

ORDER NO.: 348
CONTRACT ID. NO.: CM321PMB117191

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

CNSP (F) 1-9-06

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
BID PROPOSAL AND CONTRACT

ROUTE NUMBER: VARIOUS

FHWA NUMBER:: PM03(371)

PROJECT NUMBER: PM3B-015-F21, N501
PM3B-015-F21, N501

COUNTY: CAMPBELL

DISTRICT: LYNCHBURG



DESCRIPTION: 2021 PLANT MIX

LOCATION: VARIOUS

DATE BID SUBMITTED: 10:00 A.M. WEDNESDAY, FEBRUARY 24, 2021

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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: PM3B-963-F21, N501
PM3B-015-F21, N501

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

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

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

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

_____ Electronic Bid Bond ID#	_____ Company/Bidder Name	_____ Signature and Title
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**Attach copy of Power of Attorney

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Form C-48
Rev. 2-23-11

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

PROJECT NO.: PM3B-963-F21, N501
PM3B-015-F21, N501

CONTRACT ID. NO.: CM321PMB117191

FHWA NO: PM03(371)

DATE SUBMITTED _____

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

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

BIDDER _____ SIGNATURE _____

TITLE _____

SUBCONTRACTOR/SUPPLIER SOLICITATION AND UTILIZATION (ALL)

VENDOR NUMBER	NAME OF SUBCONTRACTOR/SUPPLIER	TELEPHONE NUMBER	DBE OR NON-DBE	UTILIZED (Y/N)

NOTE: ATTACH ADDITIONAL PAGES, IF NECESSARY.

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

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

TERMS OF THE PROPOSAL\CONTRACT
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
SUBMITTED: 10:00 A.M. WEDNESDAY, FEBRUARY 24, 2021

PROJECT NUMBER: PM3B-963-F21, N501
PM3B-015-F21, N501
ROUTE NUMBER: VARIOUS
FHWA NUMBER: PM03(371)
DESCRIPTION: 2021 PLANT MIX
LOCATION: VARIOUS

DISTRICT: LYNCHBURG

COUNTY: CAMPBELL

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

COMPLETION DATE: NOVEMBER 15, 2021

BID TOTAL \$ _____

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

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

Street Address

City

State

Zip Code

Vendor#/Fin#

Print Name

Signature

Title

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

Contract Execution Date _____

By _____

CHIEF ENGINEER
VIRGINIA DEPARTMENT OF TRANSPORTATION

Proposal ID: CM321PMB117191 Oversight/State Project No.: PM3B-963-F21, N501

Order No.: 348

Federal Project No.: PM03(371)

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	308	10103 AGGR. MATL. NO. 25 OR 26	2,086.880 TON	_____	_____	_____	_____
0020	310	10417 TACK COAT	18,995.000 GAL	_____	_____	_____	_____
0030	315	10700 RUMBLE STRIP CYLINDRICAL ASPHALT	6,230.000 LF	_____	_____	_____	_____
0040	315	10701 LIQUID ASPHALT RUMBLE STRIP COATING	875.000 SY	_____	_____	_____	_____
0050	ATTD	15309 PAVEMENT LIQUID ASPHALT COATING (PAVEMENT MARKER GROOVE)	708.000 SY	_____	_____	_____	_____
0060	315	16340 ASPHALT CONC. TY. SM-9.5D	9,649.700 TON	_____	_____	_____	_____
0070	315	16360 ASPHALT CONC. TY. SM-12.5E	7,980.540 TON	_____	_____	_____	_____
0080	515	16522 FLEXIBLE PAVEMENT PLANING 0" - 2"	179,579.720 SY	_____	_____	_____	_____
0090	ATTD	24262 PORTABLE TEMPORARY RUMBLE STRIP ARRAY	60.000 DAY	_____	_____	_____	_____
0100	ATTD	24265 MAINTENANCE OF TRAFFIC PLANT MIX	LUMP SUM	LUMP SUM	_____	_____	_____
0110	512	24282 FLAGGER SERVICE	480.000 HR	_____	_____	_____	_____
0120	704	54032 TYPE B CLASS I PVMT LINE MRKG 4"	49,177.000 LF	_____	_____	_____	_____

Proposal ID: CM321PMB117191 Oversight/State Project No.: PM3B-963-F21, N501

Order No.: 348

Federal Project No.: PM03(371)

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
0130	704	54034 TYPE B CLASS I PVMT LINE MRKG 6"	50,184.000 LF	_____	_____	_____	_____
0140	704	54048 TYPE B CLASS II PAVE. LINE MARKING 24"	1,377.000 LF	_____	_____	_____	_____
0150	704	54077 TYPE B CLASS VI PVMT LINE MRKG 8"	680.000 LF	_____	_____	_____	_____
0160	704	54078 TYPE B CLASS VI PVMT LINE MRKG 12"	1,910.000 LF	_____	_____	_____	_____
0170	ATTD	54100 PAVEMENT MARKING TYPE B, CLASS X2 PAVEMENT MARKING 6"	40,815.000 LF	_____	_____	_____	_____
0180	ATTD	54219 INLAID PAVEMENT MARKER ASPHALT	708.000 EA	_____	_____	_____	_____
0190	704	54399 PVMT MESSAGE MARK. R/R CROSSING TY B, CL II	1.000 EA	_____	_____	_____	_____
0200	512	54428 TEMP. PVMT MRKG, TY. A, 4"	45,337.000 LF	_____	_____	_____	_____
0210	512	54440 TEMP. PVMT MRKG, TY. A, 24"	199.000 LF	_____	_____	_____	_____
0220	512	54457 TEMP. PVMT SYMBOL MRKG SINGLE TURN ARROW TY. A	12.000 EA	_____	_____	_____	_____
0230	512	54459 TEMP. PVMT SYMBOL MRKG RAILROAD CROSSING TY. A	1.000 EA	_____	_____	_____	_____
0240	704	54575 PVMT SYMB MRKG SGL TURN ARROW TY B, CL II	12.000 EA	_____	_____	_____	_____

Total Bid: _____

Bid Items Eligible For Fuel Adjustment

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

SECTION: 0001

REGULAR BID ITEMS

Item Number	Item Description	Fuel Factor gal/unit	Option
10103	AGGR. MATL. NO. 25 OR 26	0.600	_____
10417	TACK COAT	0.016	_____
16340	ASPHALT CONC. TY. SM-9.5D	3.500	_____
16360	ASPHALT CONC. TY. SM-12.5E	3.500	_____
16522	FLEXIBLE PAVEMENT PLANING 0" - 2"	0.071	_____

Date: _____

Signature: _____

(Firm or Corporation)_____
(Vendor No.)

Determination of Major Items

Item Number	Item Description
16340	ASPHALT CONC. TY. SM-9.5D
16360	ASPHALT CONC. TY. SM-12.5E
16522	FLEXIBLE PAVEMENT PLANING 0" - 2"

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Form C-111
Rev. 2-15-11

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
MINIMUM DBE REQUIREMENTS

PROJECT NO: PM3B-963-F21, N501
PM3B-015-F21, N501

FHWA NO: PM03(371)

*****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 3%

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

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Form C-112
Rev. 3-1-11
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COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
CERTIFICATION OF BINDING AGREEMENT WITH
DISADVANTAGED BUSINESS ENTERPRISE FIRMS

Project No.: PM3B-963-F21, N501
PM3B-015-F21, N501

FHWA NO: PM03(371)

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: _____

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Second Tier
Subcontractor
If Applicable:

By: _____
Signature Title
Date: _____

Third Tier
Subcontractor
If Applicable

By: _____
Signature Title
Date: _____

DBE Contractor

By: _____
Signature Title
Date: _____

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[cn100-000026-05](#)

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 2016 and the Supplement thereto, dated 2019; 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* incorporated, dated September 1, 2019; 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.

11-22-19 (SPCN)

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[cn102-000510-00](#)

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

(g) Compliance with the Cargo Preference Act

As required by [46 CFR 381.7 \(a\)-\(b\)](#) "Use of United States-flag vessels, when materials or equipment are acquired for a specific highway project, the Contractor 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.
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 (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.
3. To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

This requirement will not be applicable when materials or equipment used on the Project are obtained from the existing inventories of suppliers and contractors; they are only applicable when the materials or equipment are acquired for the specific project, and have been transported by ocean vessel.

12-14-15; Reissued 7-12-16 (SPCN) [formerly cn102-050100-00](#)

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CONTRACT ID. NO.: CM321PMB117191

[cn104-000110-00](#)

SECTION 104.01—INTENT OF CONTRACT of the Specifications is replaced by the following:

The intent of the Contract is to provide for the completion of all work specified therein.

The Contractor shall base his bid on the cost of completing all work specified in the Contract.

Budgetary constraints as deemed necessary by the Department may be imposed at any time during the life of the Contract. This may affect the number of routes paved and thus the final quantity of work to be performed.

If prior to initiating or during the performance of the work, the Engineer determines that the cost of completion of all work specified in the Contract will exceed the limits of the budgeted funds, the Contractor will be notified immediately. With such notice the Engineer will specify which routes will be deleted according to the Department's predetermined listing of priorities.

If after routes are deleted and work proceeds, budgets revisions indicate that the cost of work to be completed by the Contractor will fall below the limits of the budgeted funds, the Department will determine which of the previously deleted routes will be returned to the Schedule to be completed at the contract unit price.

10-21-08; Reissued 7-12-16 (SPCN) [\[formerly cn104-010100-00\]](#)

[cn107-002110-01](#)

SECTION 107.21(d) CONSTRUCTION LOADING OF STRUCTURES of the Specifications is replaced with the following:

- (d) **Construction Loading of Structures:** In the course of planning and prosecuting the work for the asphalt maintenance schedules in the Contract, the Contractor shall consider the size and weight limitation of any existing structure(s) affecting the prosecuting the work in a schedule when contemplating construction loads, equipment access, haul and delivery routes of materials, and other related activities. If the size or weight limitation of an existing structure changes after the receipt of bid date for the Contract and remains so up to and including the actual prosecution of work for a schedule in the Contract, preventing or limiting access across the structure, and the Contractor determines this limitation impacts his operations; he shall notify the Engineer of such change. If the Engineer confirms such change has occurred, the change will be considered a change to the character of the work according to the provisions of [Section 104.02\(b\)](#) of the Specifications and is eligible for adjustments according to the provisions therein.

10-30-17 (SPCN) [\[formerly cn107-210100-01\]](#)

ORDER NO.: 348
CONTRACT ID. NO.: CM321PMB117191

[cn108-000110-00](#)

SECTION 108.01—PROSECUTION OF WORK is amended to add the following:

Once the Contractor has begun work on a given schedule or portion thereof he shall endeavor to prosecute such work fully and continuously according to the details and requirements of the Contract to its completion. In the event the Contractor has to temporarily suspend the work on a given schedule or portion thereof he shall notify the Engineer at least 24 hours in advance of the time and date he plans to pull off the work site. Prior to leaving the work site, the Contractor shall ensure the work site has been properly and safely secured to protect the traveling public according to the provisions of the *Virginia Work Area Protection Manual*, the *MUTCD*, Section 512 of the Specifications, and other requirements included in the Contract.

