall cooperate and coordinate with other contractors for the timely completion of all construction activities. This shall include attendance at monthly coordination meetings or as deemed necessary or advantageous by the Engineer or the Contractor. If the Contractor asserts that any of the other contractors have hindered or interfered with the progress or completion of the Contractor's Work, then the Contractor's sole remedy will be to seek recourse against such other contractors.

The following projects will be under construction in the vicinity of this project:

UPC 111725 Popes Head Road Intersection; Projected Completion date: November 2026

Shirley Gate Road Extension from Braddock Road to the Fairfax County Parkway: Projected Completion date: December 2029

Fairfax County Parkway Widening – South Segment; Projected Completion date: August 2027.

UPC 110329 Route 29 Widening; Projected Completion date: August 2026.

The conceptual MOT plans, and project details for the above-mentioned projects can be made available to the bidders upon their request. Please note, the MOT plans are for information purposes only. However, in the event, there are changes to the aforementioned documents, the Contractor must accommodate the changes to their plan of operations without any compensation.

The Contractor shall coordinate all lane closures with any other Contractors working on other contracts in the vicinity of this project prior to submitting any request(s) for lane closure(s) to the Engineer. Of particular concern, but not limited to, is the potential for overlapping work zones and overlapping activity areas among contractors. Contractors shall avoid overlapping work zones ("Road Work Ahead" to "End Road Work"), closing dissimilar lanes (inside lanes to outside lanes). In case of conflict or when activity areas among contractors overlap, the Engineer will determine the work priority.

If the Contractor experiences delays due to the fault of another contractor while prosecuting the contract work, no additional compensation will be considered.

Coordination Meetings - The Contractor shall attend scheduled Coordination Meetings that the Department will chair. It is expected that intermediate commitments and benchmarks shall be jointly developed and mutually agreed to by the Contractor and other contractors and other agencies at these meetings. The content of these meetings may include but are not limited to reviews, analysis, and dialogue on:

- Planned contractor(s) operations
- Schedule coordination issues among projects
- Haul routes
- Contractor access issues
- Public access issues
- Lane closure schedules
- Environmental permit compliance
- Traffic switch coordination, scheduling, and implementation
- Opportunities for collaboration

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The bidder shall be responsible for contacting contractors regarding their anticipated schedules to complete the associated projects or key milestones of the associated projects they are working on.

No separate payment will be made to the Contractor for cooperating with other contractors and any other government or private agencies for construction of this project but the cost thereof will be considered incidental to the Work. This includes, but is not limited to, keeping apprised of other contractors' activities, sharing information, working collaboratively, attending Corridor Coordination Meetings and conforming to all other activities requiring cooperation and coordination efforts between contractors identified and associated with the Contract documents and this provision.

These list of projects and agencies are not meant to be exhaustive, but to provide examples of potential projects and other government and private agencies that would require coordination.

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CONTRACT ID. NO.: C0000107937C01

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
SOUND BARRIER WALLS / ARCHITECTURAL FINISHES

November 3, 2023

Project 0286-029-259, B628, B630, B631, B632, C501, D605, P101, R201 (UPC 107937)

SECTION 519 – SOUND BARRIER WALLS of the Specifications is amended as follows:

Section 519.01 Description is amended to include the following:

Sound barrier walls shall conform to the plans, Section 519 of the Specifications, and the provisions herein.

Section 519.01 (a) Acoustic Performance Standards is amended to include the following:

4. Ground-mounted sound barrier walls shall be precast concrete with a sound absorptive finish on the roadway side.

Section 519.01 (b) Design Standards is amended to include the following:

13. Failure on the part of the Contractor to acknowledge and address the requested changes after the second review request by the Department may result in the Department assessing further review costs to the Contractor and deducting such costs from monies due the Contractor on the next progress estimate.
14. The height of the sound barrier walls shall meet or exceed the elevation of sound attenuation line depicted in the plans except as may be minimally necessary to “step” panels due to changes in grade at wall locations.

Section 519.03 – Procedures is amended as follows:

Section 519.03 (a) Foundations is amended to include the following:

The Contractor is advised that the Department has not performed subsurface investigation to locate existing utilities on this project. Therefore, it shall be the Contractor’s responsibility to perform this work so as to avoid utility conflicts with the construction associated with the proposed sound barrier wall.

The geological data and soil parameters to be used for foundation design are shown on the plans.

Relative to the proposed sound barrier, the Contractor shall provide written notice to the Department of any anticipated utility impacts prior to performing the affected work.

Relative to the proposed Sound Barrier, the Department will not be responsible for any claims for additional compensation from the Contractor resulting from delays, inconvenience, or damage sustained by him attributable to interference by utility appurtenances or the operation of moving the Utilities.

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Section 519.03 (b) Piles and Post is amended to include the following:

Material, texture, and finish of the posts shall match the material, texture, and finish of the posts for the existing sound barrier walls associated with the Route 7100 - Fairfax County Parkway - Construct Interchange (UPC 52404) project. Welding of reinforcing steel to base plates shall not be allowed.

Section 519.03 (c) Panels is amended to add the following:

1. General Requirements

The color, texture, and finish of all ground mounted sound barrier walls constructed on the Project (both the roadway and landowner sides) shall match the color, texture, and finish of the existing sound barrier walls associated with the Route 7100 - Fairfax County Parkway - Construct Interchange (UPC 52404) project.

The Contractor shall endeavor to design the wall when traversing a grade in such a manner that the finish profile of the top panels shall be as uniform in height as possible.

The Contractor shall not proceed with production fabrication of panels or posts until such items are reviewed and accepted by the Engineer.

Architectural Treatments

1. General Requirements

- a. **Description:** This section covers the construction of textured and colored formed concrete surfaces using designed form liners, and color stain system designed to duplicate the appearance of standard architectural designs. The work covered by this special provision consists of constructing textured surfaces on formed concrete surfaces as indicated on the Plans and in this Special Provision. The Contractor shall furnish all materials, labor, equipment, and incidentals necessary for the construction of sound barrier wall panels and one standard federal color stain.
- b. **Quality Assurance:** A Pre-Installation Meeting shall be scheduled with manufacturer(s) representative to assure understanding of proprietary-themed form liners use, color application, requirements for construction of mockup, and to coordinate the work.
- c. **Submittals:** Shop drawings, including plans, elevations and details to show overall pattern, joint locations, and end, edge and other special conditions shall be submitted. Shop Drawings shall also indicate the Form Liner Supplier and Stain Supplier. Form ties, sample and description, showing method of separation when forms are removed shall be displayed on the shop drawings.
- d. **Job Conditions (Environmental requirements):** Apply color stain when ambient temperature is between 50 and 100 degrees F. Manufacturer shall be consulted if conditions differ from this requirement.

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- e. Schedule color stain application with earthwork and back-filling of any wall areas making sure that all simulated stone texture is colored. Delay adjacent plantings until color application is completed. Coordinate work to permit coloring applications without interference from other trades. Design and pattern of the concrete surface shall follow VDOT's architectural treatments standard drawings. Seam lines or match lines caused from two or more form liners coming together will not be apparent when viewing final wall.

2. Concrete Form Liners

- a. Suppliers are subject to compliance with requirements, suppliers offering products that may be incorporated into the Work include but are not limited to, the following:

Hunt Valley Contractors, Inc.

3705 Crondall Lane
Owings Mills, MD 21117
Telephone: (410) 356-9677
<http://www.huntvalleycontractors.com/>

Greenstreak

3400 Tree Court Industrial Boulevard
St. Louis, Missouri 63122
Telephone: (800) 325-9504
<http://www.greenstreak.com/>

Symons Corporation

200 E. Touhy Avenue
Des Plaines, Illinois 60018
Telephone: (847) 298-3200
<http://www.symons.com/index.htm>

- b. The materials used in construction of the architectural treatment shall comply with Section 519 for concrete materials and form work. Furnish, store, prepare, apply, and cure all materials according to manufacturers' directions specified for the intended use.
 - i. **Form Liners:** The form liners shall be a high quality re-usable product manufactured of high strength urethane, which attaches easily to the forming system. Single use form liners will not be acceptable for this project. The liners shall be capable of withstanding anticipated concrete pour pressures without leakage causing physical or visual defects. The liners shall be removable without causing concrete surface deterioration.

The Contractor is cautioned that the form oil shall be worked into all areas, especially pattern recesses. Form stripping methods and patching materials shall be compatible with the color system and be submitted to the Engineer for approval.

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- ii. **Form Liner Theme Patterns:** The pattern for the architectural treatment for sound barrier walls for this project is shown in the project drawings. The dimension of form liners reveal from the outermost face of stone to the inside face of the grout joint shall be 2" on average with a 3" maximum. Specific form liner designs vary in finish pattern relief from ½" to 1 ½". The form liners are designed to provide an architectural treatment to a sound wall or as determined by project requirements. Any proposed segments shall be shown on shop drawing submittals. Any variation in the length of the form liner modules shown on the Contract Documents shall be accommodated by adjusting (splicing in a matching textured liner or removing a segment and blending the joint) of the form liner without impacting the overall appearance of the pattern. Any field adjustment shall be done within the body of the pattern and not allow joints to line up between modules.
- iii. **Form Release Agents:** The form release agent shall be a non-staining petroleum distillate free from water, asphaltic and other insoluble residue, or equivalent product. Form release agents shall be mutually compatible with the color system to be applied.

3. Construction

General: Construct architectural treatment where shown in accordance with Section 519.03.

Maintain consistency of appearance among all surfaces treated according to this Section. The Engineer will visually inspect the element of work to which the architectural finish is applied, and upon the Engineer's approval of the appearance, that element of work will become the standard to which all other treated surfaces will be compared for acceptance.

The Engineer may reject any article whose appearance does not, in the sole judgment of the Engineer, provide the required level of visual consistency with the initially approved work.

- a. **Shop drawings:** Prior to beginning any work for the concrete to receive the simulated stone finish, working drawings representing the full size of the unit shall be provided for the simulated stone form liner pattern. The working drawings shall be drawn at a scale sufficient to show the detail of all stone and joint patterns, and the layout of the finish pattern.

The working drawings shall be submitted to the Engineer for approval. Any revisions to the working drawings shall be performed at no additional cost to the Department.

- b. **Sample panel:** Once the representative working drawings have been approved, the Contractor shall then provide and erect on site an 8'-0" high x 24'-0" long x 8" thick sample panel for specified theme form liner pattern. The sample panel shall be unreinforced and shall be constructed with all materials including form or wall ties proposed for use for constructing the predetermined architectural finish. Sample panels deemed unacceptable by the Engineer shall be removed from the project and replaced by additional sample panels at no additional cost to the Department.

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The location of the sample panel shall be readily visible from the proposed work where possible and placed as approved by the Engineer. The sample panel approved by the Engineer shall remain on the site as a basis for comparison for the work constructed on the project. All work constructed on the project shall duplicate this sample panel in form, architectural surface treatments, and appearance (texture, size, joint dimension and stone size). The Contractor shall dispose of the sample panel at the completion and acceptance of all work pertaining to the architectural treatment as determined by the Engineer.

- c. **Architectural finish:** Form liners shall be installed, prepared, stripped, handled or otherwise utilized in conformance with the manufacturer's recommendations, or as directed by the Engineer.
- d. **Form Liner Preparation:** Form liners shall be securely attached to forms in accordance with the manufacturer's recommendations, with less than a ¼" seam. Blend form liner butt joints into the concept-themed pattern and finish off the final concrete surface. Create no visible vertical or horizontal seams or conspicuous form liner butt joint marks. At locations where the form liners are joined, carefully blend to match the balance of the concept-themed pattern. The Contractor shall have a technical representative from the form liner manufacturer on site for technical supervision during the installation and removal of form liners. Unless directed by the Engineer, installation and removal of form liners shall not be permitted if the technical representative is not present.

Form stripping and related construction shall avoid creating defects in finished surface.

- e. **Form Release:** Form release agent should be worked into all areas, especially pattern recesses.
- f. **Finishing:** All form tie holes and other defects in finished uncolored surface shall be repaired in accordance with Section 519.03.

Reinforced concrete shall be finished in accordance with the VDOT Road and Bridge Specifications except that curing of concrete should be done to accommodate the application of coloring and surface finish treatment.

- g. **Grout Pattern Joints:** Grout pattern joints shall be constructed to simulate the appearance of mortared joints produced in laid up masonry work. Grout pattern joints shall be produced in accordance with the form liner / concrete color system manufacturer.

4. Color Stain Coating

- a. **Description:** This work shall consist of furnishing and applying color stain coating in accordance with this provision and in conformity with the details and locations indicated on the plans
- b. **Detail Requirements**
 - i. **Locations:** Except as otherwise specified on the plans, the color stain coating shall be applied to all sound wall architectural treatments. Copings, parapets, overhangs, decks, barriers, etc. shall NOT have the color stain coating applied unless otherwise specified on the plans.

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- ii. **Procedures:** The concrete stain coating shall be applied in accordance with the manufacturer's recommendations, except as otherwise specified. The color surface color coating shall not be applied until all concrete placement operations for the particular structure have been completed. The concrete surface shall be clean, free of any curing agents, form release agents, foreign substances, or signs of efflorescence at the time of application.

All work shall be performed by experienced workmen familiar with concrete finishing work and with the materials specified. Surfaces not to be treated shall be protected from splatter.

Materials shall be delivered to the job site in sealed containers bearing the manufacturer's labels. Materials shall be mixed and applied in accordance with the manufacturer's printed instructions of which two copies shall be furnished the Engineer.

All architectural treatment surfaces that are to be stained and any patching that have been done in these areas shall be at least 30 days old.

Clean surface prior to application of stain materials to assure that surface is free of latency, dirt, dust, grease, efflorescence, paint, or other foreign material, following manufacturer's instructions for surface preparation. Do not sandblast. Preferred method to remove latency is pressure washing with water, minimum 3000 psi (a rate of three to four gallons per minute), using fan nozzle perpendicular to and at a distance of one or two feet from surface. Completed surface shall be free of blemishes, discoloration, surface voids, and unnatural form marks.

- iii. **Protection:** Where exposed soil or pavement is adjacent which may spatter dirt or soil from rainfall, or where surface may be subject to over spray from other processes, provide temporary cover of completed work.

Measurement and Payment

The quantity of sound barrier walls will be in units of square feet of sound barrier wall, absorptive per limits shown on the plans. Sound barrier wall, absorptive will be measured and paid for in accordance with Section 519 of the Specifications, including the cost for sound wall concrete finish and color coating as described in Section 519 shall be incidental to that portion of sound barrier wall, absorptive. Retaining walls for sound barrier shall be incidental to that portion of sound barrier wall, absorptive as indicated on the plans.

Pay Item	Pay Unit
Sound Barrier Wall, Absorptive	Square Foot

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
HIGH FRICTION EPOXY AGGREGATE SURFACE TREATMENT

August 28, 2023

I. DESCRIPTION

This work shall consist of furnishing and applying epoxy and calcined bauxite aggregate on pavement surfaces to provide a high friction surface.

II. MATERIALS

1. Epoxy Binder

The binder shall consist of a two part exothermic epoxy resin and conform to the requirements of Type EP-7 in Section 243 of the Specifications and minimum 250 psi adhesive strength at 24 hours tested by VTM-92, as certified by an independent laboratory.

2. Aggregate Surface Topping

The calcined bauxite aggregate shall meet the requirements in Tables 2 and 2A, as certified by the manufacturer. The aggregate shall be clean, dry, and free from foreign matter.

Table 2
Aggregate Requirements

Property	Test Method	Specification Limits
Aluminum Oxide Al ₂ O ₃ content	ASTM C25	87 % minimum
Polish Susceptibility (Micro-Deval)	ASTM D7428	5% Loss maximum
AAV (Aggregate Abrasion Value)	AASHTO T 96 Grading D	20% maximum
Moisture content	AASHTO T 255	0.2 % maximum
Aggregate Gradation	AASHTO T 27	Table 2A

Table 2A
Percent by Weight of Material Passing, AASHTO T 27

No. 4 Sieve	No. 8 Sieve	No. 16 Sieve	No. 30 Sieve
100	30-75	Max 5	Max 1

III. CONSTRUCTION METHODS

1. Quality Control Plan

The installer shall submit a HFST Quality Control (QC) Plan to the Engineer a minimum of 30 days prior to planned HFST placement. The QC Plan shall include, at a minimum, the following information:

- Binder producer’s application instructions.
- Schedule for the trial HFST work and production of HFST work.
- Key personnel and contact information.

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- Polymeric resin production plants, location of plants, personnel qualifications and certifications, inspection and record keeping methods, equipment calibration records, and accreditation certificates.
- Calcined bauxite aggregate production plan locations, personnel qualifications, inspection and record keeping methods, equipment calibration records, and accreditation certificates.
- Name of the accredited independent testing laboratory.
- All certifications and test results required by this specification.
- Methods to control aggregate moisture.
- Description of equipment for placing HFST.
- Method of application for measuring, mixing, placing, and finishing HFST with calibration records.
- Method for protecting areas not to receive HFST.
- Description of acceptable environmental conditions for placing HFST.
- Cure time and time to open to traffic estimates for HFST as a function of temperature.
- Method for determining cure for opening to traffic.
- Procedures for storage of material, weather restrictions, curing time, and opening to traffic.
- Disposal and recycling of excess HFST and containers.
- Contingency plan for possible failure during the HFST application.
- Corrective actions to be taken for unsatisfactory construction practices and deviations from specifications.

The QC Plan must be approved by the Engineer prior to the contractor placing any HFST.

A manufacturer's representative shall be present at the construction site prior to placing the HFST to answer questions and provide advice and support and shall remain on the project for the first two days of paving. After the first two days, the representative shall be available during HFST application as necessary.

The QC Plan shall designate a QC Manager, who shall have full authority to institute any action necessary for the successful operation of the QC plan. The QC Manager shall be on the jobsite at all times during placement of the HFST. Any deviation from the approved QC plan shall be cause for immediate suspension of operations. Do not begin HFST trial until authorized by the Engineer in writing.

2. Trial Application

A successful trial HFST strip shall be installed and approved by the Engineer before starting HFST production. The trial section may be within the project limits or other area approved by the Engineer.

The HFST trial shall:

- Be at least 50 feet long and equal to the production width.

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- Be constructed using the same equipment as the production work.
- Replicate field conditions, including ambient and surface temperatures (within $\pm 15^{\circ}\text{F}$), anticipated for the production work.
- Demonstrate surface preparation requirements.
- Remove or cover and protect pavement markings and delineation within the area to receive HFST, for the lane and length involved prior to placing polymer resin binder.
- After calibrating the equipment, document the setting on the applicator equipment, initial quantities of resin and aggregate, and unused quantities of resin and aggregate remaining in the applicator equipment after applying the HFST.
- Verify the polymer resin binder film thickness prior to aggregate placement and determine the initial set time for polymer resin binder in HFST.
- Demonstrate epoxy is covered to excess with aggregate.
- Demonstrate loose aggregate can be removed.
- Demonstrate that work can be completed within the lane closure time permitted.
- Provide a minimum skid resistance (SN40S) of $\text{SN} \geq 70$.
- Provide an adhesive strength ≥ 250 psi or 100% substrate failure.

Remove and dispose the HFST materials if quality is unacceptable at no additional cost to the Department. Acceptable trial strip sections within the project limits may remain in place.

The Contractor shall not begin HFST production until successful completion of the trial HFST and authorized by the Engineer.

3. Application Conditions

Do not apply the epoxy binder on a wet surface or when the anticipated weather conditions would prevent the proper application of the surface treatment according to the manufacturer's instructions. The temperature of the surface and all epoxy and aggregate components shall be 60°F or above at the time of application.

4. Surface Preparation

Surfaces shall be clean, dry, and free of all dust, oil, debris, and any other material that might interfere with the bond between the epoxy resin binder material and existing surfaces. Adequate cleaning of all surfaces will be determined by the manufacturer's representative and approved by the Engineer. Utilities, drainage structures, curbs and any other structure within or adjacent to the treatment location shall be protected from the application of the surface treatment materials. All existing pavement markings that are adjacent to the application shall be covered and protected. Pavement markings specified to be removed shall be removed in accordance with Section 512 of the Specifications before the epoxy binder application. Pavement markings which are not specified to be removed shall be covered or otherwise protected from epoxy during HFST placement. Pre-treat joints and cracks greater than 1/4 inch in width with the mixed epoxy specified herein when automated application equipment is used to place the HFST. Once the epoxy in the pre-treated areas has gelled, the epoxy binder and aggregate topping installation may proceed.

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The roadway surface shall be completely dry prior to installation of the HFST, according to ASTM D 4263. A 2-hour minimum test duration is allowed in lieu of the specified 16 hours.

a. Asphalt Concrete

For applications on new asphalt, a mandatory 30-day cure period shall take place prior to the installation of the HFST. Clean existing asphalt surfaces by use of mechanical vacuum sweepers, high pressure air or other methods outlined in the QC plan. Surfaces may need to be washed with a mild detergent, and then rinsed and dried using a hot compressed air lance.

b. Hydraulic Cement Concrete

Clean concrete surfaces in accordance with Section 431.03 of the Specifications. Final cleaning shall include removing dust, debris, and deleterious material with clean and dry compressed air discharged at a minimum of 180 cubic feet per minute. The surface shall comply with the International Concrete Repair Institute (ICRI) CSP 5 surface roughness standard.

5. Equipment: Automated and Semi-automated Application

Automated continuous application shall be performed by an applicator vehicle with a minimum aggregate capacity of 14,000 lbs and a minimum capacity of 500 gallons of the epoxy binder. The applicator shall heat, continuously mix, meter, and apply the epoxy binder and bauxite aggregate.

The applicator vehicle shall utilize continuous pumping and portioning devices that blend the epoxy binder within a controlled sealed system. The epoxy binder shall be blended and mixed in the ratio per the manufacturer's specification (+/- 2% by volume); the epoxy binder shall be continuously applied once blended. The application vehicle should be capable of a minimum epoxy binder application rate of 10 gal/per minute with a minimum uniform application thickness of 50 mils.

The bauxite aggregate shall be applied by an automated continuous application vehicle that applies the resin binder to the pavement section. The automatic aggregate spreader shall be capable of applying up to a continuous 12 foot width application. The bauxite aggregate shall be applied within 3 seconds (+/- 1 sec) of the base resin binder application onto the pavement section, from a minimum height of 12 inches from above the pavement section surface, at minimum continuous rate of 11 lbs per square yard of coverage. The use of chip spreaders, vehicle tires, rollers or vibratory compactors shall not be allowed on the applied epoxy binder and high friction aggregate during the application process. After the material has cured, and the Contractor has swept, and reclaimed all loose aggregate, the roadway may be opened to vehicular traffic.

The automated continuous applicator vehicle shall be capable of the uniform application of the bauxite aggregate treatment at a minimum continuous application rate of 2,000 square yards per hour. No exposed wet spots of the epoxy binder shall be visible once the aggregate is installed. The operations should proceed in such a manner that will not allow the mixed material to separate, cure, dry, be exposed or otherwise harden in such a way as to impair retention and bonding of the high friction surfacing aggregate.

The excess aggregate can be reused; the aggregate shall be reclaimed by a suction sweeper, the recovered aggregate must be clean, uncontaminated, and dry prior to re-use.

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6. Application Rates

Epoxy shall be applied at the minimum thickness shown in Table 3.

Table 3
Epoxy Application Minimum Thicknesses

Macro-texture depth, in (ASTM E 965)	Minimum epoxy application rate, mils
<0.04	50
0.04 – 0.06	75
>0.06	2 applications @ 50

The application shall be uniform in thickness with no areas thicker than 100 mils other than areas that were pretreated.

Bauxite aggregate shall be applied to excess over the area in which the epoxy has been applied.

7. Curing Specifications

Each course of the HFST shall be allowed to cure in accordance with manufacturer instructions prior to opening to traffic.

Areas of HFST subjected to any form of contact (walking, standing, or scraping the surface) or contamination with the uncured resin prior to the application of aggregate, without the use of spiked shoes to minimize disturbance of the binder layer, shall be removed and replaced at no additional cost to the Department. Areas of HFST subjected to traffic or equipment during the curing period shall be removed and replaced at no additional cost to the Department.

8. Resweep

All installation sites, including travel lanes and shoulders, shall be reswept 24-36 hours after initial installation to remove any excess bauxite shed from the installation. Any material recovered from the resweeping operations shall not be reused on the project and shall be disposed of in accordance with Section 106.04 of the Specifications. Additional resweeping and disposal of excess material beyond the 36 hours shall be performed as directed by the Engineer at no additional cost to the Department.

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IV. ACCEPTANCE TESTING

Friction and Adhesion Requirements

The final surface shall meet the requirements for skid resistance and adhesion as shown in Table 4.

Table 4
Requirements for Friction and adhesion

Property	Test Method	Min number of tests per site¹	Specification Limits	Responsibility
Skid Resistance (SN40S)	VTM-122 ²	1	SN ≥ 70 ³	VDOT
Adhesive Strength	ASTM C1583	3	250 psi min ⁴ or 100% substrate failure	Contractor

¹Site: A lane of a section that is representative of a day's production.

²VTM-122 = ASTM E274 (locked-wheel) with ASTM E524 (smooth) test tire.

³Average test result for site.

⁴Average of tests on three 2-in diameter cores taken from a lane of a section that is representative of a day's production.

The installed system shall exhibit a minimum skid resistance (SN40S) of SN ≥ 70. The skid testing will be conducted within 90 days of the completed project installation.

When the average SN for a site is less than 70 but equal to or greater than 50, the payment to the Contractor will be determined as follows:

$$\text{Adjustment} = (\text{Contract Price}) \frac{70 - (\text{Average SN for site})}{70}$$

$$\text{Payment to Contractor} = \text{Contract Price} - \text{Adjustment}$$

Surface applications with SN less than 50 shall be corrected as approved by the Engineer at no additional cost to the Department.

Additionally, applications that contain unacceptable blemishes from raveling, delamination, streaking, or other deficient characteristics that result in a non-uniform appearance as determined by the Engineer shall be corrected. The Contractor shall submit a proposed corrective action plan for the Engineer to review and approve at least 10 days prior to corrective work taking place. Unapproved corrective work will not be allowed.

Cores for adhesive strength testing shall be taken and tested as soon as practical following the application. The cause of a failing test result shall be determined and additional applications shall not be made until corrective actions are taken to reduce the incidence of additional failures. A site with a result less than 250 psi shall be removed unless it is 100% failure of substrate, and a new application shall be placed at no cost to the department.

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V. MEASUREMENT AND PAYMENT

High Friction Epoxy Aggregate Surface Treatment will be measured in square yards including a successful trial section and paid for at the Contract square yards price. This price shall include materials, procurement, handling, hauling and processing, sampling and QC testing, surface preparation, removing existing pavement markings and excess aggregate as needed, cleanup, and includes all equipment, tools, labor, and incidentals required to complete the work. No deduction will be made for the areas occupied by manholes, inlets, drainage structures, pavement markings, or by any public utility appurtenances within the area.

Payment will be made under:

Pay Item	Pay Unit
High Friction Epoxy Aggr. Surf. Treatment	Square Yard

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
HIGH TENSION CABLE BARRIER SYSTEM

August 24, 2023

0286-029-259, B628, B-630, B631, B632, C501, D-605

I. DESCRIPTION

The work includes furnishing and erecting a high tension cable barrier system and all necessary appurtenances. The work shall conform to the lines, grades, and locations shown on the Plans or as directed by the Engineer. The cable barrier shall be placed in accordance with the cable system manufacturer's instructions and in accordance with the VDOT-approved shop drawings and submittals prepared by the manufacturer of the cable barrier system.

Unless provided for on the plans, the work covered by this special provision includes only that work necessary to install the cable barrier system and appurtenances. It includes the following:

- Furnishing and placement of concrete foundations for the anchors and line posts.
- Providing and installing the cable system and all hardware and appurtenances for a complete and functional cable barrier system.
- Conducting installation training prior to the installation of the barrier system and maintenance training after installation of the system.

II. SITE INFORMATION

It is the Contractor's responsibility to supply the cable barrier manufacturer with any soil information needed to design the cable barrier system. All soil information gathering shall be considered incidental to construction of the cable system. Any geotechnical information provided by the Department will be for informational purposes only and shall not be used for design. The Contractor is responsible for evaluating actual project site soil conditions.

III. SUBMITTALS

1. Submittals listed below shall be submitted electronically to the Engineer at least 30 days before initiating work.
2. Provide FHWA acceptance letters for National Cooperative Highway Research Program (NCHRP) 350 compliance for the cable barrier system, anchors, and all appurtenances. The system shall be approved for Test Level 3 (TL3) for 2:1 to 6:1 side slope and accepted by FHWA as such.
3. The cable system manufacturer shall be responsible for the design of any transitions between existing guardrail and the cable system. This design must be submitted to the Engineer at least 30 days prior to beginning work and be approved by the Engineer prior to beginning work on the barrier. The cable shall not be tied to any guardrail or bridge structure but must be "overlapped" in a manner approved to the Engineer.
4. Provide manufacturer's drawings and installation manuals for all components proposed for installation.
5. Provide manufacturer's guidelines and instructions for repairs that may be required to the cable system and all appurtenances following a vehicle hit.

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6. Submit material specifications and technical data information on all cable barrier system materials proposed for use on the project.
7. The design of the cable system termini, depth and size of line posts, concrete footings, and the concrete end-anchors shall bear the seal of a Professional Engineer holding a valid license to practice engineering in the Commonwealth of Virginia.
8. Provide an Installation Plan, with schedule, for the barrier. The Installation Plan shall be linked to the Transportation Management Plan for the project and shall be subject to the approval of the Engineer.
9. A preconstruction conference with all parties shall be held at least 30 days before starting the barrier system installation work. At that time, all materials and methods must have been approved by the Engineer. At the preconstruction conference meeting, a representative of VDOT Central Office Location and Design Section will be present.

IV. CABLE BARRIER SYSTEM

1. The cable barrier system and anchors shall consist of, pre-tensioned wire rope (cable), steel line posts set in concrete sockets, end-anchors and all fittings meeting National Cooperative Highway Research Program (NCHRP) Report 350 for Test Level 3 for approach slopes of 4H:1V and be accepted by FHWA for that condition.
2. The cable system shall be 4 wire ropes with post spacing at 8 feet or less as approved by the Engineer.
3. The specified maximum post spacing of 8 feet shall be met along the entire length of each cable barrier segment between end anchors.
4. The cable barrier system shall be designed so that line post repairs following a vehicle hit can be made quickly by two maintenance technicians using readily available hand tools. In addition, the cable barrier manufacturer shall provide written repair instructions for all elements of the cable system including the cables, anchors, and connections. All repair instructions shall be provided in an electronic version and in a printed and bound version (minimum 2 copies).
5. The cable system shall be designed such that no metal/steel locking or supporting appurtenances are required to maintain cable spacing.
6. Materials
 - A. The wire rope shall be galvanized, 3/4"-3x7 meeting requirements of AASHTO M30-92 Type I, Class A coating with minimum breaking strength of 39,000 pounds. Wire rope shall be pre-tensioned. Wire rope segments within continuous cable barrier runs will be limited to 1,050 feet maximum and swaged connections will be required. Contractor shall provide a Certificate of Quality from the wire rope manufacturer with each cable spool specifying breaking strength, modulus of elasticity and the amount of force used to elongate the wire rope.
 - B. Provide factory swaged threaded anchors for connecting the wire ropes at the turnbuckles.
 - C. Threaded anchors, turnbuckles and fittings shall be galvanized after threading and meet the requirements of ASTM A-153. The fittings shall be designed for the cable arrangement used and fully fitted connections shall have a minimum breaking strength of 36,800 pounds, certified by test reports that shall be submitted to the Engineer.

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- D. The line posts shall meet the manufacturer's specifications and be consistent with the post size specified in the FHWA NCHRP-350 acceptance letter. Furnish steel posts meeting the requirements of ASTM A-36 galvanized to ASTM A-123 requirements following fabrication. The posts shall be designed to hold the wire at the designed height. The posts shall be inserted in galvanized metal sockets or sleeves conforming to the manufacturer's design. Provide a low density polyethylene (or similar type material) excluder profiled to fit tightly around the post to prevent debris from entering the sockets.
- E. All materials including wire rope, fittings, posts, reflectorized spacers or post caps, and anchors shall meet the approved manufacturer's specifications and details and shall be approved by the Engineer prior to installation.
- F. "Open wedge" connections as allowed on VDOT Standard GR-3 low tension cable systems shall not be used. Swaged fittings shall be required. Connections at anchorages needed to field adjust the cables may be "closed wedge" compression type fittings.
- G. Any damage (break in the coating) to exposed steel or metal that is required to be galvanized shall be repaired or retouched to the satisfaction of the Engineer or shall be replaced with fittings or materials with the factory coating intact and with the additional rust inhibitor where required.
- H. Rust inhibitor coating material shall be in accordance with the materials, application, installation, and warranties or an approved equal in color, quality, and durability of materials to the following acceptable product:

RUST-OLEUM® TRUCK BED COATING
Manufacturer:
Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, Illinois 6006
Phone: 866-585-8430
www.rustoleum.com/automotive

V. CONSTRUCTION METHODS

- 1. Installation of the cable barrier line posts
 - A. Any grading and excavation shall be completed to finished line and grade prior to installation of the line posts.
 - B. Excavate for line posts in accordance with the approved manufacturer's drawings. Each post shall be at the proper location, elevation, alignment, and depth as proposed and approved. Excavation of line post footings shall be performed to place Class A3 concrete in undisturbed soil for the bottom and sides. In the event backfill is necessary, VDOT specification procedures must be followed to achieve the proper backfill method and compaction. Size and depth of footings shall be as approved by the Engineer but shall not be less than 14" diameter and 36" deep (14"x36") unless larger sizes are recommended by the manufacturer and approved by the Engineer.
 - C. The galvanized steel line post sleeves shall be placed in Class A3 concrete (meeting VDOT standards) sockets and footings in accordance with the approved manufacturer's drawings. Footings shall have reinforcing bars in accordance with the manufacturer's approved shop drawings.

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- D. Any portion of the line post below ground level and up to 6 inches above ground level shall be coated with rust inhibitor. The line post shall have no less than two layers of rust inhibiting coating. There shall be complete coverage. A post shall be rejected if any of the coating is damaged or missing exposing the metal within the coverage area. The Engineer has the option for additional rust inhibitor coatings for locations know to have a high use of roadway deicing chemicals. The Engineer can also require additional rust inhibitor coatings for areas known for a high percentage of vehicle impacts providing additional coating durability due to movement within the concrete socket of undamaged posts near the impact.
- E. The line posts shall be set in the line post sleeves paying close attention to the horizontal and vertical alignment of the posts. It is critical that the posts be set to achieve the proper wire rope height. Line posts shall be set to achieve the vertical and horizontal tolerances set by the manufacturer in the approved shop drawings and installation manuals. Posts and foundations not set at the proper line and grade shall be replaced prior to the installation of the wire rope.
- F. Delineators shall be installed on the tension cable barrier system posts in accordance with Section 702 of the Specifications for guardrail delineators installed on cable guardrail systems, except with regards to spacing. Delineators shall be installed on the 5 posts nearest each end of the terminal. Delineators shall also be installed throughout the remainder of the system length at spacing of 80 feet in tangent sections and 40 feet in curved sections. Where this spacing cannot be obtained due to post spacing, the delineators shall be installed to provide spacing that is not greater than that specified. The reflective sheeting shall be applied only to the side of the delineator facing traffic. Reflectors must be an integral part of the system and no separate posts shall be installed. Alternative delineator systems will be considered subject to the approval of the Engineer.

2. Installation of Anchors

- A. Install anchors in conformance with the requirements of the cable system manufacturer's instructions and as approved by the Engineer.
- B. Anchors shall be placed in excavations of natural, undisturbed ground, to size and shape required by the manufacturer based on soil and ground conditions at the site. If over-excavation is unavoidable as verified by the Engineer prior to installation of the concrete, the sides must be vertical and additional concrete shall be used to completely fill the excavated areas. Any other means or methods will be subject to the approval of the Engineer.
- C. Provide an anchor for each separate connection for each separate run of cable. Cables shall only be tied to an approved terminal and shall not be tied to any new or existing guardrail, bridge structure or other unapproved object.
- D. No incomplete runs subject to traffic shall be left overnight or unprotected. At the end of each working day, any section started shall be completed by the end of the day if the roadway is under traffic.
- E. Any end-anchor movement exceeding 1 inch within 12 months of complete installation shall require re-construction and re-tensioning of the system by the Contractor as directed by the Engineer at no additional cost to the Department.

3. Installation of the wire rope

- A. The wire rope shall be installed at the elevation and proper height as approved in the manufacturer's design and approved drawings.

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- B. Tension shall be applied meeting manufacturer's recommendations. Check the tension per manufacturer's recommendations.
- C. Three weeks after the initial tensioning, check and adjust the tension as necessary. This and subsequent checks and tensioning required by the Engineer shall be at no additional cost to the Department.
- D. Maintain a tension log showing time, date, location, cable temperature, ambient air temperature and final tension reading, signed by the person performing the tension testing. The log will be reviewed to verify that the measured tension matches the temperature/tension chart provided by the manufacturer and is within the stated variance. The log shall be provided to the Engineer after tensioning is complete.
- E. The number and location of splices will be subject to the approval of the Engineer. Splices shall be staggered in accordance with the manufacturer's instructions. Cable splices shall be made in accordance with the cable manufacturers' instructions.

VI. MAINTENANCE DURING CONSTRUCTION

- 1. Once the cable system has been erected the cable and that section of roadway returned to traffic, the Contractor is responsible for maintaining and repair of the cable barrier system until final acceptance of the entire project. Should the cable barrier be damaged by the traveling public, the Contractor shall repair the barrier within 24 hours. The cable barrier posts shall be replaced, and the cable reinstalled to the post. If that section of cable has been inspected and certified to by the manufacturer before the damage occurs, the cable shall be re-inspected and recertified as required for the initial installation.
- 2. All repairs made to the cable barrier or anchors, no matter the cause of the repair, prior to final acceptance, shall be considered incidental to construction.