8-17-10; Reissued 7-12-16 (SPCN) [\[formerly cn108-010100-00\]](#)

[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.: 348
CONTRACT ID. NO.: CM321PMB117191

[cn512-000100-00](#)

TABLE V-1, ADT GROUPS — The Specifications are amended to include the following table:

TABLE V-1 Average Daily Traffic (ADT) Groups			
Traffic Group	ADT	Traffic Group	ADT
I	0-9	X	2,000-2,999
II	10-24	XI	3,000-3,999
III	25-49	XII	4,000-4,999
IV	50-99	XIII	5,000-5,999
V	100-249	XIV	6,000-9,999
VI	250-399	XV	10,000-14,999
VII	400-749	XVI	15,000-19,999
VIII	750-999	XVII	20,000-29,999
IX	1,000-1,999	XVIII	30,000-39,999
		XIX	40,000 & over

7-12-16 (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)

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.: 348
CONTRACT ID. NO.: CM321PMB117191

CONTRACTOR SEXUAL HARASSMENT POLICY – 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 above paragraph in every subcontract or purchase order over \$10,000, so that this requirement shall be binding upon each subcontractor or vendor.

6-5-20 (SPCN)

SECTION 108.02—LIMITATION OF OPERATIONS of the Specifications is amended to include the following:

(c) Railway right-of-way

The Contractor shall not perform work within 10 feet of Railway right-of-way until the Engineer notifies the Contractor in writing that a Right of Entry or Railroad Agreement between the Department and the CSXT, Buckingham Branch or Norfolk Southern for work within the temporary and permanent easements is executed. Performing work within 10 feet of Railway right-of-way will result in the Engineer suspending work in accordance with Section 105.03 of the Specifications. Such suspension of work will not be considered a valid reason for extending the contract time limit or for additional compensation.

9-10-18 (SPCN)

SEALING GROOVES FOR INLAID PAVEMENT MARKERS — The Contractor shall coat the entire groove area for Inlaid Pavement Markers with liquid asphalt coating (emulsion) conforming to Section 315.02(e) of the Specifications using a pressure distributor following the cutting and cleaning of the depressions of waste material. The approximate application rate shall be 0.1 gallons per square yard. The application temperature shall be between 160°F and 180°F.

The Contractor shall cover and protect the retroreflector during this operation. Any dirty or damaged retroreflectors or pavement markings that can't be cleaned by brushing them off shall be replaced. Waste material resulting from the operation shall be removed from the paved surface and shall not be disposed of where waterways may be at risk of contamination.

Liquid Asphalt Coating (Pavement Marker Groove) will be measured in square yards of groove and paid for at the Contract square yard price. This price shall include cleaning the groove prior to application of the coating and furnishing and applying coating as specified herein.

Payment will be made under:

Pay Item	Pay Unit
Liquid Asphalt Coating (Pavement Marker Groove)	Square yard

10-24-19 (SPCN)

ORDER NO.: 348
CONTRACT ID. NO.: CM321PMB117191

[SP0F0-000100-00](#)

Reissued July 12, 2016

PREDETERMINED MINIMUM WAGE RATES

"General Decision Number: VA20210108 01/01/2021

Superseded General Decision Number: VA20200108

State: Virginia

Construction Type: Highway

Counties: Campbell and Lynchburg* Counties in Virginia.

*including the independent city of Lynchburg

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: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.95 for calendar year 2021 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, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.95 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 calendar year 2021. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

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Modification Number	Publication Date
0	01/01/2021

* ELEC0080-011 06/01/2019

	Rates	Fringes
ELECTRICIAN, Includes Traffic Signalization.....	\$ 28.35	3%+19.95

 SUVA2016-044 07/02/2018

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 17.65	0.00
CEMENT MASON/CONCRETE FINISHER...	\$ 19.94	0.00
IRONWORKER, REINFORCING.....	\$ 22.71	0.00
IRONWORKER, STRUCTURAL.....	\$ 27.38	0.00
LABORER: Asphalt, Includes Raker, Shoveler, Spreader and Distributor.....	\$ 15.40	0.00
LABORER: Common or General.....	\$ 12.82	0.00
LABORER: Grade Checker.....	\$ 15.07	0.00
LABORER: Pipelayer.....	\$ 15.11	0.00
LABORER: Power Tool Operator....	\$ 15.69	0.00
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 18.53	0.00
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 19.16	4.45
OPERATOR: Broom/Sweeper.....	\$ 14.32	0.25
OPERATOR: Crane.....	\$ 25.82	0.00
OPERATOR: Drill.....	\$ 24.66	0.00

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OPERATOR: Gradall.....	\$ 18.65	0.00
OPERATOR: Grader/Blade.....	\$ 26.13	0.00
OPERATOR: Hydroseeder.....	\$ 16.64	0.00
OPERATOR: Loader.....	\$ 18.39	0.00
OPERATOR: Mechanic.....	\$ 20.60	0.00
OPERATOR: Milling Machine.....	\$ 23.12	3.60
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 17.50	2.54
OPERATOR: Piledriver.....	\$ 21.83	4.08
OPERATOR: Roller.....	\$ 14.47	2.28
OPERATOR: Screed.....	\$ 22.13	4.89
OPERATOR: Asphalt Spreader and Distributor.....	\$ 16.51	0.00
OPERATOR: Bulldozer, Including Utility.....	\$ 17.99	0.00
TRAFFIC CONTROL: Flagger.....	\$ 11.76	0.00
TRUCK DRIVER : HEAVY 7CY & UNDER.....	\$ 15.36	0.00
TRUCK DRIVER: Fuel and Lubricant Service.....	\$ 18.25	0.00
TRUCK DRIVER: HEAVY OVER 7 CY.....	\$ 16.60	0.00
TRUCK DRIVER: Single & Multi Axle.....	\$ 16.58	0.00

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

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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 www.dol.gov/whd/govcontracts.

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

A handwritten signature in black ink, appearing to read "E. Irving Manger", is written over a horizontal line.

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

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[SP0F0-000130-00](#)

May 1, 2012; Reissued July 12, 2016
FHWA-1273 (Electronic Version)

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

FHWA-1273 – Revised May 1, 2012

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Nonsegregated 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. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

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 (excluding emergency contracts solely intended for debris removal). The Contractor (or Subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

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

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

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the Contract by the Contractor's own organization and with the assistance of workers under the Contractor's immediate superintendence and to all work performed on the Contract by piecework, station work, or by subcontract.
3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the Contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.
4. Selection of Labor: During the performance of this contract, the Contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

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

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

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

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

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

1. **Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the Contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the Contractor agrees to comply with the following minimum specific requirement activities of EEO:
 - a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the Contract.
 - b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."
2. **EEO Officer:** The contractor will designate and make known to the Contracting Officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.
3. **Dissemination of Policy:** All members of the Contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the Contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:
 - a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the Contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.
 - b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the Contractor's EEO obligations within thirty days following their reporting for duty with the Contractor.
 - c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the Contractor's procedures for locating and hiring minorities and women.

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- 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.

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.

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.

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

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

- a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
- b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
- c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the Contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

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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. Actions by the Contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

- a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.
- b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.
- c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the Contractor, the Contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

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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, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the Contractor from the requirements of this paragraph. In the event the union referral practice prevents the Contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.
- 8. **Reasonable Accommodation for Applicants / Employees with Disabilities:** The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.
- 9. **Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.
 - a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.
 - b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.
- 10. **Assurance Required by 49 CFR 26.13(b):**
 - a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.
 - b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.
- 11. **Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the Contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.
 - a. The records kept by the Contractor shall document the following:
 - (1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

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- (2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and
 - (3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;
- b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the Contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the Contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. Davis-Bacon and Related Act Provisions

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

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

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1. Minimum wages

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

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

- b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the Contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:
- (I) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
 - (II) The classification is utilized in the area by the construction industry; and
 - (III) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

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- (2) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Contracting Officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the Contracting Officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.
 - (3) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the Contracting Officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contracting Officer shall refer the questions, including the views of all interested parties and the recommendation of the Contracting Officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.
 - (4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.
- c. Whenever the minimum wage rate prescribed in the Contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- d. If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

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2. Withholding

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

3. Payrolls and basic records

- a. Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

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- b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency.
- (2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the Contract and shall certify the following:
- (I) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;
 - (II) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the Contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;
 - (III) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the Contract.
- (3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.
- (4) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

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

4. Apprentices and trainees

- a. Apprentices (programs of the USDOL).

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

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

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

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

b. Trainees (programs of the USDOL).

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

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

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

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

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

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

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

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5. **Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.
6. **Subcontracts.** The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.
7. **Contract termination: debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the Contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.
8. **Compliance with Davis-Bacon and Related Act requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.
9. **Disputes concerning labor standards.** Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.
10. **Certification of eligibility.**
 - a. By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
 - b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
 - c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

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

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

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2. **Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph (1.) of this section, the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.
3. **Withholding for unpaid wages and liquidated damages.** The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.
4. **Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

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

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the Contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the Contractor's own organization (23 CFR 635.116).
 - a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:
 - (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
 - (2) the prime contractor remains responsible for the quality of the work of the leased employees;

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- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
 - (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.
 - b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the Contract as a whole and in general are to be limited to minor components of the overall contract.
- 2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the Contractor under the contract provisions.
- 3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the Contracting Officer determines is necessary to assure the performance of the Contract.
- 4. No portion of the Contract shall be sublet, assigned or otherwise disposed of except with the written consent of the Contracting Officer, or authorized representative, and such consent when given shall not be construed to relieve the Contractor of any responsibility for the fulfillment of the Contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.
- 5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

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

- 1. In the performance of this contract the Contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the Contracting Officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the Contract.
- 2. It is a condition of this contract, and shall be made a condition of each subcontract, which the Contractor enters into pursuant to this contract, that the Contractor and any subcontractor shall not permit any employee, in performance of the Contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

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

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

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

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

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

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

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

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

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

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

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

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

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2. That the Contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

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

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

1. Instructions for Certification – First Tier Participants:

- a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.
- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.
- c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.
- d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

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- f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
- g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.
- h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.
- i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

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

- a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:
 - (1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

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- (2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and
 - (4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

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)

- a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.
- b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
- c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.
- d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contractor). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

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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.
- f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.
- g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.
- h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

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

- 1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.
- 2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

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

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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.

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July 17, 2017

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

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

Females- 6.9%

Minorities - See Attachment "A"

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

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

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

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

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

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

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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:
- 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 complied 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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[SP102-000510-02](#)

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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SP107-000120-00

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

January 21, 2020

I. GENERAL REQUIREMENTS

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

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

II. SYSTEM REQUIREMENTS

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

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

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

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

The CRL website is located at:

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

III. PROCEDURES

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

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

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

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

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

2. DBE PAYMENT SUBMISSION REQUIREMENTS FOR FEDERALLY FUNDED PROJECTS

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

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

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

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

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[SP107-001510-02](#)

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.

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(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.

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.

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- e. A Contractor may count toward the DBE contract goal the following expenditures to DBE firms that are not regular dealers or manufacturers for DBE program purposes:
 - (1) The entire amount of fees or commissions charged by a DBE firm for providing a bona fide service, such as professional, technical, consultant or managerial services, 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.

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.

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		Value of Trans. Serv.
<u>Firm X</u>		(For Illustrative Purposes Only)
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.

- 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.

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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:

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.

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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 its completed and executed C-111, or C-112, when required by this Special Provision, the bidder's bid will be considered non-responsive and may be rejected. If, after reconsideration, the Department determines the bidder has failed to meet the requirements of the Contract goal and has failed to make adequate good faith efforts to achieve the level of DBE participation as specified in the bid proposal, the bidder's bid will be rejected. If sufficient documented evidence is presented to demonstrate that the apparent low bidder made reasonable good faith efforts, the Department will award the Contract and reduce the DBE requirement to the actual commitment identified by the lowest successful bidder at the time of its bid. The Contractor is encouraged to seek additional participation during the life of the Contract.

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

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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
ASPHALT MATERIAL PRICE ADJUSTMENT

September 6, 2019

All asphalt material contained in the attached master listing 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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VIRGINIA DEPARTMENT OF TRANSPORTATION
MASTER LISTING OF
ASPHALT MATERIAL ITEMS ELIGIBLE FOR PRICE ADJUSTMENT

ITEM	DESCRIPTION	UNITS	SPECIFICATION
10062	Asphalt-Stab. Open-Graded Material	Ton	313
10415	Prime Coat	Gal	311
10416	Liquid Asphalt	Gal	311 312
10417	Tack Coat	Gal	310
10418	Liquid Asphalt	Gal	314
10420	Blotted Seal Coat Ty. B	SY	ATTD
10422	Blotted Seal Coat Ty. C	SY	ATTD
10423	Blotted Seal Coat Ty. C-1	SY	ATTD
10424	Blotted Seal Coat Ty. D	SY	ATTD
10426	NS Blotted Seal Coat	SY	ATTD
10598	NS Asphalt Concrete	Ton	315
10603	Asphalt Concrete Ty. SM-19.0A	Ton	315
10604	Asphalt Concrete Ty. SM-19.0D	Ton	315
10605	Asphalt Concrete Ty. SM-19.0E (76-22 or 64E)	Ton	315
10606	Asphalt Concrete Ty. SM-9.5	Ton	315
10607	Asphalt Concrete Ty. SM-12.5A	Ton	315
10608	Asphalt Concrete Ty. SM-12.5D	Ton	315
10609	Asphalt Concrete Ty. SM-12.5E (64E-22)	Ton	315
10610	Asphalt Concrete Ty. IM-19.0A	Ton	315
10611	Asphalt Concrete Ty. IM-19.0D	Ton	315
10612	Asphalt Conc. Base Cr. Ty. BM-25.0	Ton	315
10613	Asphalt Concrete Ty. BM-37.5	Ton	315
10614	Asphalt Concrete Ty. IM-19.0E (76-22 or 64E)	Ton	315
10635	Asphalt Concrete Ty. SM-9.5A	Ton	315
10636	Asphalt Concrete Ty. SM-9.5D	Ton	315
10637	Asphalt Concrete Ty. SM-9.5E (64E-22)	Ton	315
10638	Asphalt Conc. Ty. BM-25.0D+0.8	Ton	ATTD
10639	Asphalt Concrete Ty. SM-19.0	Ton	315
10642	Asphalt Concrete Ty. BM-25.0A	Ton	315
10643	Asphalt Concrete Ty. BM-25.0D	Ton	315
10644	Asphalt Concrete Ty. SM-9.0A	Ton	315
10645	Asphalt Concrete Ty. SM-9.0D	Ton	315
10646	Asphalt Concrete Ty. SM-9.0E	Ton	315
10647	Asphalt Concrete Ty. SM-4.75A	Ton	315
10648	Asphalt Concrete Ty. SM-4.75D	Ton	315
10649	Asphalt Concrete Ty. SM-4.75E	Ton	315
10650	Stone Matrix Asphalt SMA-9.5(64H-22)	Ton	317
10651	Stone Matrix Asphalt SMA-9.5(64E-22)	Ton	317
10652	Stone Matrix Asphalt SMA-12.5(64H-22)	Ton	317
10653	Stone Matrix Asphalt SMA-12.5(64E-22)	Ton	317
10654	Stone Matrix Asphalt SMA-19.0(64H-22)	Ton	317
10655	Stone Matrix Asphalt SMA-19.0(64E-22)	Ton	317
10701	Liquid Asphalt Coating	SY	ATTD

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ITEM	DESCRIPTION	UNITS	SPECIFICATION
12505	Asphalt Concrete Curb Backup Material	Ton	315
13240	Asphalt Concrete Sidewalk	Ton	504
16110	Emul. Asph. Slurry Seal Type A	SY	ATTD
16120	Emul. Asph. Slurry Seal Type B	SY	ATTD
16130	Emul. Asph. Slurry Seal Type C	SY	ATTD
16144	Latex Mod. Emul. Treat. Type B	Ton	ATTD
16145	Latex Mod. Emul. Treat. Type C	Ton	ATTD
16146	Latex Mod. Emul. Treat. Rutfilling	Ton	ATTD
16161	Modified Single Seal	SY	ATTD
16162	Modified Double Seal	SY	ATTD
16249	Nontracking Tack Coat	Gal.	ATTD
16250	Liquid Asphalt Matl. CMS-2 (Mod)	Gal	ATTD
16251	Liquid Asphalt Matl. CMS-2	Gal	ATTD
16252	Liquid Asphalt Matl. CRS-2	Gal	ATTD
16253	Liquid Asphalt Matl. CRS-2H	Gal.	ATTD.
16254	Liquid Asphalt Matl. RC-250	Gal	ATTD
16256	Liquid Asphalt Matl. RC-800	Gal	ATTD
16257	NS Liquid Asphalt Matl.	Gal	ATTD
16260	Liquid Asphalt Matl. CRS-2L	Gal	ATTD
16301	Liq.Asph. Rumble Strip Coating	SY	315
16325	NS Asphalt Concrete	Ton	N/A
16326	Asphalt Concrete Ty. SM-4.75A	Ton	315
16327	Asphalt Concrete Ty. SM-4.75D	Ton	315
16328	Asphalt Concrete Ty. SM-4.75E	Ton	315
16330	Asphalt Concrete Ty. SM-9.0A	Ton	315
16331	Asph. Conc. Ty. SM-9.0D	Ton	315
16332	Asph. Conc. Ty. SM-9.0E	Ton	315
16335	Asphalt Concrete Ty. SM-9.5A	Ton	315
16337	Asph. Conc. Ty. SM-9.5ASL (Spot Level)	Ton	315
16340	Asphalt Concrete Ty. SM-9.5D	Ton	315
16342	Asph. Conc. Ty. SM-9.5DSL (Spot Level)	Ton	315
16345	Asphalt Concrete Ty. SM-9.5E (64E-22)	Ton	315
16350	Asphalt Concrete Ty. SM-12.5A	Ton	315
16352	Asph. Con. Ty. SM-12.5ASL (Spot Level)	Ton	315
16355	Asphalt Concrete Ty. SM-12.5D	Ton	315
16357	Asph. Con. Ty. SM-12.5DSL (Spot Level)	Ton	315
16360	Asphalt Concrete Ty. SM-12.5E (64E-22)	Ton	315
16362	Asphalt Concrete Ty. SM-19.0A	Ton	315
16363	Asphalt Concrete Ty. SM-19.0D	Ton	315
16364	Asphalt Concrete Ty. SM-19.0E (76-22 or 64E)	Ton	315
16365	Asphalt Concrete Ty. IM-19.0A	Ton	315
16366	Asph. Conc. Ty. BM-25.0D+0.4	Ton	ATTD
16367	Asph. Conc. TY. BM-25.0D+0.8	Ton	ATTD
16370	Asphalt Concrete Ty. IM-19.0D	Ton	315
16371	Asphalt Concrete Ty. IM-19.0E (76-22 or 64E)	Ton	315
16373	Asphalt Concrete Ty. IM-19.0A (T)	Ton	315
16374	Asphalt Concrete Ty. IM-19.0D (T)	Ton	315

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ITEM	DESCRIPTION	UNITS	SPECIFICATION
16377	Asphalt Concrete Ty. BM-37.5	Ton	315
16378	Thin Hot Mix Asphalt Concrete	Ton	ATTD
16379	Asphalt Concrete Ty. IM-19.0T	Ton	315
16383	Scratch/Level Type I	Ton	ATTD
16384	Scratch/Level Type II	Ton	ATTD
16390	Asphalt Concrete Ty. BM-25.0A	Ton	315
16392	Asphalt Concrete Ty. BM-25.0D	Ton	315
16393	Asph. Conc. Patch Ty. IM-19.0A	Ton	ATTD
16394	Asph. Conc. Patch Ty. IM-19.0D	Ton	ATTD
16395	Asphalt Concrete Ty. BM-25.0A (T)	Ton	315
16396	Asph. Conc. Ty. BM-25.0D+0.4 T	Ton	315
16397	Asphalt Concrete Ty. BM-25.0D (T)	Ton	315
16400	Stone Matrix Asphalt SMA-9.5(64H-22)	Ton	ATTD
16401	Stone Matrix Asphalt SMA-9.5(64E-22)	Ton	ATTD
16402	Stone Matrix Asphalt SMA-12.5(64H-22)	Ton	ATTD
16403	Stone Matrix Asphalt SMA-12.5(64E-22)	Ton	ATTD
16404	Stone Matrix Asphalt SMA-19.0(64H-22)	Ton	ATTD
16405	Stone Matrix Asphalt SMA-19.0(64E-22)	Ton	ATTD
16410	NS Asph. Conc. Ty. SM-	Ton	ATTD
16412	NS Asph. Conc. Ty. IM-	Ton	ATTD
16414	NS Asph. Conc. Ty. BM-	Ton	ATTD
16416	NS Asph. Conc. HP Ty.	Ton	ATTD
16420	Asph. Conc. Patch Ty. SM-12.5A	Ton	ATTD
16421	NS Asph. Conc. Patch Ty. SM-	Ton	ATTD
16422	NS Asph. Conc. Patch Ty. IM-	Ton	ATTD
16423	NS Asph. Conc. Patch Ty. BM-	Ton	ATTD
16490	Hot Mix Asphalt Treatment	Ton	ATTD
16500	Surf.Preparation & Restoration Type I	Ton	ATTD
16502	Surf.Preparation & Restoration Type II	Ton	ATTD
16504	Surf.Preparation & Restoration Type III	Ton	ATTD
16543	Cold Central Plant Recycling Material	Ton	ATTD
62195	NS Asphalt Concrete Overlay	Ton	315
62196	NS Asphalt Concrete	Ton	315
63000	NS Asphalt Concrete Overlay	Ton	315
63001	NS Asphalt Concrete	Ton	315
67201	NS Asphalt Concrete Overlay	Ton	315
67210	NS Asphalt Concrete	Ton	315
68240	NS Asphalt Concrete	Ton	315

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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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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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CONTRACT ID. NO.: CM321PMB117191

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

$$B = \$0.2816$$

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

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

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

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

20-Jan-05

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 credit to Department

ORDER NO.: 348
CONTRACT ID. NO.: CM321PMB117191

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.