VII. MEASUREMENT AND PAYMENT

- a. **High Tension Cable barrier** will be measured and paid for at the Contract unit price per linear foot, beginning at the attachment point to an end terminal and ending at the attachment point to the other end terminal. This price shall be full compensation for furnishing and installing, all materials, soil borings, soil testing, foundation, foundation design, anchor design, furnishing, installing, tensioning, re-tensioning, and training.
- b. **Anchors** will be measured and paid for at the Contract unit price per each assembly, complete and in place and shall be total compensation for all materials, foundation design, and installation.

Pay Item	Pay Unit
Guardrail - High Tension Cable Barrier	Linear foot
Guardrail - High Tension Cable Barrier Anchor	Each

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
POND AERATOR

September 14, 2023

FAIRFAX COUNTY PARKWAY (RTE 286) WIDENING – SEGMENT II
PROJECT UPC: 107937

I. DESCRIPTION

This work shall consist of placing solar-powered submersible aerators in the three Level II wet pond Stormwater Management (SWM) Facilities at the designated locations as shown in the plans and details. The size of the aerator is determined by on the total surface area of the permanent pool, and on the depth, which is measured at the riser from the bottom of the permanent pool to the low flow orifice. The surface areas and permanent pool depths are noted on the Stormwater Management facility detail sheets.

II. MATERIAL

The aerators shall be of a size consistent with industry standard for providing aeration treatment required by the pond size. The device shall be a solar powered submersible system that shall function to treat the permanent pool surface area and depth as shown in the plans. Each wet pond SWM facility requires one aerator system and that shall consist of, but not be limited to, the items listed below. The quantities of these materials and the sizes are to be determined by the manufacturer's specifications.

- Solar Array and Adjustable Pole Mount
- Diffuser (submerged and self-weighted)
- Compressor and Control Unit (including hosing, protective covering, and thermal control)

III. SUBMITTALS

The Contractor shall submit the manufacturer's specifications for the solar submersible aerator systems to VDOT for approval and maintenance guidelines.

IV. PROCEDURES

The solar array shall be placed at the designated location as shown in the plans with full view of the sky. Additionally, the diffuser shall also be placed at the designated location as shown in the plans, as close to the center of the pond as possible for maximum aeration.

V. MEASUREMENT AND PAYMENT

The solar submersible aerator systems will be measured in units of each and will be paid for at the contract unit price per each. This price shall include all materials, equipment and incidentals necessary for the installation of the pond aerator, complete and in place.

Payment will be made under

Pay Item	Pay Unit
<u>Drainage (Pond Aerator)</u>	<u>Each</u>

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
SECTION 108.02 – LIMITATION OF OPERATIONS

October 7, 2016

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 seven (7) days in advance, stating the location, purpose, date, time, and duration of the closure. Confirmation shall be made twenty-four (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.

Complete road closures (for maximum of 20 minutes) require a seventy-two (72) hour advance confirmation for coordination. The Contractor shall provide adequate advance notification via variable message and required static signing for lane closures in accordance with the latest version of the *Virginia Work Area Protection Manual*. Once a closure is in place, work shall commence immediately and shall progress on a continuous basis to completion or to a designated time.

All closures in the Express Lanes on either I-95, I-495, I-395 and I-66 shall be coordinated with the Express Lanes Operations Center at least 10 business days in advance using their Authorization to Work form (available from the Express Lanes Operations Center at (571) 419-6046. Complete road closures on 95 Express Lanes and 495 Express Lanes shall not exceed 30 minutes.

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 VDOT 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:

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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 VDOT Project Manager within two (2) days of the occurrence. A meeting with the District Construction Engineer or designee shall 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 Time(s) will be granted or considered for these days.

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 site(s) from either direction or produce undue glare to property owners.

Lighting of work site(s) 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.

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Construction in Residential Subdivisions

Road work within residential subdivisions and/or cul-de-sac streets shall not be done at night unless circumstances require night work and the Contractor obtains advance approval from the Engineer and conducts outreach to the residents that may be impacted to avoid noise issues.

Section 108.02 (b) Holidays of the Specifications is amended to include the following:

- **Martin Luther King Jr. Day and Lee Jackson Day:** As indicated below*.
- **President's Day:** As indicated below*.
- **Inauguration Day:** From Noon on the preceding day until Noon on the following day, except as indicated below*.
- **Easter:** As indicated below*.
- **September 11th:** From Noon on the preceding day until Noon on the following day, except as indicated below*.
- **Columbus Day:** As indicated below*.
- **Veteran's Day:** From Noon on the preceding day until Noon on the following day, except as indicated below*.

If the Holiday occurs on a Friday or Saturday: From Noon on the preceding Thursday to Noon on the following Monday.

If the Holiday occurs on a Sunday or Monday: From Noon on the preceding Friday to Noon on the following Tuesday.

*Note:

For low volume roadways (minor arterial), no lane closure is allowed during the holidays, but no restriction to the preceding day and the following day.

If an approved shoulder closure is required to protect from traffic hazards, no time restrictions will apply, but the Contractor shall continuously prosecute the work and remove the shoulder closure as soon as the hazard is addressed.

Multiple lane closures on divided highways with 4 or more lanes per direction shall not occupy more than fifty percent of existing lanes unless otherwise approved by the Engineer. Only full lane closures totaling less than fifty percent of the existing lanes will be allowed on divided highways with an odd number of lanes unless otherwise approved by the Engineer.

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Northern Virginia allowable Lane Closure hours

INTERSTATE 395 & INTERSTATE 95					
WEEKDAY		Northbound			
		Single-Lane Closures or Shoulder	Two-Lane Closures	Multiple-Lane Closures	Complete Road Closure
Segment 1	14 th St. Bridge to Springfield Interchange	10:00AM to 3:00PM	10:00PM to 5:00AM	11:00PM to 5:00AM	12:00AM to 4:00AM
		9:00PM to 5:00AM			
Segment 2	Springfield Interchange to Rt.123	9:30AM to 3:30PM	10:00PM to 5:00AM	11:00PM to 5:00AM	12:00AM to 4:00AM
		9:00PM to 5:00AM			
Segment 3	Rt.123 to Prince William / Stafford County line	9:30AM to 3:30PM	10:00PM to 4:30AM	11:00PM to 4:00AM	12:00AM to 4:00AM
		9:00PM to 5:00AM			
Segment 4	Prince William / Stafford County line to Rt.3 Exit 130	9:30AM to 3:30PM	10:00PM to 4:30AM	n/a	12:00AM to 4:00AM
		9:00PM to 4:30AM			
Segment 5	Rt.3 Exit 130 to Caroline / Hanover County line	9:00AM to 3:30PM	10:00PM to 4:30AM	n/a	12:00AM to 4:00AM
		9:00PM to 5:30AM			
All lanes open at 12:00 noon on Friday					

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INTERSTATE 395 & INTERSTATE 95					
WEEKDAY		Southbound			
		Single-Lane Closures or Shoulder	Two-Lane Closures	Multiple-Lane Closures	Complete Road Closure
Segment 1	14 th St. Bridge to Springfield Interchange	10:00AM to 2:30PM	10:00PM to 5:00AM	11:00PM to 5:00AM	12:00AM to 4:00AM
		9:30PM to 5:00AM			
Segment 2	Springfield Interchange to Rt.123	9:00AM to 2:00PM	10:00PM to 5:00AM	11:00PM to 5:00AM	12:00AM to 4:00AM
		9:30PM to 5:00AM			
Segment 3	Rt.123 to Prince William / Stafford County line	9:00AM to 2:00PM	10:00PM to 5:00AM	11:00PM to 5:00AM	12:00AM to 4:00AM
		9:30PM to 6:00AM			
Segment 4	Prince William / Stafford County line to Rt.3 Exit 130	9:00AM to 2:00PM	10:00PM to 5:30AM	n/a	12:00AM to 4:00AM
		9:30PM to 6:00AM			
Segment 5	Rt.3 Exit 130 to Caroline / Hanover County line	9:00AM to 3:00PM	10:00PM to 5:30AM	n/a	12:00AM to 4:00AM
		9:30PM to 6:00AM			
All lanes open at 11:00am on Friday					

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INTERSTATE 395 & INTERSTATE 95			
WEEKEND	Northbound/Southbound*		
	Single-Lane Closures or Shoulder	Multiple-Lane Closures	Complete Road Closure
Friday to Saturday	10:00PM to 7:00AM	11:00PM to 6:00AM	12:00AM to 5:00AM
Saturday to Sunday	10:00PM to 7:00AM	11:00PM to 6:00AM	12:00AM to 5:00AM
Sunday to Monday	10:00PM to 5:00AM	11:00PM to 4:00AM	12:00AM to 4:00AM
* For special operations, depending on time of year, additional hours may be allowed with proper ADA/ROD approval.			

	REVERSIBLE LANES (HOV & EXPRESS LANES)*	
	Single-Lane Closures or Shoulder	Complete Road Closure**
WEEKDAY	9:30PM (Sunday to Thursday) to 4:00AM (Monday to Friday)	11:00PM to 4:00AM
WEEKEND	11:00PM (Friday to Saturday) to 9:00AM (Saturday to Sunday)	11:00PM to 4:00AM
*.Direction of traffic control for all lane closures in reversible lanes will need to be adjusted as necessary to face direction of traffic.		
** Complete Road Closure on Express Lanes limited to 30 minutes or less.		

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INTERSTATE 495 (BELTWAY)					
WEEKDAY		Inner Loop			
		Single-Lane Closures or Shoulder	Two-Lane Closures	Multiple-Lane Closures	Complete Road Closure
Segment 1	A. L. Bridge to Springfield Interchange	10:00AM to 3:00PM	10:00PM to 5:00AM	11:00PM to 5:00AM	12:00AM to 5:00AM
		9:30PM to 5:00AM			
Segment 2	Springfield Interchange to W.W. Bridge	10:00AM to 3:00PM	10:00PM to 5:00AM	11:00PM to 5:00AM	12:00AM to 5:00AM
		9:30PM to 5:00AM			
All lanes open at 12:00 noon on Friday					
WEEKDAY		Outer Loop			
		Single-Lane Closures or Shoulder	Two-Lane Closures	Multiple-Lane Closures	Complete Road Closure
Segment 1	A. L. Bridge to Springfield Interchange	9:30AM to 2:30PM	10:00PM to 5:00AM	11:00PM to 5:00AM	12:00AM to 5:00AM
		9:30PM to 5:00AM			
Segment 2	Springfield Interchange to W.W. Bridge	10:00AM to 3:00PM	10:00PM to 5:00AM	11:00PM to 5:00AM	12:00AM to 5:00AM
		9:30PM to 5:00AM			
All lanes open at 12:00 noon on Friday					
WEEKEND		Inner/Outer Loop			
		Single-Lane Closures or Shoulder	Multiple-Lane Closures		Complete Road Closure
Friday to Saturday		10:00PM to 8:00AM	11:00PM to 7:00AM		12:00AM to 5:00AM
Saturday to Sunday		10:00PM to 9:00AM	11:00PM to 8:00AM		12:00AM to 5:00AM
Sunday to Monday		9:30PM to 5:00AM	11:00PM to 5:00AM		12:00AM to 5:00AM

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INTERSTATE 495 (BELTWAY)		
EXPRESS LANES		
	Single-Lane Closures or Shoulder	Complete Road Closure**
WEEKDAY	9:30PM (Sunday to Thursday) to 4:00AM (Monday to Friday)	11:00PM to 4:00AM
WEEKEND	11:00PM (Friday to Saturday) to 9:00AM (Saturday to Sunday)	11:00PM to 4:00AM
** Complete Road Closure on Express Lanes limited to 30 minutes or less.		

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INTERSTATE 66					
WEEKDAY		Eastbound			
		Single-Lane Closures or Shoulder	Two-Lane Closures	Multiple-Lane Closures	Complete Road Closure
Segment 1	Prince William County line to Route 286	10:00AM to 3:30PM	9:00PM to 5:00AM	10:00PM to 5:00AM	12:00AM to 4:00AM
		8:00PM to 5:00AM			
Segment 2	Route 286 to Beltway	11:00AM to 3:30PM	10:00PM to 5:00AM**	11:00PM to 5:00AM**	12:00AM to 4:00AM
		9:00PM to 5:00AM			
Segment 3	Beltway to TR Bridge (Inside Beltway)	9:30PM to 5:00AM	n/a	n/a	12:00AM to 4:00AM
All lanes open at 12:00 noon on Friday					
WEEKDAY		Westbound			
		Single-Lane Closures or Shoulder	Two-Lane Closures	Multiple-Lane Closures	Complete Road Closure
Segment 1	Prince William County line to Route 286	9:00AM to 2:30PM	9:30PM to 6:00AM	10:30PM to 5:00AM	12:00AM to 4:00AM
		9:00PM to 6:00AM			
Segment 2	Route 286 to Beltway	9:00AM to 2:00PM*	10:00PM to 5:00AM**	11:00PM to 5:00AM**	12:00AM to 4:00AM
		9:30PM to 5:00AM			
Segment 3	Beltway to TR Bridge (Inside Beltway)	9:30AM to 2:00PM*	10:00PM to 5:00AM**	n/a	12:00AM to 4:00AM
		10:00PM to 5:00AM			
All lanes open at 12:00 noon on Friday					
* Only be considered for three lane segment.					
** Consider opening shoulder lane, where Applicable.					

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INTERSTATE 66			
WEEKEND	Eastbound/Westbound		
Outside Beltway	Single-Lane Closures or Shoulder	Multiple-Lane Closures	Complete Road Closure
Friday to Saturday	9:00PM to 9:00AM	10:00PM to 6:00AM	12:00AM to 5:00AM
Saturday to Sunday	9:00PM to 9:00AM	10:00PM to 6:00AM	12:00AM to 5:00AM
Sunday to Monday	8:00PM to 5:00AM	9:00PM to 5:00AM	12:00AM to 4:00AM
Inside Beltway	Single-Lane Closures or Shoulder	Multiple-Lane Closures	Complete Road Closure
Friday to Saturday	10:00PM to 6:00AM	n/a	12:00AM to 5:00AM
Saturday to Sunday	10:00PM to 6:00AM	n/a	12:00AM to 5:00AM
Sunday to Monday	9:30PM to 5:00AM	n/a	12:00AM to 4:00AM

ROUTE 267 CONNECTOR				
WEEKDAY	Eastbound		Westbound	
	Single-Lane Closures or Shoulder	Complete Road Closure	Single-Lane Closures or Shoulder	Complete Road Closure
Monday to Friday	11:00AM to 3:00PM	12:00AM to 4:00AM	9:30AM to 3:00PM	12:00AM to 4:00AM
	9:30PM to 5:00AM		9:00PM to 5:00AM	
All lanes open at 12:00 noon on Friday				

WEEKEND	Eastbound/Westbound	
	Single-Lane Closures or Shoulder	Complete Road Closure
Friday to Saturday	10:00PM to 8:00AM	12:00AM to 5:00AM
Saturday to Sunday	11:00PM to 8:00AM	12:00AM to 5:00AM
Sunday to Monday	9:00PM to 5:00AM	12:00AM to 4:00AM

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Single-Lane Closures* or Shoulder					
ARTERIAL	WEEKDAY		WEEKEND		
	Monday to Thursday	Friday	Friday to Saturday	Saturday to Sunday	Sunday to Monday
Major Arterials**	9:30AM to 3:00PM	9:30AM to 2:00 PM	10:00PM to 9:00AM	10:00PM to 8:00AM	10:00PM to 5:00AM
	10:00PM to 5:00AM				
All Other Roadways	9:00AM to 3:30PM	9:00AM to 2:00 PM	10:00PM to 9:00AM	9:00PM to 9:00AM	10:00PM to 5:00AM
	9:00PM to 5:00AM				

Multiple-Lane Closures					
ARTERIAL	WEEKDAY		WEEKEND		
	Monday to Thursday	Friday	Friday to Saturday	Saturday to Sunday	Sunday to Monday
Major Arterials**	10:00PM to 5:00AM	Not before 11:00PM	11:00PM to 5:00AM	11:00PM to 6:00AM	11:00PM to 5:00AM
All Other Roadways	9:00PM to 5:00AM	Not before 10:00PM	10:00PM to 6:00AM	10:00PM to 6:00AM	10:00PM to 5:00AM

*Single-lane closures only permitted for multiple-lane roadways.

**Major Arterials defined as Primary Roads, high volume Secondary Roads, and all other routes that connect directly to Interstates

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VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR

VWP GENERAL PERMIT NO. WP3 FOR LINEAR TRANSPORTATION PROJECTS UNDER THE VIRGINIA WATER PROTECTION PERMIT AND THE VIRGINIA STATE WATER CONTROL LAW

CONDITIONS AND LIMITATIONS
ISSUED TO THE
VIRGINIA DEPARTMENT OF TRANSPORTATION

Project:0286-029-259, B628, B630, B631, B632, C501,
D605, P101, R201

Authorization #:WP3-

Effective Date:

Expiration Date:

Project Number(Assoc)(UPC):0286-029-365(111725), 0286-029-489(122982)

Applicable Crossing(s): UT1 Little Rocky Run, UT1 Piney Branch, UT2 Piney Branch, UT3 Piney Branch

Part I - Special Conditions

A. Authorized Activities

1. This permit authorizes widening of Route 286 from 4 to 6 lanes from Nomes Court to Route 29 to include intersection improvements and pedestrian and bicycle amenities.
2. Any changes to the authorized permanent impacts to surface waters shall require a notice of planned change in accordance with 9VAC25-680-80. An application or request for modification to coverage or another VWP permit application may be required.
3. Any changes to the authorized temporary impacts to surface waters shall require written notification to and approval from the Department of Environmental Quality in accordance with 9VAC25-680-80 prior to initiating the impacts and restoration to preexisting conditions in accordance with the conditions of this permit.
4. Modification to compensation requirements may be approved at the request of the permittee when a decrease in the amount of authorized surface waters impacts occurs, provided that the adjusted compensation meets the initial compensation goals.

B. Overall conditions

1. The activities authorized by this VWP general permit shall be executed in a manner so as to minimize adverse impacts on instream beneficial uses as defined in § 62.1-10 (b) of the Code of Virginia.