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.

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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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[SP211-000100-02](#)

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
SECTION 211—ASPHALT CONCRETE

September 13, 2018

SECTION 211—ASPHALT CONCRETE of the Specifications is amended as follows:

Section 211.03(a) SUPERPAVE mixes is amended by inserting the following:

For SM-9.5 and SM-12.5 mixes, the minimum asphalt contents shall be based on the following unless otherwise approved by the Engineer:

Bulk Specific Gravity of the Total Aggregate	Minimum Design AC Content Mix Type (%)	
	SM-9.5	SM-12.5
Less Than 2.65	5.5	5.3
2.65 - 2.74	5.4	5.2
2.74 - 2.85	5.3	5.1
Greater Than 2.85	5.2	5.0

Section 211.03—Job-Mix Formula is amended to replace **TABLE II-14** with the following:

TABLE II-14
Mix Design Criteria

Mix Type	VTM (%) Production	VFA (%) Design	VFA (%) Production	Min. VMA (%)	Fines/Asphalt Ratio	No. of Gyrations N Design
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

¹Asphalt 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 asphalt content.

³Base mix shall be designed at 2.5% air voids. BM-25A shall have a minimum asphalt content of 4.4% unless otherwise approved by the Engineer. BM-25D shall have a minimum asphalt content of 4.6% unless otherwise approved by the Engineer.

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Section 211.08 – Acceptance is amended to replace the sixth paragraph with the following:

Asphalt content will be measured as extractable asphalt 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. 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 to replace the third paragraph with the following:

If the total adjustment for a lot is greater than 25 points, the Contractor shall remove the failing material from the road. If the total adjustment is 25 points or less and the Contractor does not elect to remove and replace the material, the unit price for the material will be reduced 3% of the unit price bid for each adjustment point the material is outside of the process tolerance. The Engineer will apply this adjustment to the tonnage represented by the samples. If the Engineer applies adjustment points against two successive lots, the Contractor shall ensure plant adjustment is made prior to continuing production.

Section 211.09—Adjustment System is amended to replace the last paragraph with the following:

The Engineer will reduce the unit bid price by 1.0 percent for each adjustment point applied for standard deviation.

The Engineer will increase the unit bid price for SM, IM, and BM mixes by 5% if the following criteria are met: 1) the standard deviation of the AC content is within the ranges of 0.0 – 0.15; 2) there are no adjustment points assigned for any sieve sizes as noted in Table II-16; and 3) the average AC content is no less than 0.10% below and no more than 0.20% above the approved mix design AC content.

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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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SP512-000120-03

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
SECTION 512—MAINTAINING TRAFFIC
(ASPHALT SCHEDULES)

October 15, 2020

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

Section 512.03(a) Temporary (Construction) Signs is amended to replace the ninth paragraph with the following:

When a portable sign stand is used to mount a temporary STOP (R1-1) sign, YIELD (R1-2) sign, EXIT OPEN (E5-2) sign, EXIT CLOSED (E5-2a) sign, EXIT (E5-V1) sign or TURN LANE (M4-V8L) sign, the sign shall be mounted at least 7 feet from the pavement surface to the bottom of the sign on. For long term stationary projects, these signs shall be post mounted.

Section 512.03(b) Flagger Service is amended to include the following:

The Contractor shall have no less than one flagger each at the beginning and ending of each work site. The Contractor shall also have flaggers at all roadway intersections within the work site, as required by the VWAPM. When the Engineer determines additional flaggers are necessary at the work site, the Contractor shall furnish them. On a divided highway the Engineer will instruct the Contractor where flaggers shall be stationed.

Radio communications shall be used between flaggers unless all flaggers have clear, unobstructed line of sight with each other at all times.

Section 512.03(d) Pilot Vehicles is amended to include the following:

Pilot vehicles shall be used on all roads where modified seal treatments, seal treatments using latex modified emulsified asphalt (CRS-2L) and other seal treatments on roads having more than 49 ADT are being placed, unless otherwise directed by the Engineer.

Radio communication shall be used between all pilot vehicles and flaggers.

Section 512.03(k)1 Type A or B Pavement Markings is replaced with the following:

Type A pavement markings (temporary paint) 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.

Type A-temporary paint, or Flexible Temporary Pavement Markers (FTPMS) used in lieu of Type A-temporary paint, shall be in accordance with the Special Provision for Pavement Markings and Markers included in the Contract.

Section 512.03(l) Eradicating Pavement Markings is amended to replace the first sentence of the second paragraph with the following:

The Contractor shall perform eradication by grinding, blasting, hydroblasting, or a combination thereof.

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Section 512.03(q) Type 3 Barricades is amended to add the following:

When closing sidewalks with Type 3 barricades, the barricades shall be wide enough to cover the width of the sidewalk.

Section 512.03(s) Portable Changeable Message Sign (PCMS) is amended to replace the fifth paragraph with the following:

During emergency situations the Contractor shall make every effort to deploy units it has assigned to the project. However, if the number of units shown on the plans are already in operation and cannot be reassigned to handle the emergency situation, the Contractor shall immediately contact the Engineer. The Engineer will then make a determination as to the most expeditious manner in which to deploy units for emergency use, whether by using Department supplied units, directing the Contractor to reassign those units he has committed to the project, or having the Contractor supply additional units as needed. In these circumstances, the cost for such additional units that are authorized by the Engineer shall be paid for according to Section 512.04 of this Special Provision.

Section 512.03(y) Temporary pedestrian accommodations is inserted as follows:

Temporary pedestrian accommodations: The Contractor shall close all pedestrian pathways that cross a milled or performance-planed surface in accordance with the VWAPM. The Contractor shall establish pedestrian detours where determined practical by the Engineer. Pedestrian pathways shall be re-opened when that segment of highway is opened to vehicles.

Section 512.04 Measurement and Payment is replaced with the following:

Maintenance of Traffic will be paid for at the lump sum price per schedule as designated in the Contract. Such traffic control shall include furnishing, erecting, installing or employing, and maintaining traffic control devices.

Payment for traffic control will be made incrementally as a percentage on the lump sum price based on the percentage of tonnage or square yards (as with slurry seal, latex emulsion, and surface treatment contracts) and placed on the schedule for the payment period covered by the appropriate progress estimate.

Additional traffic control layout detail items that are determined and authorized by the Engineer to be necessary to ensure the safety of the traveling public and are in addition to the number required by the traffic control layout details in the VWAPM and the Contract, will be measured and paid for as follows; therefore, the provisions of Section 104.02 of the Specifications will not apply:

- **Pilot vehicles** shall include vehicles, drivers, necessary warning devices, fuel and maintenance. Where additional pilot vehicles are required as determined and authorized by the Engineer, such vehicles will be measured in hours of actual use and will be paid for at the rate of **\$30** per hour of employed use.
- **Electronic arrows** shall include arrow boards, fuel, maintenance, and a truck or trailer having flashing vehicle warning lights. Where additional electronic arrows beyond those required by the VWAPM are determined to be necessary and authorized by the Engineer, electronic arrows will be measured in hours of actual use and will be paid for at the rate of **\$5** per hour for each hour of employed use.
- **Warning lights** for use on sign panels or installed on traffic barrier service will not be measured for separate payment. The cost thereof shall be included in the price for other appropriate pay items. This shall include maintaining, relocating, and removing warning lights as needed.

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- **Group 1 channelizing devices** will not be measured for separate payment. The cost thereof shall be included in the price for other appropriate pay items.
- **Group 2 channelizing devices** shall include furnishing and maintaining devices, removing devices when no longer required, and signs. Where additional Group 2 channelizing devices beyond those required by the VWAPM are determined to be necessary and authorized by the Engineer, those Group 2 channelizing devices will be measured in days and paid for at the rate of **\$1** per day per device. . When group 2 channelizing devices are moved to a new location or are removed and re-installed at the same location, the relocated devices will be measured for separate payment. However, when Group 2 channelizing devices are moved laterally within the lane or from one lane to another or from a shoulder into a lane by simply moving the devices across the lane edge line without removal from the roadway, no additional payment will be made.
- **Traffic barrier service** will not be measured for separate payment. The cost thereof shall be included in the price for other appropriate pay items. This shall include warning lights, delineators, barrier vertical panels, fixed object attachments, patching restraint holes, fixed object attachments used on traffic barrier service in locations where existing guardrail is in place including restoring existing guardrail to its original condition, maintaining, and removing traffic barrier service when no longer required.
- **Traffic barrier service guardrail terminal** will not be measured for separate payment. The cost thereof shall be included in the price for other appropriate pay items. This shall include furnishing, installing, moving to a new location as directed or approved by the Engineer, and removing when no longer needed.
- **Impact attenuator service** will not be measured for separate payment. The cost thereof shall be included in the price for other appropriate pay items. This shall include Impact attenuators used with barrier openings for equipment access.
- **Aggregate material** will not be measured for separate payment. The cost thereof shall be included in the price for other appropriate pay items. This shall include preparing the grade and furnishing, placing, maintaining, and removing material as required.
- **Type 3 barricades** will not be measured for separate payment. The cost thereof shall be included in the price for other appropriate pay items. This shall include barricades with retroreflective sheeting, sandbags, maintaining, relocating to new locations, and removing the type 3 barricades when no longer required.
- **Pedestrian barricade devices** will not be measured for separate payment. The cost thereof shall be included in the price for other appropriate pay items. This shall include maintaining, sand bag ballast, relocating to new locations, and removing when no longer required.
- **Temporary (construction) signs** shall include furnishing, installing, maintaining, covering, uncovering, relocating, and removing the following: temporary signs, temporary sign panels, sign panel bracing, sign supports, hardware, delineators, and flags.

When additional temporary signs beyond those required by the VWAPM are determined to be necessary and authorized by the Engineer, the additional signs will be paid for at **\$20** per square foot..

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- **Truck mounted attenuators** shall include the truck mounted attenuator, mounting vehicle, warning lights, vehicle-mounted signs, electronic arrow boards used in lieu of vehicle warning lights,, and maintenance. Electronic arrow boards required on truck-mounted attenuator support vehicles in moving or mobile operations will be measured and paid for separately.

When truck-mounted attenuators beyond those required by the Contract are determined to be necessary and authorized by the Engineer, these will be measured in hours of actual use required, and will be paid for at the rate of **\$22** per employed hour. When electronic arrows are required and authorized as determined by the Engineer and not incidentally mounted (and permitted) on such truck mounted attenuator support vehicles, they will be paid for separately as specified herein.

- **Portable Changeable Message Signs (PCMS)**, not designated in the Contract as a separate pay item but where additional Portable Changeable Message Signs are required as determined and authorized by the Engineer, these will be measured in hours of actual use and paid for at the rate of **\$15** per hour for each hour of employed use. This price shall include mobilizing the units to the project, maintenance, operation, and repositioning the units.

Flagger Service will be measured in hours of operations, per flagger, as required by Section 512.03(b) and authorized or approved by the Engineer, and will be paid for at the Contract hour price. This price shall include paddles, safety equipment, and required communication gear.

Automatic Flagger Assistance Devices (AFADs) may be used instead of Flagger Service when approved by the Engineer, at no additional cost to the Department. This price shall include furnishing or mobilizing the AFAD to the project, services of the trained AFAD operators, channelizing devices, safety equipment, fuel, necessary warning devices, maintenance, and removal. Separate payment for the certified flagger operating the AFAD will not be made.

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.

Eradication of existing pavement markings will be measured in linear feet of a 6-inch width or portion thereof as specified herein. Widths that exceed a 6-inch increment by more than 1/2 inch will be measured as the next 6-inch increment. Measurement and payment for eradication of existing pavement markings specified herein shall be limited to linear pavement line markings. Eradication of existing pavement markings will be paid for at the contract unit price per linear foot. This price shall include removing linear pavement line markings, cleanup, and disposing of residue.

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 marking as defined in Standard PM-10 of the *VDOT Road and Bridge Standards*. Nonlinear pavement markings shall include but not be limited to stop lines, 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.

Basic Work Zone Traffic Control – Separate payment will not be made for providing a person to meet the requirements of Section 105.14 of the Specifications. The cost thereof shall be included in the price of other appropriate pay items.

Intermediate Work Zone Traffic Control - Separate payment will not be made for providing a person to meet the requirements of Section 105.14 of the Specifications. The cost thereof shall be included in the price of other appropriate pay items.

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Temporary (construction) pavement markings, including FTPMs used in substitution of temporary pavement markings, will be measured and paid for in accordance with the Special Provision for Pavement Markings and Markers .

Payment will be made under:

Pay Item	Pay Unit
Flagger Service	Hours
Maintenance of Traffic (Schedule)	Lump Sum
Eradication of existing pavement marking	Linear foot
Eradication of existing nonlinear pavement marking	Square foot
Portable Temporary Rumble Strips	Day

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SP704-000100-04

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
SECTION 704 – PAVEMENT MARKINGS AND MARKERS

August 31, 2020

SECTION 704 – PAVEMENT MARKINGS AND MARKERS of the Specifications is amended as follows:

Section 704.02(e) – Flexible Temporary Pavement Markers (FTPMs) is inserted as follows:

Flexible Temporary Pavement Markers (FTPM's) shall conform to Section 235. All FTPM's shall be new product. FTPM's are suitable for use up to one year after the date of manufacture when stored in accordance with the manufacturer's recommendations.

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.

FTPM's shall consist of products from the Department's Approved List 22. FTPM's shall include a removable material covering the reflective lens to protect the lens from being obscured or damaged during the paving operation.

Section 704.03 – Procedures is amended by replacing the second through fourth paragraphs 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; however, a Pavement Marking Technician is not required for FTPM installation.

The Contractor shall provide staking in the field that documents any changes in passing zones on undivided roads, exact placement of all aerial speed enforcement markings, and placement of railroad crossing markings. Any changes to these markings that are specified in the Contract shall be staked. The Contractor shall complete all staking and notify the Engineer at least 14 days before the scheduled start of resurfacing operations.

The Contractor shall reference this staking when installing temporary markings, and for the premarking to be done in advance of permanent marking installation. The stakes shall be removed at the conclusion of the project.

All existing markings shall be replaced with permanent markings of the same width, color, size, and location unless otherwise directed in the PM Series Standard Drawings, in the Contract, or by the Engineer. All replacement markers shall have the same retroreflector colors (front and back) as existing markers unless otherwise directed in the Contract or by the Engineer.

The Contractor shall sweep clear all surface-treated, slurry seal, and latex emulsion roadways before installation of permanent pavement markings. Any loose aggregate remaining on the surface shall be blown-out with an air compressor or other approved method.

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Section 704.03(a)2e – Patterned Preformed Tape (Type B, Class VI) is amended to insert the following:

When Type B, Class VI markings are being applied on Latex Emulsion or other Surface Treatment surfaces, the Contractor shall select a product from the Department's Approved List 17 which is warranted by the manufacturer against failure resulting from improper installation and material defects when used on that type of surface, and a low-VOC surface preparation primer adhesive shall be applied prior to application of the Type B, Class VI markings.

The Contractor shall install Type B, Class VI markings on existing asphalt concrete roadway surfaces, hydraulic cement concrete surfaces, and existing or new surface treatment, slurry seal, and latex emulsion surfaces in accordance with the manufacturer's installation instructions for pavement surface preparation, sweeping, and installation techniques for non-embedded (adhesive) surface applications and splicing.

Before tape installation on new latex emulsion surfaces:

- The surface shall be swept clear of all loose aggregate immediately before spraying the surface preparation primer adhesive.
- The primer adhesive shall be sprayed uniformly at the correct thickness (shall not exceed the maximum thickness specified by the manufacturer), and cured in accordance with the manufacturer's installation instructions.

After application of the surface preparation primer adhesive, the tape shall be tamped to the road using a 200 pound minimum tamper cart and vehicle wheels. The Contractor shall ensure that the vehicle tires, if used, ride true down the length of the tape marking and in accordance with manufacturer instructions.

Section 704.03(d) – Pavement Markers is amended to insert the following:

Permanent markers shall not be installed until after the installation of the corresponding permanent line marking unless approved by the Engineer. If permanent markers are installed before installation of the corresponding permanent marking, then the Contractor shall ensure that the retroreflector is not damaged or obscured during the subsequent line marking installation.

The Contractor may choose to substitute FTPMs in lieu of Type A-temporary paint or in lieu of Type D temporary pavement markings. The Contractor's plan for FTPMs shall be in accordance with the Typical Plan for FTPM Placement drawings included herein.

When FTPMs are used to simulate temporary edgelines, then FTPMs shall be spaced every 20 feet and shall match the color of the line markings being simulated.

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.

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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 simulated segment. No two consecutive FTPMs may be damaged or missing on a simulated solid line application, and no more than 30 percent 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.

Section 704.03(d) – Pavement Markers is amended to insert the following:

All Inlaid Pavement Markers on plant mix surfaces shall be installed within 30 Days after the end of the last workday (final surface) of continuous paving on that section of roadway.

All Inlaid Pavement Markers on surface treatment, slurry seal, or latex emulsion surfaces shall be installed within 14 calendar days after the final markings are installed, unless a time extension is approved by the Engineer. Time extensions will be granted when weather conditions prohibit installation or other operations on the project would damage the markers. The time limit commences for a continuous section at the end of the last workday that the final surface is placed. For roads with more than two lanes, each direction will be considered a separate continuous section.

Section 704.03(f) – Maximum Allowable Time Limits for Unmarked Roads is inserted as follows:

Maximum Allowable Time Limits for Unmarked Roads

Existing markings that are obscured, covered, or eradicated by resurfacing operations (including existing symbol and message markings where the need for temporary symbol or message markings has been identified in the Contract) shall be replaced with either temporary or permanent markings within the time limits established in Table VII-4, unless otherwise approved by the Engineer.

If the Contractor begins the next lift within the time limits specified in Table VII-4 for a non-final surface, then the time limits shall be recalculated as starting at the end of the work day from the time of that next resurfacing operation.

The Engineer may allow the extension of the time limits by up to 12 hours for 10,000 ADT or greater roads, up to 24 hours for 9,999 to 3000 ADT roads, and up to 48 hours for less than 3000 ADT roads, provided that all of the following apply:

- The road is non-limited access.
- The road has a posted or statutory speed limit of 40 mph or below.
- All lanes are delineated by the milled surface or asphalt overlay.

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- The road is on tangent alignment.
- “Unmarked Pavement Ahead” or “No Center Line” warning signs were properly installed in accordance with the VWAPM when the unmarked lane was opened to traffic.

For final surfaces, the Contractor shall determine if the permanent markings can be installed within these time limits, based on the installation requirements for that permanent marking material on that type of surface, and the weather conditions. If the permanent markings will not be installed within these time limits, then temporary markings shall be installed.

Temporary markings are not required on roads that are unmarked in the permanent condition.

Table VII-4 – Time Limits for Unmarked Roads is inserted as follows:

<p style="text-align: center;">Table VII-4 Time Limits for Unmarked Roads</p>	
Road Type	Maximum allowable duration for unmarked roads
Interstates and other freeways (limited access roads) posted at 55 MPH or greater (including interstate/freeway ramps) ¹	<p>All lane line markings, at a minimum, shall be temporarily or permanently installed before opening the lane to traffic. If the latex emulsion surface has not cured enough to hold the temporary markings (weathered-in texture), then the Contractor shall apply the temporary paint before opening the lane to traffic and then, if necessary and when directed by the Engineer, shall refresh the temporary markings within 24 hours at VDOT expense.</p> <p>All other markings shall be temporarily or permanently installed within 24 hours after the end of the workday when the corresponding existing markings were obscured, removed, or eradicated.</p>
Non-freeway roads with ADT of 10,000 or greater (Traffic Groups XV and above) ^{2,3,4}	All lane line and center line markings shall be temporarily or permanently installed within 24 hours after the end of the workday when the corresponding existing markings were obscured, removed, or eradicated. Application of temporary markings on surface treatment, slurry seal and latex emulsion shall be as soon as the surface has cured enough to hold the temporary markings.
Non-freeway roads with ADT between 3,000 and 9,999 (Traffic Groups XI through XIV) ²	All lane line and center line markings shall be temporarily or permanently installed within 48 hours after the end of the workday when the corresponding existing markings were obscured, removed, or eradicated.
Non-freeway roads with ADT between 600 and 2,999 (Traffic Groups VII - X) ^{5,6}	All lane line and center line markings shall be temporarily or permanently installed within 72 hours after the end of the workday when the corresponding existing markings were obscured, removed, or eradicated.
Non-freeway roads with ADT less than 600 (Traffic Groups I – VII)	Temporary markings are not required if all “Unmarked Pavement Ahead” or “No Center Line” warning signs were properly installed as per the VWAPM when the unmarked road was first opened to traffic.

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¹For the purposes of this Special Provision, freeways shall be defined as any fully limited-access, divided roadway with two or more travel lanes in each direction and 55 mph or greater speed limit.

²If an approach to a signalized intersection has (a) two or more approach through lanes, (b) 45 mph or greater speed limit, (c) greater than 3000 ADT, and (d) all markings on the approach are obliterated, then all lane lines and centerlines within 250 feet of the location of the stop line location shall be temporarily or permanently marked within 24 hours of opening the approach to traffic, unless a time extension is approved by the Engineer and "Unmarked Pavement Ahead" or "No Center Line" warning signs were properly installed as per the VWAPM when the unmarked approach was first opened to traffic.