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2. No activity may substantially disrupt the movement of aquatic life indigenous to the water body, including those species which normally migrate through the area, unless the primary purpose of the activity is to impound water. Pipes and culverts placed in streams must be installed to maintain low flow conditions and shall be countersunk at both inlet and outlet ends of the pipe or culvert, unless specifically approved by the Department of Environmental Quality on a case-by-case basis and as follows: The requirement to countersink does not apply to extensions or maintenance of existing pipes and culverts that are not countersunk, floodplain pipe and culverts being placed above ordinary high water, pipes and culverts being placed on bedrock, or pipes or culverts required to be placed on slopes 5.0% or greater. Bedrock encountered during construction must be identified and approved in advance of a design change where the countersunk condition cannot be met. Pipes and culverts 24 inches or less in diameter shall be countersunk three inches below the natural stream bed elevations, and pipes and culverts greater than 24 inches shall be countersunk at least six inches below the natural stream bed elevations. Hydraulic capacity shall be determined based on the reduced capacity due to the countersunk position. In all stream crossings appropriate measures shall be implemented to minimize any disruption of aquatic life movement.
3. Wet or uncured concrete shall be prohibited from entry into flowing surface waters, unless the area is contained within a cofferdam and the work is performed in the dry or unless otherwise approved by the Department of Environmental Quality. Excess or waste concrete shall not be disposed of in flowing surface waters or washed into flowing surface waters.
4. All fill material shall be clean and free of contaminants in toxic concentrations or amounts in accordance with all applicable laws and regulations.
5. Erosion and sedimentation controls shall be designed in accordance with the Virginia Erosion and Sediment Control Handbook, Third Edition, 1992. These controls shall be placed prior to clearing and grading and maintained in good working order to minimize impacts to state waters. These controls shall remain in place until the area is stabilized and shall then be removed.
6. Exposed slopes and streambanks shall be stabilized immediately upon completion of work in each permitted impact area. All denuded areas shall be properly stabilized in accordance with the Virginia Erosion and Sediment Control Handbook, Third Edition, 1992.
7. All construction, construction access (e.g., cofferdams, sheetpiling, and causeways) and demolition activities associated with this project shall be accomplished in a manner that minimizes construction or waste materials from entering surface waters to the maximum extent practicable, unless authorized by this VWP general permit.
8. No machinery may enter flowing waters, unless authorized by this VWP general permit or approved prior to entry by the Department of Environmental Quality.
9. Heavy equipment in temporarily-impacted wetland areas shall be placed on mats, geotextile fabric, or other suitable material, to minimize soil disturbance to the maximum extent practicable. Equipment and materials shall be removed immediately upon completion of work.
10. All nonimpacted surface waters and compensatory mitigation areas within 50 feet of authorized activities and within the project or right-of-way limits shall be clearly flagged or marked for the life of the construction activity at that location to preclude unauthorized disturbances to these surface waters and compensatory mitigation areas during construction. The permittee shall notify contractors that no activities are to occur in these marked surface waters.
11. Temporary disturbances to surface waters during construction shall be avoided and minimized to the maximum extent practicable. All temporarily disturbed wetland areas shall be restored to preexisting conditions within 30 days of completing work at each respective temporary impact area, which shall include reestablishing preconstruction elevations and contours with topsoil from the impact area where practicable and planting or seeding with appropriate wetland vegetation according to cover type (i.e., emergent, scrub-shrub, or forested). The permittee shall take all appropriate measures to promote and

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maintain revegetation of temporarily disturbed wetland areas with wetland vegetation through the second year post-disturbance. All temporarily impacted streams and streambanks shall be restored to their preconstruction elevations and contours with topsoil from the impact area where practicable within 30 days following the construction at that stream segment. Streambanks shall be seeded or planted with the same vegetation cover type originally present, including any necessary, supplemental erosion control grasses. Invasive species identified on the Department of Conservation and Recreation's Virginia Invasive Plant Species List shall not be used to the maximum extent practicable or without prior approval from the Department of Environmental Quality.

12. Materials (including fill, construction debris, and excavated and woody materials) temporarily stockpiled in wetlands shall be placed on mats or geotextile fabric, immediately stabilized to prevent entry into state waters, managed such that leachate does not enter state waters, and completely removed within 30 days following completion of that construction activity. Disturbed areas shall be returned to preconstruction elevations and contours with topsoil from the impact area where practicable; restored within 30 days following removal of the stockpile; and restored with the same vegetation cover type originally present, including any necessary supplemental erosion control grasses. Invasive species identified on the Department of Conservation and Recreation's Virginia Invasive Plant Species List shall not be used to the maximum extent practicable or without prior approval from the Department of Environmental Quality.
13. Continuous flow of perennial springs shall be maintained by the installation of spring boxes, french drains, or other similar structures.
14. The permittee shall employ measures to prevent spills of fuels or lubricants into state waters.
15. The permittee shall conduct his activities in accordance with the time-of-year restrictions recommended by the Virginia Department of Wildlife Resources, the Virginia Marine Resources Commission, or other interested and affected agencies, as contained, when applicable, in Department of Environmental Quality VWP general permit coverage, and shall ensure that all contractors are aware of the time-of-year restrictions imposed.
16. Water quality standards shall not be violated as a result of the construction activities.
17. If stream channelization or relocation is required, all work in surface waters shall be done in the dry, unless otherwise authorized by the Department of Environmental Quality, and all flows shall be diverted around the channelization or relocation area until the new channel is stabilized. This work shall be accomplished by leaving a plug at the inlet and outlet ends of the new channel during excavation. Once the new channel has been stabilized, flow shall be routed into the new channel by first removing the downstream plug and then the upstream plug. The rerouted stream flow must be fully established before construction activities in the old stream channel can begin.

C. Road Crossings

1. Access roads and associated bridges, pipes, and culverts shall be constructed to minimize the adverse effects on surface waters to the maximum extent practicable. Access roads constructed above preconstruction elevations and contours in surface waters must be bridged, piped, or culverted to maintain surface flows.
2. Installation of road crossings shall occur in the dry via the implementation of cofferdams, sheetpiling, stream diversions or similar structures.

D. Utility Lines

1. All utility line work in surface waters shall be performed in a manner that minimizes disturbance, and the area must be returned to its preconstruction elevations and contours with topsoil from the impact area where practicable and restored within 30 days of completing work in the area, unless otherwise authorized by the Department of Environmental Quality. Restoration shall be the seeding or planting of

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the same vegetation cover type originally present, including any necessary supplemental erosion control grasses. Invasive species identified on the Department of Conservation and Recreation's Virginia Invasive Plant Species List shall not be used to the maximum extent practicable or without prior approval from the Department of Environmental Quality.

2. Material resulting from trench excavation may be temporarily sidecast into wetlands not to exceed a total of 90 days, provided the material is not placed in a manner such that it is dispersed by currents or other forces.
3. The trench for a utility line cannot be constructed in a manner that drains wetlands (e.g., backfilling with extensive gravel layers creating a french drain effect). For example, utility lines may be backfilled with clay blocks to ensure that the trench does not drain surface waters through which the utility line is installed.

E. Stream Modifications and Stream Bank Protection

1. Riprap bank stabilization shall be of an appropriate size and design in accordance with the Virginia Erosion and Sediment Control Handbook, Third Edition, 1992.
2. Riprap aprons for all outfalls shall be designed in accordance with the Virginia Erosion and Sediment Control Handbook, Third Edition, 1992.
3. For bank protection activities, the structure and backfill shall be placed as close to the stream bank as practicable. No material shall be placed in excess of the minimum necessary for erosion protection.
4. All stream bank protection structures shall be located so as to eliminate or minimize impacts to vegetated wetlands to the maximum extent practicable.
5. Asphalt and materials containing asphalt or other toxic substances shall not be used in the construction of submerged sills or breakwaters.
6. Redistribution of existing stream substrate for the purpose of erosion control is prohibited.
7. No material removed from the stream bottom shall be disposed of in surface waters, unless otherwise authorized by this VWP general permit.

F. Dredging

1. Dredging depths shall be determined and authorized according to the proposed use and controlling depths outside the area to be dredged.
2. Dredging shall be accomplished in a manner that minimizes disturbance of the bottom and minimizes turbidity levels in the water column.
3. If evidence of impaired water quality, such as a fish kill, is observed during the dredging, dredging operations shall cease, and the Department of Environmental Quality shall be notified immediately.
4. Barges used for the transportation of dredge material shall be filled in such a manner to prevent any overflow of dredged materials.
5. Double handling of dredged material in state waters shall not be permitted.
6. For navigation channels the following shall apply:
 - a. A buffer of four times the depth of the dredge cut shall be maintained between the bottom edge of the design channel and the channelward limit of wetlands, or a buffer of 15 feet shall be maintained from the dredged cut and the channelward edge of wetlands or, whichever is greater.

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This landward limit of buffer shall be flagged and inspected prior to construction.

- b. Side slope cuts of the dredging area shall not exceed a two-horizontal-to-one-vertical slope to prevent slumping of material into the dredged area.
7. A dredged material management plan for the designated upland disposal site shall be submitted and approved 30 days prior to initial dredging activity.
8. Pipeline outfalls and spillways shall be located at opposite ends of the dewatering area to allow for maximum retention and settling time. Filter fabric shall be used to line the dewatering area and to cover the outfall pipe to further reduce sedimentation to state waters.
9. The dredge material dewatering area shall be of adequate size to contain the dredge material and to allow for adequate dewatering and settling out of sediment prior to discharge back into state waters.
10. The dredge material dewatering area shall utilize an earthen berm or straw bales covered with filter fabric along the edge of the area to contain the dredged material, and shall be properly stabilized prior to placing the dredged material within the containment area.
11. Overtopping of the dredge material containment berms with dredge materials shall be strictly prohibited.

G. Stormwater Management Facilities

1. Stormwater management facilities shall be installed in accordance with best management practices and watershed protection techniques (e.g., vegetated buffers, siting considerations to minimize adverse effects to aquatic resources, bioengineering methods incorporated into the facility design to benefit water quality and minimize adverse effects to aquatic resources) that provide for long-term aquatic resources protection and enhancement, to the maximum extent practicable.
2. Compensation for unavoidable impacts shall not be allowed within maintenance areas of stormwater management facilities.
3. Maintenance activities within stormwater management facilities shall not require additional permit coverage or compensation, provided that the maintenance activities do not exceed the original contours of the facility, as approved and constructed, and is accomplished in designated maintenance areas as indicated in the facility maintenance or design plan or when unavailable, an alternative plan approved by the Department of Environmental Quality.

Part II - Construction And Compensation Requirements, Monitoring And Reporting

A. Minimum Compensation Requirements

1. The permittee shall provide any required compensation for impacts in accordance with the conditions in this VWP general permit, the coverage letter, and the chapter promulgating the general permit. For all compensation that requires a protective mechanism, including preservation of surface waters or buffers, the permittee shall record the approved protective mechanism in the chain of title to the property, or an equivalent instrument for government-owned lands, and proof of recordation shall be submitted to the Department of Environmental Quality prior to commencing impacts in surface waters.
2. Compensation options that may be considered under this VWP general permit shall meet the criteria and 9VAC25-210-116.
3. The permittee-responsible compensation site or sites depicted in the conceptual compensation plan submitted with the application shall constitute the compensation site. A site change may require a modification to coverage.

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4. For compensation involving the purchase of mitigation bank credits or the purchase of in-lieu fee program credits, the permittee shall not initiate work in permitted impact areas until documentation of the mitigation bank credit purchase or of the in-lieu fee program credit purchase has been submitted to and received by the Department of Environmental Quality.
5. The final compensatory mitigation plan shall be submitted to and approved by the board prior to a construction activity in permitted impact areas. The board shall review and provide written comments on the final plan within 30 days of receipt or it shall be deemed approved. The final plan as approved by the board shall be an enforceable requirement of any coverage under this VWP general permit. Deviations from the approved final plan shall be submitted and approved in advance by the board.
 - a. The final permittee-responsible wetlands compensation plan shall include:
 - (1) The complete information on all components of the conceptual compensation plan.
 - (2) A summary of the type and acreage of existing wetland impacts anticipated during the construction of the compensation site and the proposed compensation for these impacts; a site access plan; a monitoring plan, including proposed success criteria, monitoring goals, and the location of photo-monitoring stations, monitoring wells, vegetation sampling points, and reference wetlands or streams, if available; an abatement and control plan for undesirable plant species; an erosion and sedimentation control plan; a construction schedule; and the final protective mechanism for the protection of the compensation site or sites, including all surface waters and buffer areas within its boundaries.
 - (3) The approved protective mechanism. The protective mechanism shall be recorded in the chain of title to the property, or an equivalent instrument for government-owned lands, and proof of recordation shall be submitted to the Department of Environmental Quality prior to commencing impacts in surface waters.
 - b. The final permittee-responsible stream compensation plan shall include:
 - (1) The complete information on all components of the conceptual compensation plan.
 - (2) An evaluation, discussion, and plan drawing or drawings of existing conditions on the proposed compensation stream, including the identification of functional and physical deficiencies for which the measures are proposed, and summary of geomorphologic measurements (e.g., stream width, entrenchment ratio, width-depth ratio, sinuosity, slope, substrate, etc.); a site access plan; a monitoring plan, including a monitoring and reporting schedule, monitoring design and methodologies for success, proposed success criteria, location of photo-monitoring stations, vegetation sampling points, survey points, bank pins, scour chains, and reference streams; an abatement and control plan for undesirable plant species; an erosion and sedimentation control plan, if appropriate; a construction schedule; a plan-view drawing depicting the pattern and all compensation measures being employed; a profile drawing; cross-sectional drawing or drawings of the proposed compensation stream; and the final protective mechanism for the protection of the compensation site or sites, including all surface waters and buffer areas within its boundaries.
 - (3) The approved protective mechanism. The protective mechanism shall be recorded in the chain of title to the property, or an equivalent instrument for government-owned lands, and proof of recordation shall be submitted to the Department of Environmental Quality prior to commencing impacts in surface waters.
6. The following criteria shall apply to permittee-responsible wetland or stream compensation:
 - a. The vegetation used shall be native species common to the area, shall be suitable for growth in

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local wetland or riparian conditions, and shall be from areas within the same or adjacent U.S. Department of Agriculture Plant Hardiness Zone or Natural Resources Conservation Service Land Resource Region as that of the project site. Planting of woody plants shall occur when vegetation is normally dormant, unless otherwise approved in the final wetlands or stream compensation plan or plans.

- b. All work in permitted impact areas shall cease if compensation site construction has not commenced within 180 days of commencement of project construction, unless otherwise authorized by the board.
- c. The Department of Environmental Quality shall be notified in writing prior to the initiation of construction activities at the compensation site.
- d. Point sources of stormwater runoff shall be prohibited from entering a wetland compensation site prior to treatment by appropriate best management practices. Appropriate best management practices may include sediment traps, grassed waterways, vegetated filter strips, debris screens, oil and grease separators, or forebays.
- e. The success of the compensation shall be based on meeting the success criteria established in the approved final compensation plan.
- f. If the wetland or stream compensation area fails to meet the specified success criteria in a particular monitoring year, other than the final monitoring year, the reasons for this failure shall be determined and a corrective action plan shall be submitted to the Department of Environmental Quality for approval with or before that year's monitoring report. The corrective action plan shall contain at minimum the proposed actions, a schedule for those actions, and a monitoring plan, and shall be implemented by the permittee in accordance with the approved schedule. Should significant changes be necessary to ensure success, the required monitoring cycle shall begin again, with monitoring year one being the year that the changes are complete as confirmed by the Department of Environmental Quality. If the wetland or stream compensation area fails to meet the specified success criteria by the final monitoring year or if the wetland or stream compensation area has not met the stated restoration goals, reasons for this failure shall be determined and a corrective action plan, including proposed actions, a schedule, and a monitoring plan, shall be submitted with the final year monitoring report for the Department of Environmental Quality approval. Corrective action shall be implemented by the permittee in accordance with the approved schedule. Annual monitoring shall be required to continue until two sequential, annual reports indicate that all criteria have been successfully satisfied and the site has met the overall restoration goals (e.g., that corrective actions were successful).
- g. The surveyed wetland boundary for the compensation site shall be based on the results of the hydrology, soils, and vegetation monitoring data and shall be shown on the site plan. Calculation of total wetland acreage shall be based on that boundary at the end of the monitoring cycle. Data shall be submitted by December 31 of the final monitoring year.
- h. Herbicides or algicides shall not be used in or immediately adjacent to the compensation site or sites without prior authorization by the board. All vegetation removal shall be done by manual means only, unless authorized by the Department of Environmental Quality in advance.

B. Impact Site Construction Monitoring

- 1. Construction activities authorized by this permit that are within impact areas shall be monitored and documented. The monitoring shall consist of:
 - a. Preconstruction photographs taken at each impact area prior to initiation of activities within impact areas. Photographs shall remain on the project site and depict the impact area and the nonimpacted surface waters immediately adjacent to and downgradient of each impact area.

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Each photograph shall be labeled to include the following information: permit number, impact area number, date and time of the photograph, name of the person taking the photograph, photograph orientation, and photograph subject description.

- b. Site inspections shall be conducted by the permittee or the permittee's qualified designee once every calendar month during activities within impact areas. Monthly inspections shall be conducted in the following areas: all authorized permanent and temporary impact areas; all avoided surface waters, including wetlands, stream channels, and open water; surface water areas within 50 feet of any land disturbing activity and within the project or right-of-way limits; and all on-site permanent preservation areas required under this permit. Observations shall be recorded on the inspection form provided by the Department of Environmental Quality. The form shall be completed in its entirety for each monthly inspection and shall be kept on site and made available for review by the Department of Environmental Quality staff upon request during normal business hours. Inspections are not required during periods of no activity within impact areas.
2. Monitoring of water quality parameters shall be conducted during permanent relocation of perennial streams through new channels in the manner noted below. The permittee shall report violations of water quality standards to the Department of Environmental Quality in accordance with the procedures in 9VAC25-680-100 Part II E. Corrective measures and additional monitoring may be required if water quality standards are not met. Reporting shall not be required if water quality standards are not violated.
 - a. A sampling station shall be located upstream and immediately downstream of the relocated channel.
 - b. Temperature, pH, and dissolved oxygen (D.O.) measurements shall be taken every 30 minutes for at least two hours at each station prior to opening the new channels and immediately before opening new channels.
 - c. Temperature, pH, and D.O. readings shall be taken after opening the channels and every 30 minutes for at least three hours at each station.

C. Permittee-responsible Wetland Compensation Site Monitoring

1. An as-built ground survey, or an aerial survey provided by a firm specializing in aerial surveys, shall be conducted for the entire compensation site or sites, including invert elevations for all water elevation control structures and spot elevations throughout the site or sites. Aerial surveys shall include the variation from actual ground conditions, such as +/- 0.2 feet. Either type of survey shall be certified by a licensed surveyor or by a registered professional engineer to conform to the design plans. The survey shall be submitted within 60 days of completing compensation site construction. Changes or deviations in the as-built survey or aerial survey shall be shown on the survey and explained in writing.
2. Photographs shall be taken at the compensation site or sites from the permanent markers identified in the final compensation plan, and established to ensure that the same locations and view directions at the site or sites are monitored in each monitoring period. These photographs shall be taken after the initial planting and at a time specified in the final compensation plan during every monitoring year.
3. Compensation site monitoring shall begin on the first day of the first complete growing season (monitoring year 1) after wetland compensation site construction activities, including planting, have been completed. Monitoring shall be required for monitoring years 1, 2, 3, and 5, unless otherwise approved by the Department of Environmental Quality. In all cases, if all success criteria have not been met in the final monitoring year, then monitoring shall be required for each consecutive year until two annual sequential reports indicate that all criteria have been successfully satisfied.
4. The establishment of wetland hydrology shall be measured weekly during the growing season, with the location and number of monitoring wells, and frequency of monitoring for each site, set forth in the final monitoring plan. Hydrology monitoring well data shall be accompanied by precipitation data, including

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rainfall amounts, either from on site or from the closest weather station. Once the wetland hydrology success criteria have been satisfied for a particular monitoring year, monitoring may be discontinued for the remainder of that monitoring year following Department of Environmental Quality approval. After a period of three monitoring years, the permittee may request that hydrology monitoring be discontinued, providing that adequate hydrology has been established and maintained. Hydrology monitoring shall not be discontinued without written approval from the Department of Environmental Quality.