³If the Contract Documents require temporary symbol/message markings or temporary edge line markings, those markings shall be temporarily or permanently marked within 72 hours after the end of the workday when the corresponding existing markings were obscured, removed, or eradicated on non-freeway roads with 10,000 or greater ADT, and 96 hours on less than 10,000 ADT non-freeway roads, unless the Engineer approves a time extension.

⁴If the next resurfacing operation will obliterate the temporary markings within approximately 24 hours, the Engineer may approve an extension of time for temporary marking installation if the posted/statutory limit is less than 45 mph, and all "Unmarked Pavement Ahead" or "No Center Line" warning signs were properly installed as per the VWAPM when the unmarked approach was first opened to traffic.

⁵On surface treatment roads with ADT between 1000 and 2999, if it is anticipated that the surface treatment will not be sufficiently cured to permit temporary paint installation within 72 hours, then the Engineer may direct the Contractor to either use yellow FTPMs to simulate the centerline, or to apply temporary pavement markings within 72 hours and then, if the Engineer determines it necessary, refresh those temporary pavement markings with a second application of Type A temporary paint at VDOT's expense.

⁶On curved portions of surface treatment roads with ADT between 600 and 999, if it is anticipated that the surface treatment will not be sufficiently cured to permit temporary paint installation within 72 hours, then the Engineer may direct the Contractor to use either yellow FTPMs to simulate the centerline on the curves, or to apply temporary pavement markings within 72 hours on the new surface and then, if the Engineer determines it necessary, refresh those temporary pavement markings with a second application of Type A temporary paint at VDOT's expense. Temporary markings may be omitted on tangent sections of roadway if all "Unmarked Pavement Ahead" or "No Center Line" signs were properly installed as per the VWAPM when the unmarked road was first opened to traffic, and if approved by the Engineer.

Section 704.03(g) – Temporary Pavement Markings is inserted as follows:

Temporary Pavement Markings

Premarking, dotting or layout marking shall not be used as a substitute for temporary pavement marking.

Temporary linear, symbol, and message pavement markings specified in the Contract shall be installed at the same locations that the permanent pavement markings are to be installed, unless otherwise approved by the Engineer.

Type D-removable tape shall be installed and removed in accordance with manufacturer's installation instructions.

Type A temporary paint shall be installed in accordance with the manufacturer's installation instructions and as detailed in the following table:

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	Milled Surface	Intermediate Lifts or Final Surface¹
Thickness	15 mils when wet	8 to 10 mils when wet
Glass Bead Application Rate	6 lbs. of glass beads per gallon of material	3 lbs. of glass beads per gallon of material for 8 to 10 mils and 6 lbs. per gallon for 11 to 15 mils
Long Line Width	Same width as the permanent markings	75% of the permanent marking width
Skip Line Pattern	10-foot line segments / 30-foot gaps (approx.)	8-foot line segments / 32-foot gaps (approx.)

¹Type A paint at approximately 15 mils thickness with 6 lbs/gal of glass beads will be permitted for temporary line markings, if the Type A is worn down to no more than 10 mils thickness before permanent marking installation. The Contractor shall assess how long the temporary lane line, center-line and edge line temporary markings will be in service and may increase the thickness based upon the duration and expected wear.

Temporary Type A pavement markings on final surfaces shall be arranged and spaced so that they will be completely covered by the subsequent installation of permanent pavement markings atop those temporary paint markings.

The following Temporary markings location and placement types shall comply with the following:

- Skip and solid lane line markings shall be required at all locations unless otherwise directed in the Contract.
- Centerline markings shall be required at all locations unless otherwise directed in the Contract. Temporary passing zone changes shall be at the same location as the permanent marking passing zone change locations.
- Edgelines shall only be required where specified in the Contract, subject to the surface reaching a condition to support the markings and the equipment. Temporary edgelines are not required when the shoulder surface is in a milled condition.
- Temporary stop lines, when required by the Contract, shall be 12 inches wide unless otherwise directed.
- Temporary crosswalks, when required by the Contract, shall be two parallel 6-inch white lines unless otherwise directed.

Temporary lane lines, centerlines, and edge lines may be marked with Type D removable tape, Type A-temporary paint, or FTPMs. All temporary symbol and message markings and other types of temporary markings may be marked with Type D-removable tape or Type A-temporary paint.

The moisture test in VTM 94 is not required for temporary pavement marking. However, if the VTM 94 moisture test is not performed, the Contractor shall document the approximate surface wetness on the Form C-85.

If the surface is visibly dry (does not have puddling or free-standing water present), the Contractor is responsible for installing and maintaining the temporary pavement markings. If the Contractor opts not to perform VTM 94 and the temporary markings applied to a visibly dry surface do not sufficiently adhere to the surface, temporary pavement markings shall be reapplied at no additional cost to the Department.

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If the surface has puddling or free-standing water present, or if a VTM 94 moisture test result indicates that the condition of the surface is not suitable for temporary pavement marking application, the Engineer may direct the Contractor to install temporary pavement markings on the surface in order to avoid having traffic operate on an unmarked road. In such circumstances the Department may direct the Contractor to install one subsequent reapplication of the temporary markings once the surface has dried, if the previous installation did not satisfactorily adhere to the road. In such circumstances the Contractor will be compensated at the Contract bid price for those temporary markings.

In order to quicken the paint drying process, the Contractor may spray an Engineer-approved drying agent into the traffic paint during installation in accordance with the manufacturer's installation instructions, at no additional cost to the Department.

While in place, temporary pavement markings shall be maintained at adequate visibility and retroreflectivity, as defined in Section 512, until the permanent markings are installed. No additional application (refreshing) is required as long as the temporary markings continue to meet these requirements.

If Type D-removable tape fails the visual evaluation or is deficient in any other respect before the installation of permanent markings, the tape shall be removed and new temporary markings shall be applied at no additional cost to the Department.

If Type A temporary paint does not meet the requirements of Section 512 before the installation of permanent markings, such temporary markings shall be refreshed by the application of a lighter application (applied so as to enhance visibility but not as to require eradication before application of permanent markings) of Type A-temporary markings at the Contractor's expense.

Permanent pavement markings shall not be installed atop Type A temporary markings if the paint is not fully dry or if the paint exceeds the maximum specified thickness in Table VII-3. If the temporary paint is not located directly underneath the location where the permanent markings are to be installed, they shall be 100% eradicated in accordance with Section 512 before installation of permanent markings at no additional cost to the Department.

Section 704.03(h) – Time Limits for Permanent Pavement Marking Application is inserted as follows:

Time Limits for Permanent Pavement Marking Application

All permanent linear, message, and symbol markings on Interstate and Limited Access Roadways posted at 55 MPH or greater, all other roadways with 10,000 ADT or greater with a posted or statutory speed limit of 45 mph or greater, shall be placed within the following time limits:

1. For Plant Mix operations:
 - a. All Type B Class VI markings shall be inlaid the same day as the final surface is placed as specified herein.
 - b. All other permanent markings shall be completed within 30 days after the end of the last workday of continuous paving on that section of roadway.
2. For Slurry Seal, Latex Emulsion, and Surface Treatment operations:
 - a. Type B, Class VI markings shall be installed at least 14 days after the end of the last workday of continuous paving on that section of road. Type B, Class VI markings shall not be installed until the texture is weathered-in on the edges and the temporary paint (if present) is worn down to 10 mils or less.

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- b. All permanent markings shall be completed within 30 days after the end of the last workday of continuous paving on that section of roadway.

On all other roadways (non-interstate and non-limited access roads with less than 10,000 ADT, or posted or statutory speed less than 45 MPH), all permanent linear and message/symbol markings shall be installed within 30 days on plant mix surfaces and between 30 and 45 days on surface treatment, slurry seal, and latex emulsion surfaces, after the end of the last workday of continuous paving on that section of roadway.

Permanent markings shall not be installed where pavement curing time or weather conditions prohibit installation, or where the pavement surface does not meet the markings manufacturer's requirements (e.g. the aggregate is not worn-in at the edges).

Any necessary refreshing or replacement of temporary pavement markings or FTPMs will not affect the allowable time limit for completion of permanent pavement marking installation.

Section 704.04 – Measurement and Payment is amended to replace the first paragraph with the following:

Pavement line markings will be measured in feet and paid for at the Contract foot price for the type, class and width specified. This price shall include furnishing and installing the pavement marking material, surface preparation, premarking, documentation and staking of existing markings, quality control tests, daily log, guarding devices, primer, adhesive, glass beads, and manufacturer's warranty.

Section 704.04 – Measurement and Payment is amended to add the following:

Temporary pavement line markings will be measured in feet and paid for at the Contract foot price for the type, class, and width specified. This price shall include furnishing, installing, and maintaining the pavement marking materials; surface preparation, inspections, testing, daily log, and guarding devices; providing primer, adhesive, glass beads, and drying agents; and disposal, and removing removable markings when no longer required.

If temporary line markings require refreshing, reapplication, or replacement before the final surface or the permanent markings are installed, all cost for refreshing, reapplication, or replacement shall be at the Contractor's expense, unless the Contractor was directed by the Engineer to apply the temporary markings to a visibly wet surface or to an insufficiently cured latex emulsion, slurry seal, or surface treatment surface.

If the Contractor uses FTPMs in lieu of Type A-temporary paint to simulate a longitudinal line marking as allowed herein, the Contractor will be paid at the foot pay unit for the length of simulated line marking at the Type A-temporary paint unit price. That measurement shall represent all FTPMs required for that simulated line marking. This cost shall include furnishing, installing and maintaining the FTPMs, removable covers, surface preparation, quality control tests, daily log, guarding devices, removal, and disposal.

Temporary pavement message (word) markings will be measured in units of each and paid for at the Contract each price for the character size, type, and class specified. This price shall include furnishing, installing, and maintaining the pavement marking materials; surface preparation, inspections, testing, daily log, and guarding devices; providing primer or adhesive, glass beads, and drying agents; and disposal, and removing removable markings when no longer required.

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Temporary pavement symbol markings will be measured in units of each and paid for at the Contract each price for the size, type, and class specified. This price shall include furnishing, installing, and maintaining the pavement marking materials; surface preparation, inspections, testing, daily log, and guarding devices; providing primer or adhesive, glass beads, and drying agents; and disposal, and removing removable markings when no longer required.