5. The presence of hydric soils or soils under hydric conditions shall be evaluated in accordance with the final compensation plan.
6. The establishment of wetland vegetation shall be in accordance with the final compensation plan. Monitoring shall take place in August, September or October during the growing season of each monitoring year, unless otherwise authorized in the monitoring plan.
7. The presence of undesirable plant species shall be documented.
8. All wetland compensation monitoring reports shall be submitted in accordance with 9 VAC 25-680-100 Part II E 6.

D. Permittee-responsible Stream Compensation and Monitoring

1. Riparian buffer restoration activities shall be detailed in the final compensation plan and shall include, as appropriate, the planting of a variety of native species currently growing in the site area, including appropriate seed mixtures and woody species that are bare root, balled or burlapped. A minimum buffer width of 50 feet, measured from the top of the stream bank at bankfull elevation landward on both sides of the stream, shall be required where practical.
2. The installation of root wads, vanes and other instream structures, shaping of the stream banks and channel relocation shall be completed in the dry whenever practicable.
3. Livestock access to the stream and designated riparian buffer shall be limited to the greatest extent practicable.
4. Stream channel restoration activities shall be conducted in the dry or during low flow conditions. When site conditions prohibit access from the streambank or upon prior authorization from the Department of Environmental Quality, heavy equipment may be authorized for use within the stream channel.
5. Photographs shall be taken at the compensation site from the vicinity of the permanent photo stations identified in the final compensation plan. The photograph orientation shall remain constant during all monitoring events. At a minimum, photographs shall be taken from the center of the stream, facing downstream, with a sufficient number of photographs to view the entire length of the restoration site. Photographs shall document the completed restoration conditions. Photographs shall be taken prior to site activities, during instream and riparian compensation construction activities, within one week of completion of activities, and during at least one day of each monitoring year to depict restored conditions.
6. An as-built ground survey, or aerial survey provided by a firm specializing in aerial surveys, shall be conducted for the entire compensation site or sites. Aerial surveys shall include the variation from the actual ground conditions, such as +/- 0.2 feet. The survey shall be certified by the licensed surveyor or by a registered, professional engineer to conform to the design plans. The survey shall be submitted within 60 days of completing compensation site construction. Changes or deviations from the final compensation plans in the as-built survey or aerial survey shall be shown on the survey and explained in writing.
7. Compensation site monitoring shall begin on day one of the first complete growing season (monitoring year 1) after stream compensation site constructions activities, including planting, have been

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completed. Monitoring shall be required for monitoring years 1 and 2, unless otherwise approved by the Department of Environmental Quality. In all cases, if all success criteria have not been met in the final monitoring year, then monitoring shall be required for each consecutive year until two annual sequential reports indicate that all criteria have been successfully satisfied.

8. All stream compensation monitoring reports shall be submitted in accordance with 9 VAC 25-680-100 Part II E 6.

E. Reporting

1. Written communications required by this VWP general permit shall be submitted to the appropriate Department of Environmental Quality office. The VWP general permit tracking number shall be included on all correspondence.
2. The Department of Environmental Quality shall be notified in writing prior to the start of construction activities at the first permitted impact area.
3. A construction status update form provided by the Department of Environmental Quality shall be completed and submitted to the Department of Environmental Quality twice per year for the duration of coverage under a VWP general permit. Forms completed in June shall be submitted by or on July 10, and forms completed in December shall be submitted by or on January 10. The form shall include reference to the VWP permit tracking number and one of the following statements for each authorized surface water impact location:
 - a. Construction activities have not yet started;
 - b. Construction activities have started;
 - c. Construction activities have started but are currently inactive; or
 - d. Construction activities are complete.
4. The Department of Environmental Quality shall be notified in writing within 30 days following the completion of all activities in all authorized impact areas.
5. The Department of Environmental Quality shall be notified in writing prior to the initiation of activities at the permittee-responsible compensation site. The notification shall include a projected schedule of activities and construction completion.
6. All permittee-responsible compensation site monitoring reports shall be submitted annually by December 31, with the exception of the last year, in which case the report shall be submitted at least 60 days prior to the expiration of the general permit, unless otherwise approved by the Department of Environmental Quality.
 - a. All wetland compensation monitoring reports shall include, as applicable, the following:
 - (1) General description of the site including a site location map identifying photo stations, vegetative and soil monitoring stations, monitoring wells, and wetland zones.
 - (2) Summary of the activities completed during the monitoring year, including alterations or maintenance conducted at the site.
 - (3) Description of monitoring methods.
 - (4) Analysis of all hydrology information, including monitoring well data, precipitation data, and gauging data from streams or other open water areas, as set forth in the final compensation plan.

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- (5) Evaluation of hydric soils or soils under hydric conditions, as appropriate.
 - (6) Analysis of all vegetative community information, including woody and herbaceous species, both planted and volunteers, as set forth in the final compensation plan.
 - (7) Photographs labeled with the permit number, the name of the compensation site, the photo-monitoring station number, the photograph orientation, the date and time of the photograph, the name of the person taking the photograph, and a brief description of the photograph subject. This information shall be provided as a separate attachment to each photograph, if necessary. Photographs taken after the initial planting shall be included in the first monitoring report after planting is complete.
 - (8) Discussion of wildlife or signs of wildlife observed at the compensation site.
 - (9) Comparison of site conditions from the previous monitoring year and reference site.
 - (10) Discussion of corrective measures or maintenance activities to control undesirable species, to repair damaged water control devices, or to replace damaged planted vegetation.
 - (11) Corrective action plan, which includes proposed actions, a schedule and monitoring plan.
- b. All stream compensation monitoring reports shall include, as applicable, the following:
- (1) General description of the site including a site location map identifying photo-monitoring stations and monitoring stations.
 - (2) Summary of the activities completed during the monitoring year, including alterations or maintenance conducted at the site.
 - (3) Description of monitoring methods.
 - (4) An evaluation and discussion of the monitoring results in relation to the success criteria and overall goals of compensation.
 - (5) Photographs shall be labeled with the permit number, the name of the compensation site, the photo-monitoring station number, the photograph orientation, the date and time of the photograph, the name of the person taking the photograph, and a brief description of the photograph subject. Photographs taken prior to compensation site construction activities, during instream and riparian restoration activities, and within one week of completion of activities shall be included in the first monitoring report.
 - (6) Discussion of alterations, maintenance, or major storm events resulting in significant change in stream profile or cross section, and corrective actions conducted at the stream compensation site.
 - (7) Documentation of undesirable plant species and summary of abatement and control measures.
 - (8) Summary of wildlife or signs of wildlife observed at the compensation site.
 - (9) Comparison of site conditions from the previous monitoring year and reference site, and as-built survey, if applicable.
 - (10) Corrective action plan, which includes proposed actions, a schedule and monitoring plan.

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(11) Additional submittals that were approved by the Department of Environmental Quality in the final compensation plan.

7. The permittee shall notify the Department of Environmental Quality in writing when unusual or potentially complex conditions are encountered which require debris removal or involve potentially toxic substance. Measures to remove the obstruction, material, or toxic substance or to change the location of a structure are prohibited until approved by the Department of Environmental Quality.
8. The permittee shall report fish kills or spills of oil or fuel immediately upon discovery. If spills or fish kills occur between the hours of 8:15 a.m. to 5 p.m., Monday through Friday, the appropriate Department of Environmental Quality regional office shall be notified; otherwise, the Department of Emergency Management shall be notified at 1-800-468-8892.
9. Violations of state water quality standards shall be reported to the appropriate Department of Environmental Quality office no later than the end of the business day following discovery.
10. The permittee shall notify the Department of Environmental Quality no later than the end of the third business day following the discovery of additional impacts to surface waters including wetlands, stream channels, and open water that are not authorized by the Department of Environmental Quality or to any required preservation areas. The notification shall include photographs, estimated acreage or linear footage of impacts, and a description of the impacts.
11. All submittals required by this VWP general permit shall contain the following signed certification statement:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate 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 violation."

Part III - Conditions Applicable To All VWP General Permits

A. Duty to Comply

The permittee shall comply with all conditions, limitations, and other requirements of the VWP general permit; any requirements in coverage granted under this VWP general permit; the Clean Water Act, as amended; and the State Water Control Law and regulations adopted pursuant to it. Any VWP general permit violation or noncompliance is a violation of the Clean Water Act and State Water Control Law and is grounds for (i) enforcement action, (ii) VWP general permit coverage termination for cause, (iii) VWP general permit coverage revocation, (iv) denial of application for coverage, or (v) denial of an application for a modification to VWP general permit coverage. Nothing in this VWP general permit shall be construed to relieve the permittee of the duty to comply with all applicable federal and state statutes, regulations, and toxic standards and prohibitions.

B. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any impacts in violation of the VWP general permit that may have a reasonable likelihood of adversely affecting human health or the environment.

C. Reopener

This VWP general permit may be reopened to modify its conditions when the circumstances on which the previous VWP general permit was based have materially and substantially changed, or special

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studies conducted by the board or the permittee show material and substantial change since the time the VWP general permit was issued and thereby constitute cause for revoking and reissuing the VWP general permit.

D. Compliance with State and Federal Law

Compliance with this VWP general permit constitutes compliance with the VWP permit requirements of the State Water Control Law. Nothing in this VWP general permit shall be construed to preclude the institution of any legal action under or relieve the permittee from any responsibilities, liabilities, or other penalties established pursuant to any other state law or regulation or under the authority preserved by § 510 of the Clean Water Act.

E. Property Rights

The issuance of this VWP general permit does not convey property rights in either real or personal property or any exclusive privileges, nor does it authorize injury to private property, any invasion of personal property rights, or any infringement of federal, state, or local laws or regulations.

F. Severability

The provisions of this VWP general permit authorization are severable.

G. Inspection and Entry

Upon presentation of credentials, the permittee shall allow the board or any duly authorized agent of the board, at reasonable times and under reasonable circumstances, to enter upon the permittee's property, public or private, and have access to inspect and copy any records that must be kept as part of the VWP general permit conditions; to inspect any facilities, operations, or practices (including monitoring and control equipment) regulated or required under the VWP general permit; and to sample or monitor any substance, parameter, or activity for the purpose of assuring compliance with the conditions of the VWP general permit or as otherwise authorized by law. For the purpose of this section, the time for inspection shall be deemed reasonable during regular business hours. Nothing contained herein shall make an inspection time unreasonable during an emergency.

H. Transferability of VWP General Permit Coverage

VWP general permit coverage may be transferred to another permittee when all of the criteria listed in this subsection are met. On the date of the VWP general permit coverage transfer, the transferred VWP general permit coverage shall be as fully effective as if it had been granted directly to the new permittee.

1. The current permittee notifies the board of the proposed transfer of the general permit coverage and provides a written agreement between the current and new permittees containing a specific date of transfer of VWP general permit responsibility, coverage, and liability to the new permittee, or that the current permittee will retain such responsibility, coverage, or liability, including liability for compliance with the requirements of enforcement activities related to the authorized activity.
2. The board does not within 15 days notify the current and new permittees of its intent to modify or revoke and reissue the VWP general permit.

I. Notice of Planned Change

VWP general permit coverage may be modified subsequent to issuance in accordance with 9VAC25-680-80.

J. VWP General Permit Coverage Termination for Cause

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VWP general permit coverage is subject to termination for cause by the board after public notice and opportunity for a hearing pursuant to § 62.1-44.15:02 of the Code of Virginia. Reasons for termination for cause are as follows:

1. Noncompliance by the permittee with any provision of this chapter, any condition of the VWP general permit, or any requirement in general permit coverage;
2. The permittee's failure in the application or during the process of granting VWP general permit coverage to disclose fully all relevant facts or the permittee's misrepresentation of any relevant facts at any time;
3. The permittee's violation of a special or judicial order; and
4. A determination by the board that the authorized activity endangers human health or the environment and can be regulated to acceptable levels by a modification to VWP general permit coverage or a termination;
5. A change in any condition that requires either a temporary or permanent reduction or elimination of any activity controlled by the VWP general permit; or
6. A determination that the authorized activity has ceased and that the compensation for unavoidable adverse impacts has been successfully completed.

K. The board may terminate VWP general permit coverage without cause when the permittee is no longer a legal entity due to death or dissolution or when a company is no longer authorized to conduct business in the Commonwealth. The termination shall be effective 30 days after notice of the proposed termination is sent to the last known address of the permittee or registered agent, unless the permittee objects within that time. If the permittee does object during that period, the board shall follow the applicable procedures for termination under §§ 62.1-44.15:02 and 62.1-44.15:25 of the Code of Virginia.

L. VWP General Permit Coverage Termination by Consent

The permittee shall submit a request for termination by consent within 30 days of completing or canceling all authorized activities requiring notification under 9VAC25-680-50 A and all compensatory mitigation requirements. When submitted for project completion, the request for termination by consent shall constitute a notice of project completion in accordance with 9VAC25-210-130 F. The director may accept this termination of coverage on behalf of the board. The permittee shall submit the following information:

1. Name, mailing address and telephone number;
2. Name and location of activity;
3. The VWP general permit tracking number; and
4. One of the following certifications:
 - a. For project completion:

"I certify under penalty of law that all activities and any required compensatory mitigation authorized by the VWP general permit and general permit coverage have been completed. I understand that by submitting this notice of termination I am no longer authorized to perform activities in surface waters in accordance with the VWP general permit and general permit coverage, and that performing activities in surface waters is unlawful where the activity is not authorized by the VWP permit or coverage, unless otherwise excluded from obtaining coverage. I also understand that the submittal of this

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notice does not release me from liability for any violations of the VWP general permit coverage."

b. For project cancellation:

"I certify under penalty of law that the activities and any required compensatory mitigation authorized by the VWP general permit and general permit coverage will not occur. I understand that by submitting this notice of termination I am no longer authorized to perform activities in surface waters in accordance with the VWP general permit and general permit coverage, and that performing activities in surface waters is unlawful where the activity is not authorized by the VWP permit or coverage, unless otherwise excluded from obtaining coverage. I also understand that the submittal of this notice does not release me from liability for any violations of the VWP general permit or coverage, nor does it allow me to resume the authorized activities without reapplication and coverage."

c. For events beyond permittee control, the permittee shall provide a detailed explanation of the events, to be approved by the Department of Environmental Quality, and the following certification statement:

"I certify under penalty of law that the activities or the required compensatory mitigation authorized by the VWP general permit and general permit coverage have changed as the result of events beyond my control (see attached). I understand that by submitting this notice of termination I am no longer authorized to perform activities in surface waters in accordance with the VWP general permit and general permit coverage, and that performing activities in surface waters is unlawful where the activity is not authorized by the VWP permit or coverage, unless otherwise excluded from obtaining coverage. I also understand that the submittal of this notice does not release me from liability for any violations of the VWP general permit authorization or coverage, nor does it allow me to resume the authorized activities without reapplication and coverage."

M. Civil and Criminal Liability

Nothing in this VWP general permit shall be construed to relieve the permittee from civil and criminal penalties for noncompliance.

N. Oil and Hazardous Substance Liability

Nothing in this VWP general permit shall be construed to preclude the institution of legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under § 311 of the Clean Water Act or §§ 62.1-44.34:14 through 62.1-44.34:23 of the State Water Control Law.

O. Duty to Cease or Confine Activity

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the activity for which VWP general permit coverage has been granted in order to maintain compliance with the conditions of the VWP general permit or coverage.

P. Duty to Provide Information

1. The permittee shall furnish to the board any information that the board may request to determine whether cause exists for modifying, revoking, or terminating VWP permit coverage or to determine compliance with the VWP general permit or general permit coverage. The permittee shall also furnish to the board, upon request, copies of records required to be kept by the permittee.

2. Plans, maps, conceptual reports and other relevant information shall be submitted as required by

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the board prior to commencing construction.

Q. Monitoring and Records Requirements

1. Monitoring of parameters, other than pollutants, shall be conducted according to approved analytical methods as specified in the VWP permit. Analysis of pollutants will be conducted according to 40 CFR Part 136 (2000), Guidelines Establishing Test Procedures for the Analysis of Pollutants.
2. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
3. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart or electronic recordings for continuous monitoring instrumentation, copies of all reports required by the VWP general permit, and records of all data used to complete the application for coverage under the VWP general permit, for a period of at least three years from the date of general permit expiration. This period may be extended by request of the board at any time.
4. Records of monitoring information shall include, as appropriate:
 - a. The date, exact place and time of sampling or measurements;
 - b. The name of the individuals who performed the sampling or measurements;
 - c. The date and time the analyses were performed;
 - d. The name of the individuals who performed the analyses;
 - e. The analytical techniques or methods supporting the information such as observations, readings, calculations and bench data used;
 - f. The results of such analyses; and
 - g. Chain of custody documentation

R. Unauthorized Discharge of Pollutants

Except in compliance with this VWP general permit, it shall be unlawful for the permittee to:

1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances;
2. Excavate in a wetland;
3. Otherwise alter the physical, chemical, or biological properties of state waters and make them detrimental to the public health, to animal or aquatic life, to the uses of such waters for domestic or industrial consumption, for recreation, or for other uses; or
4. On and after August 1, 2001, for linear transportation projects of the Virginia Department of Transportation, or on and after October 1, 2001 for all other projects, conduct the following activities in a wetland:
 - a. New activities to cause draining that significantly alters or degrades existing wetland acreage or functions;
 - b. Filling or dumping;

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- c. Permanent flooding or impounding; or
- d. New activities that cause significant alteration or degradation of existing wetland acreage or functions.

S. Duty to Reapply

Any permittee desiring to continue a previously authorized activity after the expiration date of the VWP general permit shall comply with the provisions in 9VAC25-680-27.



Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

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Travis A. Voyles
Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director
(804) 698-4020

29 June 2023

Chandraratne B. Basnayake
Virginia Department of Transportation
4975 Alliance Drive
Fairfax, VA 22030

SENT VIA E-MAIL chan.basnayake@vdot.virginia.gov
RECEIPT CONFIRMATION REQUESTED

**CORPS OF ENGINEERS, NORFOLK DISTRICT
STATE PROGRAM GENERAL PERMIT (SPGP)**

22-SPGP-LT Verification Letter

VDEQ Permit Number: WP3 23-4050

VDOT Project No.: 0286-029-259, B628, B630, B631, B632, C501, D605, P101, R201

Fairfax County, Virginia

Dear Chandraratne B. Basnayake:

The Virginia Department of Environmental Quality (DEQ) has received and completed technical review of your application received by the VDEQ on 31 May 2023. DEQ has determined the proposed project, as described below, satisfies the terms and conditions contained in the 22-SPGP-LT. You are required to adhere to all terms and conditions contained within the attached 22-SPGP-LT permit. Your 22-SPGP-LT permit verification is effective as of the date on this letter and remains effective until **1 August 2026**.

1. Project Description: Widening of Route 286 from four (5) to six (6) lanes from Nomes Court to Route 29 that would include intersection improvements and pedestrian and bicycle amenities. The widening would result in stream and wetland impacts at three (3) crossings.
2. Impact and Compensation Description: The following table provides authorized impact amount. Compensation at a 2:1 ratio is required for the project's permanent impacts to palustrine forested wetlands. No stream mitigation is required as the project's three (3) crossings are considered single and complete projects and the impacts associated with each crossing do not exceed 300 linear feet or 0.03-acre.

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Impact Type	WOUS	Authorized Impact Amount	
		Area	Linear Feet
Permanent	Palustrine Forested Wetland (PFO)	0.01	NIA
	Palustrine Scrub-Shrub Wetland (PSS)	0	NIA
	Palustrine Emergent Wetland (PEM)	0	NIA
	Open Water (POW)	0	NIA
	Stream Channel	0.03	309
	<i>Subtotal</i>	<i>0.04</i>	<i>309</i>
Conversion	PFO to PEM	0	NIA
	<i>Subtotal</i>	<i>0</i>	<i>NIA</i>
Temporary	PFO	0.01	NIA
	PSS	0	NIA
	PEM	0	NIA
	POW	0	NIA
	Stream Channel	0.01	101
	<i>Subtotal</i>	<i>0.02</i>	<i>101</i>

- All compensatory mitigation credits shall be purchased from a *COENDEQ* approved mitigation bank, an approved in-lieu fee (ILF) program, or a combination thereof as specified above. The compensation shall be completed, and documentation shall be submitted to DEQ prior to commencement of work in WOUS. The application submitted on 31 May 2023 indicated the Virginia Department of Transportation (VDOT) has proposed withdrawal of credits from VDOT-administered Cedar Run Bank to satisfy the project's compensatory mitigation requirements described in Item 2 above. This mitigation approach is acceptable.

This letter shall serve as your 22-SPGP-LT verification to proceed with the project as proposed. Should your project or the proposed impacts change, a new application will be required and a new 22-SPGP-LT verification issued (provided the project meets the 22-SPGP-LT impact thresholds, otherwise a different Federal or State permit may be required).

Please contact Michael J. Mussomeli by phone at (804) 659-1986 or by email at michael.mussomeli@deq.virginia.gov if you have any questions or concerns regarding the information contained herein.

Respectfully,

D.L. Davis,
CPWD, PWS

Digitally signed by D.L.
 Davis, CPWD, PWS
 Date: 2023.06.27 09:00:17
 -04'00'

David L. Davis, CPWD, PWS
 Manager, Office of Wetlands & Stream Protection

Attachments: 22-SPGP-LT

- cc: John Muse, VDOT (Agent)
 Justin McClure, VDOT (Permit Coordinator)
 Dan Redgate, VDOT Central Office
 Michael J. Mussomeli, DEQ
 Brian Denson, U.S. Army Corps of Engineers



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**DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1011**

**CENAO-WRR STATE PROGRAMMATIC GENERAL PERMIT (SPGP)
LINEAR TRANSPORTATION (LT)
22-SPGP-LT**

Effective Date: August 08, 2022 Expiration Date: August 01, 2026

I. AUTHORITIES:

- A. 22-SPGP-LT authorizes, by the Secretary of the Army and the Chief of Engineers, under Section 404 of the Clean Water Act (CWA) (33 U.S.C. § 1344), the discharge of dredged or fill material in non-tidal waters of the United States (WOTUS), including wetlands, associated with certain Linear Transportation (LT) projects within the geographical limits of the Commonwealth of Virginia¹ and under the regulatory jurisdiction of the U.S. Army Corps of Engineers, Norfolk District (Corps or Norfolk District). The Corps' authority and guidance to develop general permits is contained in 33 U.S.C. § 1344(e), 33 C.F.R. § 325.2(e)(2), 33 C.F.R. § 325.3(b), and Corps Regulatory Guidance Letter (RGL) 83-7.
- B. 22-SPGP-LT projects must have no more than minimal individual and cumulative impacts and must meet all the terms and conditions outlined herein.
- C. The use of 22-SPGP-LT is restricted to those projects that have avoided and minimized impacts to WOTUS, including wetlands, to the maximum extent practicable.

II. PROCEDURES:

- A. **DELINEATION CONFIRMATIONS/PRELIMINARY FEDERAL SCREENINGS:**
Prior to the submission of an application for activities covered by 22-SPGP-LT a proponent must first obtain one of the following from the Corps:
 - 1. A Corps preliminary screening form (PSF) that is approved for use with a permit.
 - 2. A Corps confirmed preliminary jurisdictional determination (PJD) that is approved for use with a permit application.
 - 3. A Corps confirmed approved jurisdictional determination (AJD), confirmed under the governing jurisdictional rule in place at the time of receipt of the application, unless Corps guidance changes.
 - 4. The applicant will contact the Corps to obtain a preliminary federal screening/delineation confirmation/jurisdictional determination. When

¹ This SPGP is not available for use in the Commonwealth of Virginia subwatersheds shared with the State of Tennessee. These watersheds are identified in Appendix A of this document. Applicants may instead apply to the Corps of Engineers for Nationwide Permit or Regional General Permit verifications or a Standard Individual Permit.

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appropriate, a separate delineation confirmation may also be required from the Environmental Protection Agency (EPA).

- B. APPLICATION:** The following information must be submitted as part of the 22-SPGP-LT permit application:
1. A completed and signed Standard Joint Permit Application (JPA). The applicant must utilize the most recent version which is located on the Norfolk District Regulatory website.
 2. A JPA that is clearly marked 22-SPGP-LT.
 3. A preliminary federal screening or Corps confirmed delineation completed in accordance with Section II.A of this permit.
 4. A compensatory mitigation plan for all projects proposing any permanent loss of wetlands and/or 0.03 acre of stream bed or 300 linear feet of stream bed. *Stream channel loss must be reported in acreage and linear feet.*
- C. PROCESSING:**
1. The VMRC will send the application link to the applicable Virginia Department of Environmental Quality (VDEQ) Region for processing.
 2. Processing of the JPA is initiated when the VDEQ received the JPA link from the VMRC.
 3. Once the VDEQ has deemed the application complete for federal review, AND when Corps coordination is required, the VDEQ will forward the complete application to the Corps.
 4. The VDEQ is the agency responsible for ensuring permit applications meet the informational and technical requirements for issuance of 22-SPGP-LT verification letters and are in compliance with Virginia code and regulations.
- D. STATE APPROVALS:** Prior to commencing work in WOTUS, and to receive a 22-SPGP-LT verification, permittees must obtain a VDEQ Virginia Water Protection (VWP) individual permit or general permit coverage for the project. When required, permittees must also obtain a VMRC permit prior to commencing work in WOTUS.
- E. 22-SPGP-LT VERIFICATIONS:**
1. The VDEQ will issue all 22-SPGP-LT verification letters with special conditions (if applicable)
 2. The permittee is required to submit a new 22-SPGP-LT permit application to the VDEQ when a permit verification has been issued AND changes have been made to the project, including but not limited to: changes to the purpose, impact totals, impact type, jurisdiction, proposed compensation, etc.
 3. For all linear transportation projects that include the construction of wind energy generating structures, solar towers, or overhead powerlines the

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VDEQ must notify the DOD Clearinghouse of the permitted project. The VDEQ will send a copy of the joint permit application and SPGP verification letter to the following address: DOD Clearinghouse, 3400 Defense Pentagon, Room 5C646 or osd.dod-siting-clearinghouse@mail.mil

4. The 22-SPGP-LT may also be used for activities excluded from VWP permitting when those activities are associated with qualifying residential, commercial, institutional and/or recreational development projects that require a state VWP permit.

F. **EXCLUDED ACTIVITIES:** The 22-SPGP-LT may not be used to authorize projects that propose the following activities:

1. Mining activities and operations for new and existing mining operation
2. Total Maximum Daily Loads (TMDL) projects.
3. The construction of stand-alone stormwater management facilities that are not an attendant feature of a linear transportation project.

III. **DEFINITIONS:**

- A. Loss: WOTUS that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. The loss of stream bed includes the acres of stream bed that are permanently adversely affected by filling or excavation because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of WOTUS is a threshold measurement of the impact to jurisdictional waters or wetlands for determining whether a project may qualify for a 22-SPGP-LT; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. WOTUS temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of WOTUS. Impacts resulting from activities that do not require Department of the Army authorization, such as activities eligible for exemptions under section 404(f) of the Clean Water Act, are not considered when calculating the loss of WOTUS.
- B. Permittee: The responsible party in receipt of the 22-SPGP-LT verification from the VDEQ. The permittee will be the responsible party for complying with all 22-SPGP-LT general conditions as well as any additional special conditions required for each single and complete project.
- C. Linear Transportation: Construction, expansion, modification or improvement of linear transportation project (e.g., roads, highways, railways, trails, airport runways and taxiways)

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- D. Stormwater Management Facilities: Construction of stormwater management facilities, including stormwater detention basins and retention basins and other stormwater management facilities; the construction of water control structures, outfall structures and emergency spillways; the construction of low impact development integrated management features such as bioretention facilities (e.g., rain gardens), vegetated filter strips, grassed swales, and infiltration trenches; and the construction of pollutant reduction green infrastructure features designed to reduce inputs of sediments, nutrients, and other pollutants into waters, such as features needed to meet reduction targets established under Total Maximum Daily Loads set under the Clean Water Act.

IV. AUTHORIZED ACTIVITIES:

Linear Transportation Activities Eligibility Criteria:

1. **The discharge must not cause the loss of greater than 1/2 acre of WOTUS (e.g., wetlands, open water, and stream channel). *Stream channel loss must be reported in acreage and linear feet.***
2. Activities are subject to Corps regulations.
3. Activities involve the discharge of dredged/fill material into WOTUS (e.g., wetlands, open water, and stream channel), associated with linear transportation projects
4. Activities meet the general and special conditions of 22-SPGP-LT listed in this document and any special conditions required of each project-specific verification.
5. All required compensatory mitigation follows the Mitigation Rule [Corps-EPA Compensatory Mitigation for Losses of Aquatic Resources, dated April 10, 2008, 33 CFR 325 and 332/40 CFR 230].
6. All applicable federal reviews, listed in the general conditions of this document, have been completed.
7. All required state approvals have been received.

V. GENERAL CONDITIONS:

The following conditions apply to all activities authorized under 22-SPGP-LT. Work that does not meet one or more of the terms or general conditions of 22-SPGP-LT, including work that has been determined to be more than minimal in nature (at any impact level), will require consideration under a different type of Corps permit.

1. Other permits: Authorization does not obviate the need to obtain other Federal, state, or local authorizations required by law or to comply with all Federal, state, or local laws.
2. Minimal effects: Projects authorized shall have no more than minimal individual or cumulative adverse environmental impacts.

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3. Discretionary authority: The Corps District Commander retains discretionary authority to require processing of an individual permit based on concerns for the aquatic environment or for any other factor of the public interest (33 C.F.R. § 320.4(a)). This authority is exercised on a case-by-case basis.
4. Single and complete non-linear projects: The activity must be a single and complete project. For non-linear projects, the term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of “independent utility”). Single and complete non-linear projects may not be “piecemealed” to avoid the limits of a 22-SPGP-LT authorization.
5. Single and complete linear projects: The activity must be a single and complete project. A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term “single and complete project” is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of 22-SPGP-LT authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.
6. Independent utility: A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.
7. Multiple general permit authorizations.: The 22-SPGP-LT may be combined with other Corps general permits (including Nationwide, Regional or other programmatic general permits) if the impacts are considered cumulatively and do not exceed the acreage limit or linear footage limits of the 22-SPGP-LT.

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8. Permit on-site: The permittee shall ensure that a copy of 22-SPGP-LT and the accompanying authorization letter are always at the work site. These copies must be made available to any regulatory representative upon request. Although the permittee may assign various aspects of the work to different contractors or sub-contractors, all contractors and sub-contractors shall be expected to comply with all conditions of any 22-SPGP-LT verification.
9. Historic Properties:
 - a. No activity is authorized under the 22-SPGP-LT which may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.
 - b. Federal permittees: should follow their own procedures for complying with the requirements of section 106 of the NHPA (see 33 CFR 330.4(g)(1)). The Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.
 - c. Non-federal permittees: must state which historic properties might have the potential to be affected by the proposed 22-SPGP-LT activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the NHPA (see 33 CFR 330.4(g)). When reviewing permit applications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the NHPA. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts commensurate with potential impacts, which may include background research, consultation, oral history interviews, sample field investigation, and/or field survey. Based on the information submitted in the permit application and these identification efforts, the district engineer shall determine whether the proposed SPGP activity has the potential to cause effects on the historic properties. Section 106

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consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect.

- d. Where the non-Federal applicant has identified historic properties on which the proposed 22-SPGP-LT activity might have the potential to cause effects and has so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed.
- e. Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.
- f. Discovery of Previously Unknown Remains and Artifacts. Permittees that discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by 22-SPGP-LT, they

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must immediately notify the district engineer of what they have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery.

Non-federal permittees shall not begin work on the activity until Section 106 review and/or consultation has been completed AND they have received their 22-SPGP-LT verification letter from the VDEQ.

10. Tribal Rights: No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.
11. Federal Lands: Authorized activities shall not impinge upon the value of any National Wildlife Refuge, National Forest, National Park, or any other area administered by the United States Fish and Wildlife Service (USFWS), U.S. Forest Service, or National Park Service unless approval from the applicable land management agency is provided with the permit application.
12. Endangered Species: No activity is authorized under any 22-SPGP-LT which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any 22-SPGP-LT which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the District Engineer with the appropriate documentation to demonstrate compliance with those requirements. The District Engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the 22-SPGP-LT activity, or whether additional ESA consultation is necessary.

Non-federal permittees shall not begin work on the activity until Section 7 review and/or consultation has been completed AND they have received their 22-SPGP-LT verification letter from the VDEQ.

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Authorization of an activity by a 22-SPGP-LT does not authorize the “take” of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit or a Biological Opinion with “incidental take” provisions, etc.) from the USFWS or the National Marine Fisheries Service (NMFS), The Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word “harm” in the definition of “take” means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the USFWS and NMFS or their World Wide Web pages at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.noaa.gov/fisheries.html> respectively.

13. Migratory Birds and Bald and Golden Eagles: The permittee is responsible for ensuring that an action authorized by the 22-SPGP-LT complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting the appropriate local office of the USFWS to determine what measures, if any, are necessary or appropriate to reduce adverse effects to migratory birds or eagles, including whether “incidental take” permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.
14. Wild and Scenic Rivers: Currently, there are no designated Wild and Scenic Rivers in Virginia. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system, while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river has determined, in writing, that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service (NPS), U.S. Forest Service (USFS), Bureau of Land Management (BLM), USFWS). Impacts that occur in these resource areas will require coordination with the appropriate Federal agency.

15. Navigation:

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- a. No activity may cause more than a minimal adverse effect on navigation.
 - b. Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable WOTUS.
 - c. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
16. Floodplains: The activity must comply with applicable Federal Emergency Management Agency FEMA-approved state or local floodplain management requirements.
17. 408 Certification: Under 33 USC 408, no activity may temporarily or permanently alter or make use of a U.S. Army Corps of Engineers civil works project unless reviewed and permitted by the Secretary of the Army. The Corps may grant this permission if the work does not impair the usefulness of the project and is not injurious to the public interest.
18. Environmental justice: Activities authorized under 22-SPGP-LT must comply with Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations".
19. Federal liability: In issuing 22-SPGP-LT, the Federal government does not assume any liability for the following:
- a. damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
 - b. damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
 - c. damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by 22-SPGP-LT.
 - d. design or construction deficiencies associated with the permitted work.

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- e. damage claims associated with any future modification, suspension, or revocation of this permit.
20. Avoidance and minimization: Except as provided under section 404(b)(2), no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences. (40 CFR 230.10(a)-(d) Section 404 (b)(1) Guidelines).
21. Compensatory Mitigation: For linear transportation project, mitigation will generally be required for all permanent loss of wetlands and/or 0.03 acre of stream bed or 300 linear feet of stream bed. *Stream channel loss must be reported in acreage and linear feet.*
- a. WETLANDS and OPEN WATERS:
 - i. All wetland mitigation will comply with the Mitigation Rule [Corps-EPA Compensatory Mitigation for Losses of Aquatic Resources, dated April 10, 2008, 33 CFR 325 and 332/40 CFR 230].
 - ii. Wetland mitigation: will generally be required for all permanent wetland impacts
 - iii. Generally, the minimum required wetland mitigation ratios will be as follows:
 - 2:1 for forested wetlands
 - 1.5:1 for scrub-shrub wetlands
 - 1:1 for emergent wetlands
 - 0.5:1 for permanent loss of open waters
 - 1:1 for conversion of forested or scrub-shrub wetlands to emergent wetlands when certain functions and services of WOTUS are permanently adversely affected by a regulated activity. (e.g., when a discharge of dredge or fill material into WOTUS will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way)
 - iv. On a case-by-case basis, additional compensatory mitigation may be required to ensure impacts are minimal:
 - For permanent or temporary conversion of one wetland type to another
 - For wetland impacts totaling less than 1/10 acre
 - At mitigation ratios beyond the generally recommend ratios
 - b. STREAMS: mitigation will generally be required for all projects where the permanent loss exceeds 0.03 acre or 300 linear feet

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of stream bed. *Stream channel loss must be reported in acreage and linear feet.*

- i. All stream mitigation will comply with the Mitigation Rule [Corps-EPA Compensatory Mitigation for Losses of Aquatic Resources, dated April 10, 2008, 33 CFR 325 and 332/40 CFR 230].
 - ii. Minimum stream mitigation requirements will be determined using the current Corps and VDEQ endorsed assessment methodology.
 - iii. On a case-by-case basis, additional compensatory mitigation may be required to ensure impacts are minimal:
 - For stream mitigation requirements that exceed the assessment methodology recommendation.
 - For mitigation for impacts totaling less than 0.03 acre or 300 linear feet of stream bed may be required on a case-by-case basis to ensure impacts minimal.
22. Heavy Equipment: Heavy equipment working in wetlands must be placed on mats, or other measures must be taken to minimize soil disturbance.
23. Temporary fills: The soils of any temporarily impacted areas located in wetlands that are cleared, grubbed, and/or filled, must be restored once these areas are no longer needed for their authorized purpose, no later than completion of project construction, and not to exceed twelve (12) months after commencing the temporary impacts. To restore, temporary fill must be removed in its entirety and the affected areas returned to preconstruction elevations, the soil surface loosened by ripping or chisel plowing to a depth of 8-12", and then seeded using native wetland species
- Fill or dredged material in WOTUS. that is not removed within the 12-month period will be considered a permanent impact, unless otherwise determined by the Corps. This additional impact to WOTUS may result in the Corps initiating a permit non-compliance action, which may include a restoration order, after-the-fact permitting, and/or compensatory mitigation.
24. Sedimentation and erosion control: Appropriate soil erosion and sediment 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. Permittees are encouraged to perform work within WOTUS during periods of low-flow or no-flow.