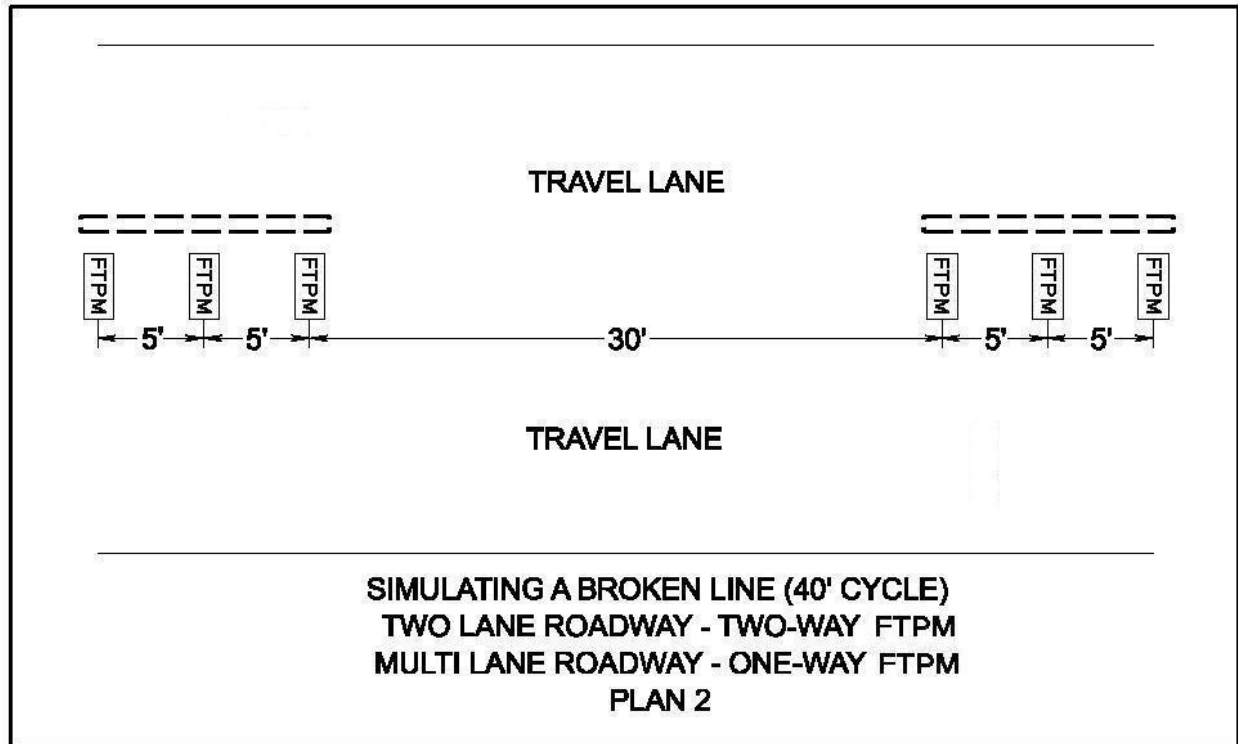
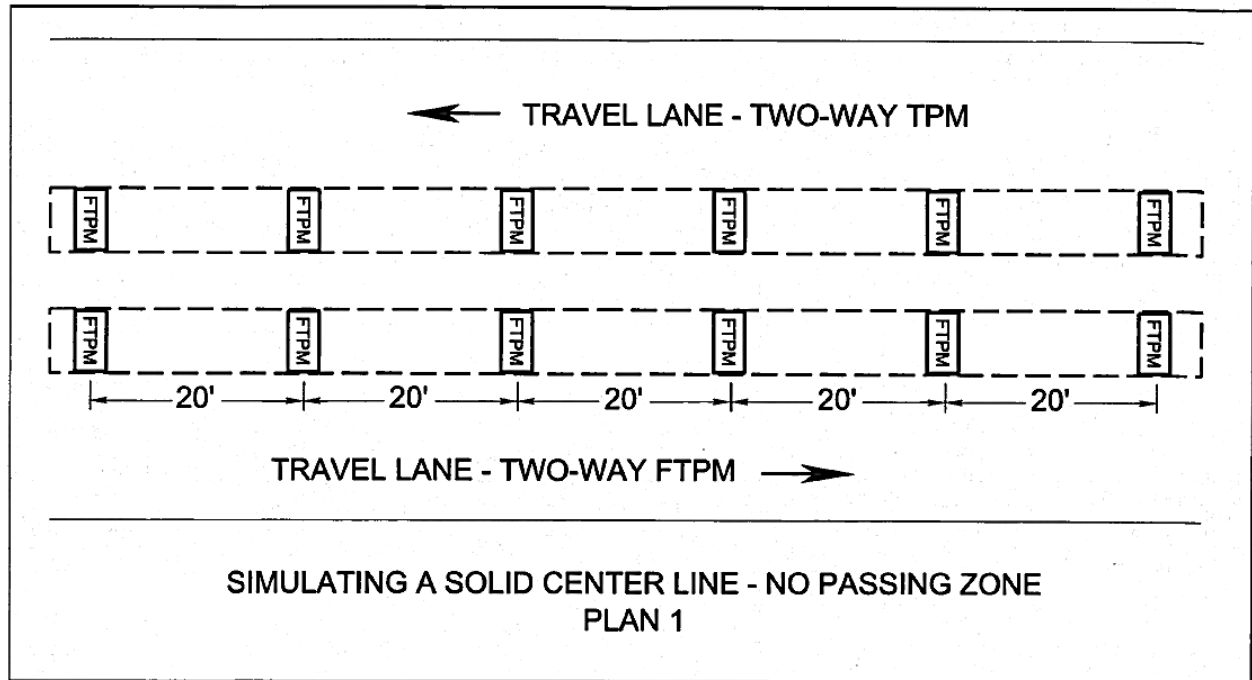
If temporary pavement line, message, or symbol markings require refreshing, reapplication, or replacement before the final surface or the permanent markings are installed, all cost for refreshing, reapplication, or replacement (including Maintenance of Traffic costs) shall be at the Contractor's expense unless the Contractor was directed by the Engineer to apply the temporary markings to a visibly wet surface or to an insufficiently cured latex emulsion, slurry seal, or surface treatment surface.

Payment will be made under:

Pay Item	Pay Unit
(Type or class) Temporary pavement line marking (width)	Linear foot
Temporary pavement message (word) marking (size character, type or class material)	Each
Temporary pavement symbol marking (Symbol, Type or class material)	Each

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TYPICAL PLAN FOR FTPM PLACEMENT



ORDER NO.: 348
CONTRACT ID. NO.: CM321PMB117191

[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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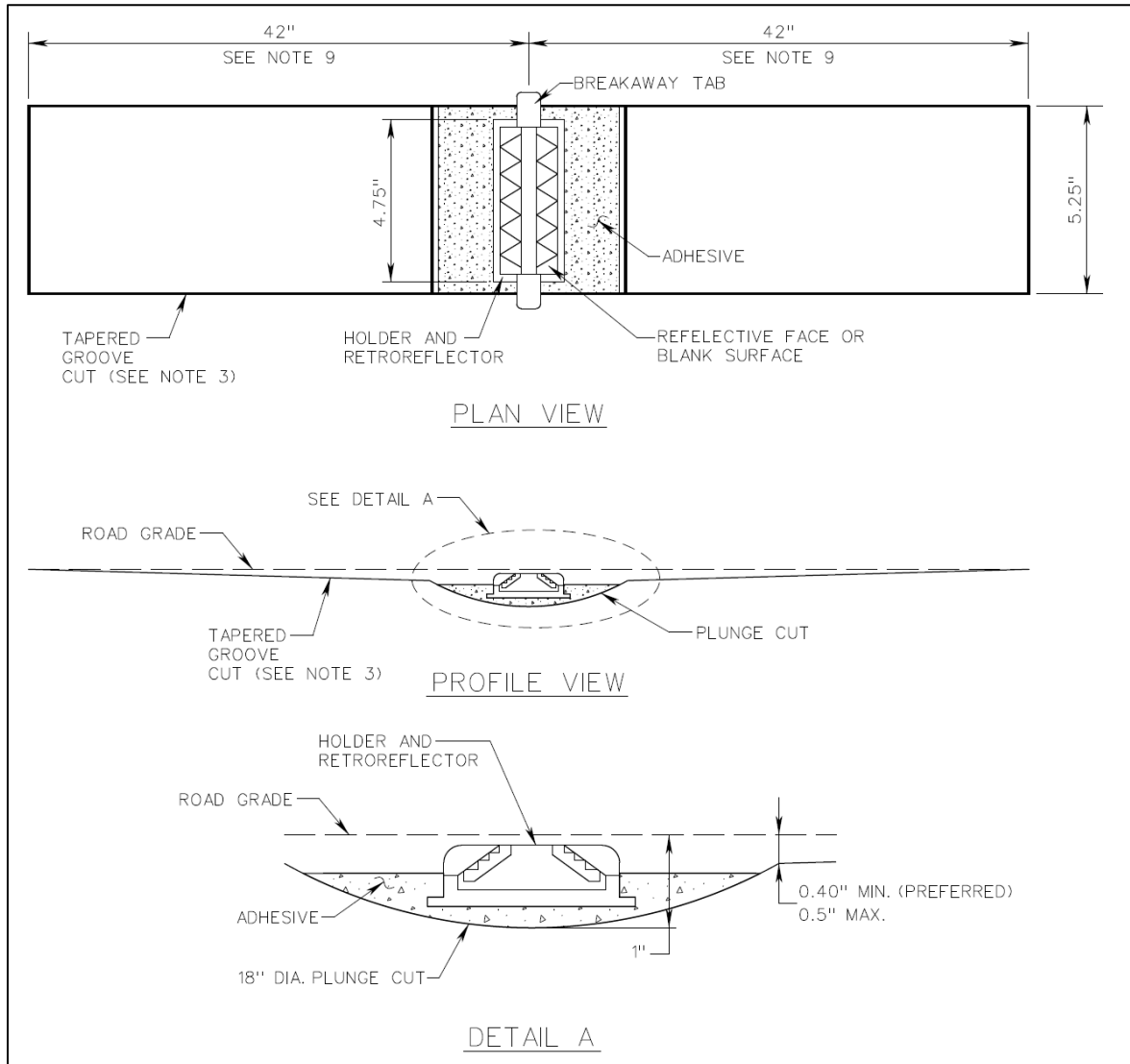


Figure 1: Installation of Inlaid Pavement Marker

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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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
PUBLIC NOTIFICATION OF PARKING RESTRICTIONS
(Plant Mix)

August 18, 2015; Reissued July 12, 2016_

The Contractor shall be responsible for notifying the public of parking restrictions due to the resurfacing operations scheduled in this contract by distributing door-hangers and erecting "No Parking" signs throughout the subdivision streets affected as follows:

- A template for printing door-hangers will be provided to the Contractor by the Department. The Contractor shall make all necessary arrangements to furnish and distribute the printed door-hangers to homes no more than thirty (30) days prior to commencement of work and no less than three (3) days in the affected areas.
- A template for furnishing "No Parking" signs will be provided to the Contractor by the Department. The Contractor shall make all necessary arrangements for furnishing and placing the "No Parking" signs, including posts, for affected homes no more than three (3) working days prior to commencement of work. "No Parking" Signs shall be placed a minimum of 36" off the ground and shall clearly be visible to the public. The Contractor shall install the sign posts using posts of their choosing so long as the "No Parking" Sign is securely mounted and does not result in warping of the sign. The Contractor shall notify the appropriate police department after signs are installed and prior to commencement of work. If the commencement of work date follows a holiday or weekend, the three (3) working day prior notification requirement shall be in addition to the weekend or holiday. The period of operations, as designated on the "No Parking" signs, shall not exceed fourteen (14) consecutive calendar days.