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25. Countersinking of Pipes and Culverts: Based on consultation with Virginia Department of Wildlife Resources (VDWR), the Corps has determined that fish and other aquatic organisms are most likely present in any nontidal stream being crossed, in the absence of site-specific evidence to the contrary. The following conditions will apply in nontidal waters:
- a. All pipes and culverts placed in streams will be countersunk at both the inlet and outlet ends, unless indicated otherwise by the Corps on a case-by-case basis (see below). Pipes that are 24" or less in diameter shall be countersunk 3" below the natural stream bottom. Pipes that are greater than 24" in diameter shall be countersunk 6" below the natural stream bottom. The countersinking requirement does not apply to bottomless pipes/culverts or pipe arches. 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.
 - b. When countersinking culverts, permittees must ensure reestablishment of a surface water channel (within 15 days post construction) that allows for the movement of aquatic organisms and maintains the same hydrologic regime that was present preconstruction (i.e. the depth of surface water through the permit area should match the upstream and downstream depths). This may require the addition of finer materials to choke the larger stone and/or placement of riprap to allow for a low flow channel.
 - c. The requirement to countersink does not apply to extensions of existing pipes or culverts that are not countersunk, or to maintenance of pipes/culverts that do not involve replacing the pipe/culvert (e.g., repairing cracks, adding material to prevent/correct scour, etc.).
 - d. Floodplain pipes: The requirement to countersink does not apply to pipes or culverts that are being placed above ordinary high water, such as those placed to allow for floodplain flows. The placement of pipes above ordinary high water is not jurisdictional (provided no fill is discharged into wetlands).

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- e. Hydraulic opening: Pipes should be adequately sized to allow for the passage of ordinary high water with the countersinking and invert restrictions taken into account.

- f. Pipes on bedrock or above existing utility lines: Different procedures will be followed for pipes or culverts to be placed on bedrock or above existing buried utility lines where it is not practicable to relocate the lines, depending on whether the work is for replacement of an existing pipe/culvert or a new pipe/culvert:
 - i. Replacement of an existing pipe/culvert: Countersinking is not required provided the elevations of the inlet and outlet ends of the replacement pipe/culvert are no higher above the stream bottom than those of the existing pipe/culvert. Documentation (photographic or other evidence) must be maintained in the permittee's records showing the bedrock condition and the existing inlet and outlet elevations.

 - ii. A pipe/culvert is being placed in a new location: If the permittee determines that bedrock or an existing buried utility line that is not practicable to relocate prevents countersinking, they should evaluate the use of a bottomless pipe/culvert, bottomless utility vault, span (bridge) or other bottomless structure to cross the waterway, and also evaluate alternative locations for the new pipe/culvert that will allow for countersinking. If the permittee determines that neither a bottomless structure nor an alternative location is practicable, justification must be provided in the 22-SPGP-LT application. The permittee must provide documentation of measures evaluated to minimize disruption of the movement of aquatic life as well as documentation of the cost, engineering factors, and site conditions that prohibit countersinking the pipe/culvert. Options that must be considered include partial countersinking (such as less than 3" of countersinking, or countersinking of one end of the pipe), and constructing stone step pools, low rock weirs downstream, or other measures to provide for the movement of aquatic organisms. The permit application must also include photographs documenting site conditions. NOTE: Blasting of stream bottoms through the use of explosives is not acceptable as a means of providing for countersinking of pipes on bedrock.

- g. Pipes on steep terrain: Pipes being placed on steep terrain (slope of 5% or greater) must be countersunk in accordance with the

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conditions above and will in most cases be non-reporting. It is recommended that on slopes greater than 5%, a larger pipe than required be installed to allow for the passage of ordinary high water in order to increase the likelihood that natural velocities can be maintained. There may be situations where countersinking both the inlet and outlet may result in a slope in the pipe that results in flow velocities that cause excessive scour at the outlet and/or prohibit some fish movement. This type of situation could occur on the side of a mountain where falls and drop pools occur along a stream. Should this be the case, or should the permittee not want to countersink the pipe/culvert for other reasons, justification must be provided in the 22-SPGP-LT application. The permittee must provide documentation of measures evaluated to minimize disruption of the movement of aquatic life as well as documentation of the cost, engineering factors, and site conditions that prohibit countersinking the pipe/culvert. The permittee should design the pipe to be placed at a slope as steep as stream characteristics allow, countersink the inlet 3-6", and implement measures to minimize any disruption of fish movement. These measures can include constructing a stone step/pool structure, preferably using river rock/native stone rather than riprap, constructing low rock weirs to create a pool or pools, or other structures to allow for fish movements in both directions. Stone structures should be designed with sufficient-sized stone to prevent erosion or washout and should include keying-in as appropriate. These structures should be designed both to allow for fish passage and to minimize scour at the outlet. The quantities of fill discharged below ordinary high water necessary to comply with these requirements (i.e., the cubic yards of stone, riprap or other fill placed below the plane of ordinary high water) must be included in project totals.

- h. Problems encountered during construction: When a pipe/culvert is being replaced, and the design calls for countersinking at both ends of the pipe/culvert, and during construction it is found that the streambed/banks are on bedrock, a utility line, or other documentable obstacle, then the permittee must stop work and contact the VDEQ (contact by telephone and/or email is acceptable). The permittee must provide the VDEQ with specific information concerning site conditions and limitations. The VDEQ will work with the permittee to determine an acceptable plan, taking into consideration the information provided by the permittee, but the permittee should recognize that the VDEQ and/or Corps could determine that the work will not qualify for a 22-SPGP-LT permit.

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- i. Emergency pipe replacements: In the case of an emergency situation, such as when a pipe/culvert washes out during a flood, a permittee is encouraged to countersink the replacement pipe at the time of replacement, in accordance with the conditions above. However, if conditions or timeframes do not allow for countersinking, then the pipe can be replaced as it was before the washout, but the permittee will have to come back and replace the pipe/culvert and countersink it in accordance with the guidance above. In other words, the replacement of the washed-out pipe is viewed as a temporary repair, and a countersunk replacement should be made at the earliest possible date. The VDEQ must be notified of all pipes/culverts that are replaced without countersinking at the time that it occurs, even if it is an otherwise non-reporting activity, and must provide the permittee's planned schedule for installing a countersunk replacement (it is acceptable to submit such notification by email). The permittee should anticipate whether bedrock or steep terrain will limit countersinking, and if so, should follow the procedures outlined in (f) and/or (g) above.
26. Discharge of pollutants: All authorized activities involving any discharge of pollutants into WOTUS shall be consistent with applicable water quality standards, effluent limitations, standards of performance, prohibitions, and pretreatment standards and management practices established pursuant to the CWA (33 U.S.C. § 1251 et seq.) and applicable state and local laws.
27. Suitable Material: No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).
28. Obstruction of high flows: Discharges of dredged or fill material must not permanently restrict or impede the passage of normal or expected high flows.
29. Aquatic Life Movements: 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. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless

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culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

30. Spawning Areas: Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.
31. Migratory Bird Breeding Areas: Activities in WOTUS that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.
32. Native Trout: Designated Trout Waters, are defined by the Virginia State Water Control Board and the VDWR. The waters, occurring specifically within the mountains of Virginia, are within the following river basins:

Potomac-Shenandoah River Basins
James River Basin
Roanoke River Basin
New River Basin
Tennessee and Big Sandy River Basins
Rappahannock River Basin

Information on designated trout streams can be obtained via VDWR's Virginia Fish and Wildlife Information Service's (VAFWIS's) Cold Water Stream Survey database. Basic access to the VAFWIS is available via <https://services.dwr.virginia.gov/fwis/index.asp>.

VDWR recommends the following time-of-year restrictions (TOYRs) for any in-stream work within streams identified as wild trout waters in its Cold Water Stream Survey database. The recommended TOYRs for trout species are:

Brook Trout: October 1 through March 31
Brown Trout: October 1 through March 31
Rainbow Trout: March 15 through May 15

This condition applies to the following counties and cities: Albemarle, Allegheny, Amherst, Augusta, Bath, Bedford, Bland, Botetourt, Bristol, Buchanan, Buena Vista, Carroll, Clarke, Covington, Craig, Dickenson, Floyd, Franklin, Frederick, Giles, Grayson, Greene, Henry, Highland, Lee, Loudoun, Madison, Montgomery, Nelson, Page, Patrick, Pulaski, Rappahannock, Roanoke City, Roanoke Co., Rockbridge, Rockingham,

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Russell, Scott, Shenandoah, Smyth, Staunton, Tazewell, Warren, Washington, Waynesboro, Wise, and Wythe.

33. Anadromous Fish Use Areas: Authorizations associated with the 22-SPGP-LT shall not adversely affect spawning habitat or a migratory pathway for anadromous fish. Areas of anadromous fish use are indicated on the VDWR information system at:
<https://services.dwr.virginia.gov/fwis/index.asp>.

If a project is located within an area documented as an anadromous fish use area (confirmed or potential), all in-stream work is prohibited from occurring between February 15 through June 30 of any given year or other time of year restriction (TOYR) specified by the VDWR and/or the Virginia Marine Resources Commission (VMRC).

Should the Corps determine that the work is minimal and no TOYR is needed, the Corps will initiate consultation with National Oceanic Atmospheric Administration (NOAA) Fisheries Service for their concurrence.

34. Water supply intakes: 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

35. Invasive Species: Plant species listed in the most current Virginia Department of Conservation and Recreation's (DCR) Invasive Alien Plant List shall not be used for revegetation for activities authorized by the 22-SPGP-LT. The list of invasive plants in Virginia is found at:
<https://www.dcr.virginia.gov/natural-heritage/invspdflist>. DCR recommends the use of regional native species for re-vegetation as identified in the DCR Native Plants for Conservation, Restoration and Landscaping brochures for the coastal, piedmont and mountain regions <http://www.dcr.virginia.gov/natural-heritage/nativeplants#brochure> also see the DCR native plant finder: <https://www.dcr.virginia.gov/natural-heritage/native-plants-finder>.

36. Inspections: The permittee understands and agrees that the Corps and/or the VDEQ are permitted and allowed to make periodic inspections at any time the Corps or VDEQ deems necessary to assure that the activities being performed under authority of this permit are in accordance with the terms and conditions prescribed herein. The Corps reserves the right to require post-construction engineering drawings and/or surveys of any work authorized under 22-SPGP-LT, as deemed necessary on a case-by-case basis.

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37. Maintenance: Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable 22-SPGP-LT general conditions.
38. Property rights: 22-SPGP-LT does not convey any property rights, either in real estate or material, or convey any exclusive privileges, nor does it authorize any injury to property or invasion of rights or any infringement of Federal, state, or local laws or regulations. If real estate rights are needed from the Corps, the permittee must contact the Corps Real Estate Office at (757) 201-7733 or at the address listed on the front page of this permit.
39. Suspension and revocation: 22-SPGP-LT and individual verifications under 22-SPGP-LT maybe either suspended or revoked in whole or in part pursuant to the policies and procedures of 33 C.F.R. § 325.7. Any such action shall not be the basis for any claim for damages against the United States.
40. Restoration directive: The permittee, upon receipt of a restoration directive, shall restore the WOTUS to their former conditions without expense to the United States and as directed by the Secretary of the Army or his/her authorized representative. If the permittee fails to comply with such a directive, the Secretary or his/her designee, may restore the WOTUS to their former conditions, by contract or otherwise, and recover the cost from the permittee.
41. Special conditions: The Corps may impose other special conditions on a project verified pursuant to 22-SPGP-LT that are determined necessary to minimize adverse navigational and/or environmental effects or based on any other factor of the public interest. Failure to comply with all conditions of the authorization/verification, including special conditions, constitutes a permit violation and may subject the permittee, or his/her contractor, to criminal, civil, or administrative penalties and/or restoration.
42. False or incomplete information: In granting authorization pursuant to this permit, the Corps and/or the VDEQ has relied upon information and data provided by the permittee. If, subsequent to notification by the Corps and/or the VDEQ that a project qualifies for this permit, such information and data prove to be false or incomplete, the Corps may suspend or revoke authorization, in whole or in part, and/or the United States or Corps may institute appropriate legal proceedings.
43. Abandonment: If the permittee decides to abandon the activity authorized under 22-SPGP-LT, unless such abandonment is merely the transfer of

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property to a third party, they may be required to restore the area to the satisfaction of the Corps.

44. Transfer of verification: To transfer verification under 22-SPGP-LT, the transferee and permittee must supply the Corps and the VDEQ with a written and signed, by all appropriate parties, request to make such a transfer. Such transfer is not effective until written approval has been granted by the Corps or the VDEQ.
45. Binding effect. The provisions of the permit authorization shall be binding on any assignee or successor in interest of the original permittee.
46. Expiration of 22-SPGP-LT: Unless further suspended or revoked the 22-SPGP-LT will be in effect until August 01, 2026.
 - a. Activities which have commenced (i.e., are under construction) or are under contract to commence construction in reliance upon 22-SPGP-LT will remain authorized provided the activity is completed within twelve months of the date of this 22-SPGP-LT's expiration of August 01, 2026, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with 33 CFR 325.7(a-e). Activities qualifying for this extension that are not complete by August 02, 2027, must apply for new general and/or individual Corps permit authorization.
 - b. Activities which have NOT commenced and are NOT under contract to commence construction by the August 01, 2026, expiration must apply for a new general and/or individual Corps permit authorization.

 Digitally signed by
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Date: 2022.07.29 07:43:18
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Brian P. Hallberg, PMP
Colonel, U.S. Army
Commanding

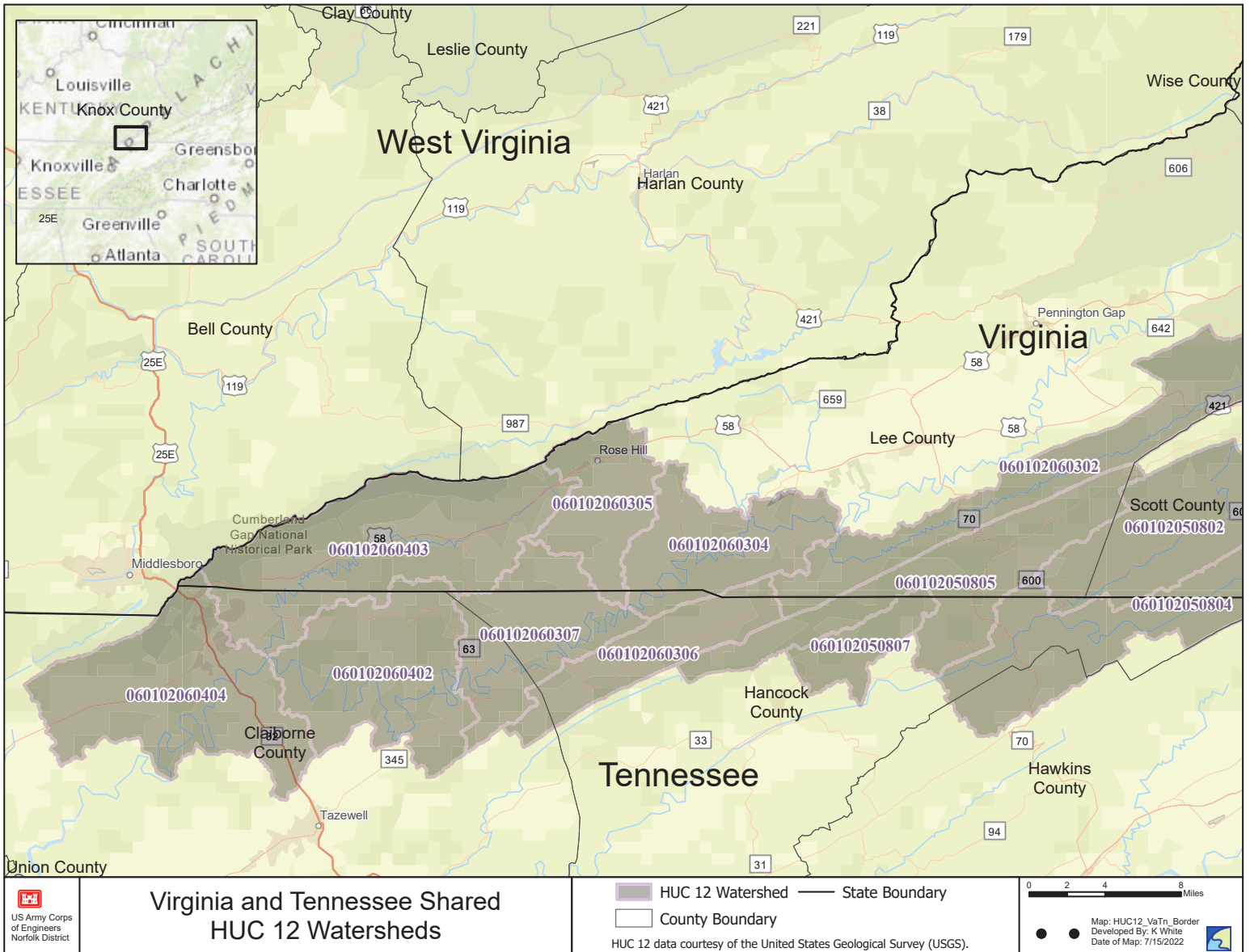
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CENAO-WRR STATE PROGRAMMATIC GENERAL PERMIT (SPGP)
 LINEAR TRANSPORTATION (LT)
 22-SPGP-LT

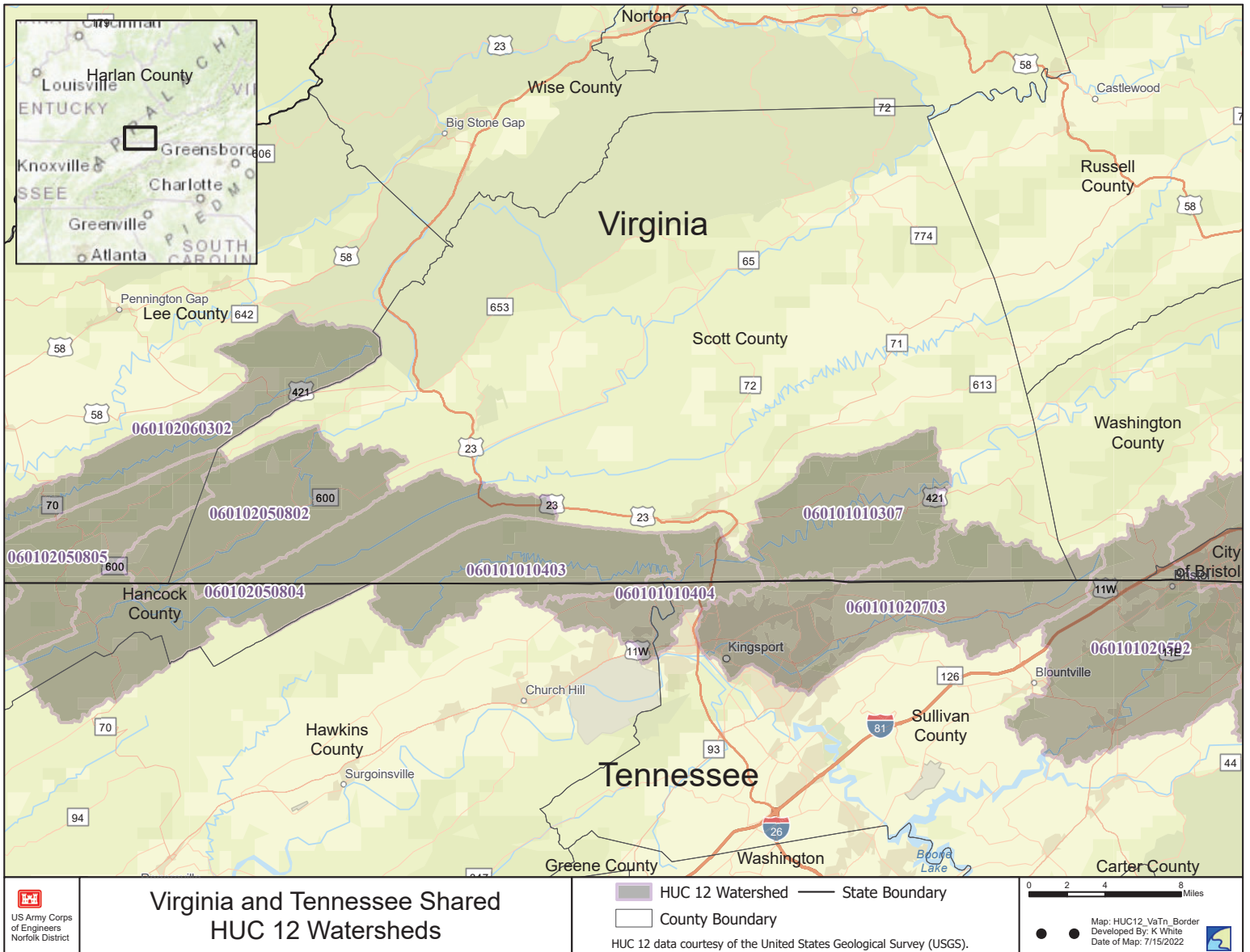
APPENDIX A

As noted on the Page 1 footnote, this SPGP is not available for use in the subwatersheds listed in the table below and depicted on the attached maps. Applicants may also utilize the Virginia Department of Conservation and Recreation’s on-line Virginia Hydrologic Unit Explorer tool to determine the subwatershed of their project’s location: <http://consapps.dcr.virginia.gov/htdocs/maps/HUExplorer.htm>.

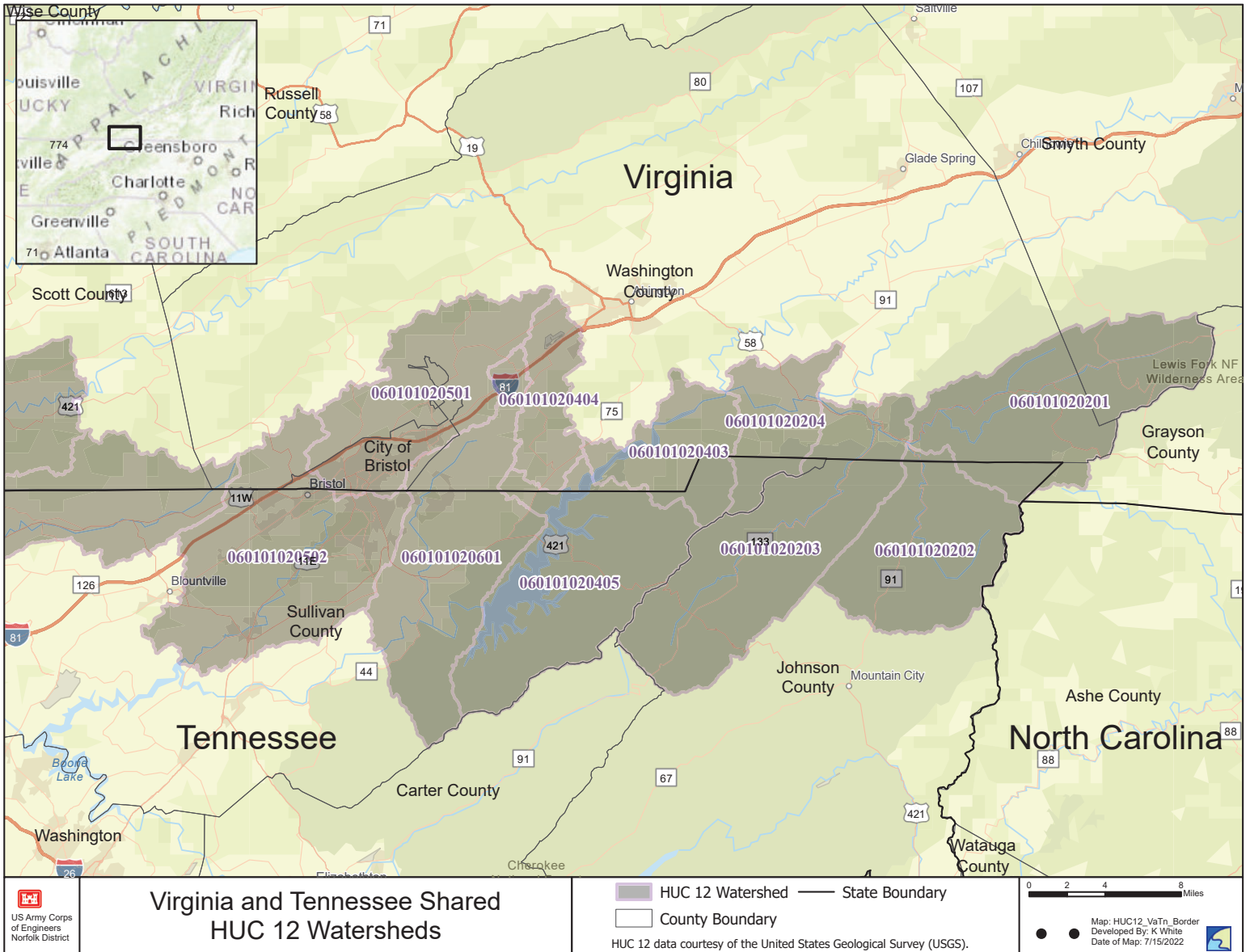
HUC 12	HUC 12 Subwatershed Name
060101010307	Roberts Creek – North Fork Holston River
060101010403	Possum Creek
060101010404	Newland Hollow - North Fork Holston River
060101020201	Big Laurel Creek - Whitetop Laurel Creek
060101020202	Elliot Branch-Laurel Creek
060101020203	Beaverdam Creek - Laurel Creek
060101020204	Rockhouse Run – South Fork Holston River
060101020403	South Holston Lake – South Holston River
060101020404	Spring Creek
060101020405	Painter Spring Branch – South Holston River
060101020501	Little Creek – Beaver Creek
060101020502	Steele Creek – Beaver Creek
060101020601	Beidleman Creek – South Fork Holston River
060101020703	Reedy Creek
060102050802	Lower North Fork Clinch River
060102050804	Powers Branch – Clinch River
060102050805	Blackwater Creek
060102050807	Panther Creek
060102060302	Wallen Creek
060102060304	Yellow Creek – Powell River
060102060305	Martin Creek
060102060306	Mulberry Creek
060102060307	Fourmile Creek - Powell River
060102060402	Cox Creek – Powell River
060102060403	Indian Creek
060102060404	Gap Creek – Powell River



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Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

1111 E. Main Street, Suite 1400, Richmond, Virginia 23219

P.O. Box 1105, Richmond, Virginia 23218

(800) 592-5482 FAX (804) 698-4178

www.deq.virginia.gov

Travis A. Voyles
Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director
(804) 698-4020

29 June 2023

Chandraratne B. Basnayake
Virginia Department of Transportation
4975 Alliance Drive
Fairfax, VA 22030

SENT VIA E-MAIL chan.basnayake@vdot.virginia.gov
RECEIPT CONFIRMATION REQUESTED

Re: Virginia Water Protection (VWP) General Permit Tracking Number

WP3 23-4050

Permittee: Chandraratne B. Basnayake
Address: Virginia Department of Transportation- Fairfax District
4975 Alliance Drive
Fairfax, VA 22030

Project Name, Project Location, and Project Description: See Attachment 3 – Monthly Reporting of Impacts Less Than or Equal to One-Tenth Acre – May 2023

Dear Chandraratne B. Basnayake:

The Virginia Department of Environmental Quality (DEQ) has reviewed your application included on Attachment 3, received on 31 May 2023. Based on DEQ's review, the proposed project on Attachment 3 qualifies for coverage under the VWP General Permit Number WP3 in accordance with 9VAC25-680.

Compliance with the following requirements, limits, and other conditions, in addition to those contained in VWP General Permit 3, is required by VA. Code §62.1-44.15:20 A and 9VAC25-680-30 A(3):

1. This coverage authorizes 300 square feet (s.f.) of permanent impacts to palustrine forested wetlands.
2. This coverage authorizes 309 linear feet (l.f.) of permanent impact to streambed (three [3] crossings).

3. VWP General Permit Part I, Part II (Sections B, E 1-4, 7-11), and Part III are applicable to the projects listed on Attachment 3. VWP General Permit Part II (Sections A, C, D, E-5 and E-6) are not applicable to this project since compensation is not required for impacts of less than or equal to 0.10-acre of wetlands or open water, or stream channel impacts less than or equal to 300 linear feet. Attachments 1 and 2 are used for the purposes of reporting compliance.
4. When countersinking culverts in streams, the permittee shall install the structure and any riprap or ancillary features in a manner to ensure reestablishment of the stream channel within 15 days post construction. When installing culverts in any surface water, the permittee shall install the culvert and ancillary features in a manner that will ensure that the movement of aquatic organisms is not impeded and maintain the pre-construction hydrologic regime. Surface water depth within the impact area shall be consistent with depths upstream and downstream of the impact area.
5. The permittee shall notify DEQ within 24 hours of discovering impacts to surface waters (including wetlands) that are not authorized by this permit. The notification shall include photographs, estimated acreage and/or linear footage of impacts, and a description of the impacts.

The VWP General Permit **WP3** expires on 1 August 2026. If the covered activity/activities has/have not been completed and the permittee wishes to complete the work, the permittee must reapply for coverage under a VWP general permit in effect at that time or a VWP individual permit. Activities in surface waters requiring a permit shall not continue until such VWP general permit coverage is granted or until such VWP individual permit is issued by the board. If you have any questions, please contact Michael J. Mussomeli by phone at 804-659-1986 or by email at michael.mussomeli@deq.virginia.gov.

Respectfully,

D.L. Davis, CPWD, PWS
Digitally signed by D.L. Davis,
 CPWD, PWS
 Date: 2023.06.27 08:59:21 -04'00'

 David L. Davis, CPWD, PWS
 Manager, Office of Wetlands & Stream Protection

 Date

Enclosures: VWP General Permit; Attachment 1 - *VWP Permit Construction Status Update Form*; Attachment 2 - *Monthly VWP Permit Inspection Checklist*; Attachment 3 - *Monthly Reporting of Impacts Less Than or Equal to One-Tenth Acre May2023*

- cc: John Muse, VDOT (Agent)
 Justin McClure, VDOT (Permit Coordinator)
 Dan Redgate, VDOT Central Office
 Michael J. Mussomeli, DEQ
 Brian Denson, U.S. Army Corps of Engineers



Attachment 1: VWP PERMIT CONSTRUCTION STATUS UPDATE FORM

Permit Coverage: 29 June 2023

Send to: michael.mussomeli@deq.virginia.gov

Date (check one):

June ____, _____

December ____, _____

VWP General Permit Tracking Number: WP3 23-4050

Project Name and Location: 0286-029-259, B628, B630, B631, B632, C501, D605, P101, R201; Fairfax County, Virginia

Status within each authorized surface water impact location, as identified on Permit Sketches Entitled “Fairfax Parkway (Rte. 286) Widening,” dated April 2023 and received 31 May 2023.

Check one of the following status options for each impact number/location

Authorized impact number	Construction activities not started	Construction activities started	Construction activities started but currently not active	Does this impact involve culvert(s) ¹ ?	Construction activities complete ²

¹ Provide spot elevations of the stream bottom within the thalweg at the beginning and end of the pipe or culvert, extending to a minimum of 10 feet beyond the limits of the impact, with completion of all culvert installations.

² If all construction activities and compensatory mitigation requirements are complete, the permittee completes and signs the Termination Agreement section below within 30 days of last authorized activity and/or compensation completion. A completed and signed Agreement serves as Notice of Project Completion (9VAC25-210-130 F).

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate 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 violation.

Authorized Signature: _____

Print Name: _____

Title: _____ Phone: _____

Date: _____ Email: _____

TERMINATION AGREEMENT BY CONSENT – PROJECT COMPLETION

Permittee Name: _____

Permittee Mailing Address: _____

Permittee Phone: _____

I hereby consent to the termination of coverage for VWP General Permit Tracking Number WP3 23-4035.

"I certify under penalty of law that all activities and any required compensatory mitigation authorized by the VWP general permit and general permit coverage have been completed. I understand that by submitting this notice of termination I am no longer authorized to perform activities in surface waters in accordance with the VWP general permit and general permit coverage, and that performing activities in surface waters is unlawful where the activity is not authorized by the VWP permit or coverage, unless otherwise excluded from obtaining coverage. I also understand that the submittal of this notice does not release me from liability for any violations of the VWP general permit or coverage."

Permittee Signature: _____

Attachment 2: MONTHLY VWP PERMIT INSPECTION CHECKLIST

An inspection of all permitted impact areas, avoided waters and wetlands, and permanently preserved waters, wetlands and upland areas must be conducted at least once every month during active construction activities. Maintain this record on-site and available for inspection by DEQ staff.

Project Name 0286-029-259, B628, B630, B631, B632, C501, D605, P101, R201	VWP Permit # WP3 23-4050	Inspection Date
Inspector Name & Affiliation	Phone # & Email Address	

I certify that the information contained in this report 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.

Signature of Inspector

Date

PERMIT REQUIREMENT	In Compliance?			Location, Description, Notes & Corrective Action Taken (use additional note space below if needed)	Date Completed
	Yes	No	Not Applicable		
Surface water impacts are limited to the size and locations specified by the permit. No sedimentation impacts and no impacts to upland preservation areas have occurred ¹ .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Within 50 feet of authorized activities, all remaining surface waters and mitigation (preservation) areas that are inside the project area are clearly flagged or marked to prevent unpermitted impacts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Authorized temporary impact areas have been restored to original contours, stabilized, and planted or seeded with original wetland vegetation type within 30 days of completing work in each area.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
E&S controls consistent with the Virginia ESC Handbook are present and maintained in good working order.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Exposed slopes/stream banks have been stabilized immediately upon completion of work in each impact area, in accordance with the Virginia ESC Handbook.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Heavy equipment is placed on mats/ geotextile fabric when working in temporary wetland impact areas. Equipment and materials removed immediately upon completion of work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Construction activities are not substantially disrupting the movement of aquatic life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
New instream pipes and culverts on <5% slope have been installed to maintain low flow conditions and are countersunk at both ends as follows: ≤ 24" diameter: countersunk 3" > 24" diameter: countersunk 6" or more. Any variations were approved in advance by DEQ.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Time-of-year restrictions are being adhered to.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

¹ If unauthorized impacts have occurred, you **must** email or fax a copy of this report to DEQ within 24 hours of discovery. Email: michael.mussomeli@deq.virginia.gov

ORDER NO.: K58 - CONTRACT ID. NO.: C0000107937C01

Monthly VWP Permit Inspection Checklist – Permit No.: WP3 23-4050

Date: _____

Page 2 of 2

PERMIT REQUIREMENT	In Compliance?			Location, Description, Notes & Corrective Action Taken (use additional note space below if needed)	Date Completed
	Yes	No	Not Applicable		
For stream channelization or relocation, work in surface waters is being performed in the dry, with all flows diverted until the new channel is stabilized.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Water quality monitoring is being conducted during permanent stream relocations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Streams and wetlands are free from any sheen or discoloration that may indicate a spill of oil, lubricants, concrete or other pollutants. ²	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Inspection Notes

² Any fish kills or spills of fuels or oils shall be reported to DEQ immediately upon discovery at 703-583-3800. If DEQ cannot be reached, the spill or fish kill shall be reported to the Virginia Department of Emergency Management (VDEM) at 1-800-468-8892 or the National Response Center (NRC) at 1-800-424-8802. Any spill of oil as defined in § 62.1-44.34:14 of the Code of Virginia that is less than 25 gallons and that reaches, or that is expected to reach, land only is not reportable, if recorded per § 62.1-44.34:19.2 of the Code of Virginia and if properly cleaned up.

ORDER NO.: K58 - CONTRACT ID. NO.: C0000107937C01
 Monthly Reporting of Impacts Up To 300 l.f. or Up To One-tenth Acre

05/01/2023 - 05/31/2023

Statewide

Permit #	Project Number	Residency	WQ Staff Initials	Project Description	Name of Waterbody	HUC	City/County	Topo Quad
23-4050	0286-029-259 B628, B630, B631, B632, C501, D605, P101, R201	Fairfax	JM	Widening of Route 286 from 4 to 6 lanes from Nomes Court to Route 29 to include intersection improvements and pedestrian and bicycle amenities.	Unnamed tributary to Little Rocky Run	02070010	Fairfax	FAIRFAX
	UT1 Little Rocky Run			Shown on Impact Plate 5, These impacts are needed in order to accommodate the widening of Fairfax County Parkway on the SB side. The existing pipe/outfall will need to be extended resulting in impacts W-2-1, S-3-1, and S-3-2.	Unnamed tributary to Little Rocky Run	02070010		
	UT1 Piney Branch			Outfall of existing Stormwater Facility 29010. Shown on Impact Plate 2, In order to extend the outfall to accommodate the conversion of an extended dry detention facility to a wet pond Impacts W-1-2 and W-1-1 will be required.	Unnamed tributary to Piney Branch	02070010		
	UT2 Piney Branch			Shown on Impact Plate 3, Concrete bottom R4 stream channel within existing stormwater facility #29011. Facility appears to have been originally built in-line containing an intermittent stream channel. Upstream of the facility an intermittent stream drains into a culvert carrying flow into the facility, and downstream of the outfall of the facility is another intermittent stream. The impact is needed due to the facility being converted from an extended dry detention facility to a wet pond.	Unnamed tributary to Piney Branch	02070010		
	UT3 Piney Branch			Intermittent stream below the outfall of existing extended detention basin structure #29012. Shown on Impact Plate 4, This extended dry detention facility is also being converted into a wet pond. In order to enlarge and convert the facility the outfall will need to be moved from it's current location. Impact S-2-1 is necessary due to the abandonment of the existing outfall. The permanent impact ceases at the connection to the forested wetland immediately below the facility that flows towards the intermittent stream channel from the north.	Unnamed tributary to Piney Branch	02070010		