The Contractor shall visually inspect the construction site each day after the placement of "No Parking" signs to ensure they are still in place. Any damaged or missing signs shall be promptly replaced at the Contractors expense.

All "No Parking" signs shall be removed and disposed of by the Contractor upon completion of the work.

The cost of furnishing and distributing door-hangers, furnishing, installing, maintaining, and removing "No Parking" signs and posts shall be borne by the Contractor at no cost to the Department. Door Hangers and No Parking Signs shall be produced in color and laminated prior to distribution.

Template examples can be found on the following three (3) pages.

To obtain "color" template copies for production visit the following link:

<http://www.viriniadot.org/business/resources/const/PublicNotificationOfParkingRestrictionsTemplates.pdf>



Door Hanger (Front)

Asphalt

Within the next 30 days, you will see construction crews and equipment preparing to treat and improve the roads in your neighborhood. This work is **dependent on weather** and may occur later than this timeframe due to contractor schedules.

WHAT YOU NEED TO KNOW

Crews will be paving your streets with asphalt. This application will improve the ride for motorists, and enhance the condition of your street.

WHAT TO EXPECT

Residents will see construction workers and equipment in your neighborhood.

Stay alert for temporary lane closures.

HOW TO PREPARE

When work begins, please avoid parking your vehicles on the street. Construction crews will place “No Parking” signs on the affected streets a minimum of 3 business days before work begins, notifying residents of the specific days parking will be prohibited. Please remove other obstructions from the road, such as basketball hoops or garbage cans.

RESOURCES

For more information about this process, please visit www.virginiadot.org/asphalt.

To contact us, call VDOT’s Customer Service Center at 1-800-FOR-ROAD (800-367-7623) or email customerservice@VDOT.Virginia.Gov.

*Scan this QR code using a
smartphone to view VDOT
information on asphalt.*



Door Hanger (Back)

NO PARKING

STREET PAVING

DATES: _____ --- _____



FOR INFORMATION CALL: **1-800-FOR-ROAD**

CARS TOWED

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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
PAVEMENT MARKINGS AND MARKERS
(Data Logger System)

September 25, 2020

I. DESCRIPTION

This work shall consist of maintaining a daily log, Form [C-85](#), to record project and Contractor identification; project location; material installation time, date and location; environmental conditions; material composition; and material application rates for both temporary and permanent pavement markings and markers.

II. PROCEDURES

The Contractor shall maintain a daily log, Form [C-85](#), for both temporary and permanent pavement markings and markers. The C-85 form shall not be modified. All log entries shall be in electronic or legible ink format. The log shall be signed by the Contractor and delivered to the Engineer by the end of each workday. If the C-85 is in electronic format, then a printed copy, signed by the Contractor, shall be delivered to the Engineer at the end of each workday.

The Contractor shall use either of the following two methods to perform quality control (QC) testing for application thickness and glass bead rate for liquid temporary and permanent linear markings. However, the VTM 94 QC testing shall be used for all liquid linear markings that are installed by push cart.

1. **VTM 94 quality control testing:** The "Quality Control Measurements" portion of the Form C-85 shall be filled out for all markings using the VTM 94 QC testing method, and the C-85 shall be kept current throughout the day. The Contractor shall perform QC testing for application thickness and glass bead rate in accordance with VTM 94 at the beginning of each workday and every 3 hours thereafter. The Contractor shall provide the equipment needed to perform the QC testing in accordance with VTM 94. QC testing using VTM 94 shall be performed in the presence of the Inspector and shall be documented on Form C-85, immediately after testing is completed. If directed by the Engineer, the Contractor shall provide a QC test plate and the provision of the test plate shall be documented on the Form C-85. The Contractor shall also provide a printed or electronic copy of the signed Form C-85 to the District Materials Engineer for materials notebook evaluation.
2. **Data Logger System (DLS) quality control testing:** Before beginning pavement marking operations, the Contractor shall provide the DLS manufacturer's instructions for equipment calibration and operation. Each DLS shall have an annual calibration of all mechanical and electrical components and its software function and output confirmed by the DLS manufacturer or their designated representative. Evidence of the annual calibration shall be carried by a signed and dated stamp or seal affixed to the inside of the driver's door of each striper.

The Contractor shall submit electronic records from the DLS each day for all linear markings for which the Contractor is providing QC testing using this method. The record shall be produced in its final format directly from the DLS, before the records are removed from the DLS. The records shall be formatted to be read by Microsoft Excel (*.xlsx) and shall be electronically provided to the Engineer via email or USB flash drive.

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The DLS report shall include the following:

- Project number
- Route number and direction
- Contractor name
- GPS coordinates for the truck's position during the application of the corresponding line, to an accuracy of within 10 feet
- Date and time for start and end of application
- Line information – color (white or yellow), pattern (skip, double, dotted, etc.), and location (i.e. left edge)
- Vehicle speed, to an accuracy of +/- 0.1 mph
- Weight or volume of binder material, with separate data entries for each 0.1 mph increment
- Weight of glass beads
- Pavement temperature (°F), surface temperature (°F), dew point (°F), air temperature (°F), and humidity (%).
- Calculate and provide average application thickness and bead application rate for each 0.1 mile increment

If the equipment critical to the DLS fails or is observed to be reporting incorrect measurements, the Contractor shall switch to using the VTM 94 QC testing method.

III. MEASUREMENT AND PAYMENT

Data Logger System (DLS) shall be included in the price bid for pavement markings and markers.

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[SS101-002020-01](#)

March 24, 2020

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 101 – DEFINITIONS OF ABBREVIATIONS, ACRONYMS, AND TERMS

SECTION 101 – DEFINITIONS OF ABBREVIATIONS, ACRONYMS, AND TERMS of the Specifications is amended as follows:

Section 101.01 – Abbreviations and Acronyms is amended to include the following:

ATSSA	American Traffic Safety Service Association
ITS	Intelligent Transportation Systems
MASH	Manual for Assessing Safety Hardware
NFPA	National Fire Protection Association
NTPEP	National Transportation Product Evaluation Program
VAC	Virginia Administrative Code, when referencing a legal code

Section 101.01 – Abbreviations and Acronyms is amended to replace the following abbreviations:

VAC Volts Alternating Current when used to define an amount of electrical potential.

Section 101.02 – Terms is amended by inserting the below terms and definitions:

Internet. The electronic communications network that connects computer networks and organizational computer facilities around the world.

Match-Cure. A process where concrete test specimens are cured at the same temperature as the product by monitoring the concrete temperature in both the product and the test specimens and applying heat to the test specimens to match the temperature of the concrete.

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SS105-002020-01

August 13, 2019

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 105 – CONTROL OF WORK

SECTION 105 – CONTROL OF WORK of the Specifications is amended as follows:

Section 105.10(b) – Plans is replaced with the following:

Plans will be furnished to the Contractor electronically without charge.

Plan revisions issued while the project is under construction will be furnished to the Contractor electronically.

The Contractor shall keep one complete set of plans, standard drawings, Contract assemblies, and Specifications available on the project at all times. For maintenance projects, certain sign projects, and other projects having no field office or on which the Contractor has no office, the Contractor shall keep one complete set of plans, Contract assemblies, and Specifications with him while prosecuting the Work. In the event items of Work are required as per the Standard Drawings, the Contractor shall also keep the appropriate Standard Drawings on the project during the performance of that work.

Plans consisting of general drawings and showing such details as are necessary to give a comprehensive understanding of the work specified will be furnished by the Department. Except as otherwise shown on the plans, dimensions shown on the Plans are measured in the respective horizontal or vertical planes. Dimensions that are affected by gradients or vertical curvatures shall be adjusted as necessary by the Contractor to accommodate actual field conditions and shall be specifically denoted as "field adjusted" on the Working Drawings. Failure on the part of the Contractor to so denote field adjustments on the Working Drawings shall not relieve the Contractor of the responsibility to accommodate and incorporate such existing conditions into the finished work.

Section 105.14(a)3 – Flagging Traffic is replaced with the following:

Flagging Traffic: Flaggers shall be able to communicate to the traveling public in English while performing the job duty as a flagger at the flagger station.

Certification for flaggers will be awarded upon a candidate's satisfactory completion of an examination. Proof of certification shall be carried by flaggers while performing flagging duties. Flaggers found not to be in possession of their certification card shall be removed from the flagging site and operations requiring flagging will be suspended by the Engineer until a certified flagger is on-site to perform flagging duties in accordance with the requirements herein. Flaggers performing duties improperly will have their certifications revoked.

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SS200-002020-02

January 27, 2020

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 200 – GENERAL

SECTION 200 – GENERAL of the Specifications is amended as follows:

Section 200.04 – Acceptance Procedures for Aggregates is amended to replace the fourth paragraph with the following:

The No. 10 sieve shall be the dividing sieve for soils, select material, aggregate subbase material, and aggregate base material. The No. 8 sieve shall be the dividing sieve for asphalt concrete aggregates. That portion of the total aggregate retained on the sieves is defined as coarse aggregate, and that portion passing the sieves is defined as fine aggregate. Soundness tests will be performed according to the requirements of AASHTO T 104 without regard to these definitions of fine and coarse aggregate. Fine and coarse aggregates for hydraulic cement concrete are distinguishable by their conformity to the series of grading requirements specified in Sections 202 and 203, respectively, except that lightweight aggregate is specified in Section 206.

Section 200.06 – Technician and Batchers Certification is amended to replace the first paragraph with the following:

When the Contract requires a type of technician or batcher defined by this Section, the Contractor shall use a person certified by the Department. The Department will certify technicians and batchers upon a candidate's satisfactory completion of an examination.

Section 200.06(m) – Soils and Aggregate Compaction Technician is inserted as follows:

Soils and Aggregate Compaction Technician: A Soils and Aggregate Compaction Technician conducts density, moisture content, and depth checks of soil placement and aggregate lifts during construction, including stabilized lifts. The Technician also monitors application rates of stabilizing chemicals used in soil and aggregate lifts in the field.

Section 200.06(n) – Cold Asphalt Recycling – Plant Technician is inserted as follows:

Cold Asphalt Recycling – Plant Technician samples Cold In-place Recycling (CIR) or Cold Central Plant Recycling (CCPR) material during production and is capable of conducting any tests necessary to put the CIR equipment and CCPR plant into operation.

Section 200.06(o) – Cold Asphalt Recycling – Field Technician is inserted as follows:

Cold Asphalt Recycling – Field Technician provides quality control testing and inspection of the placement of CIR and CCPR materials.

Section 200.06(p) – Full Depth Reclamation (FDR) Technician is inserted as follows:

Full Depth Reclamation (FDR) Technician provides quality control testing, inspection of the placement of FDR, samples FDR material during production, and is capable of conducting any tests necessary to put the FDR equipment into operation.

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SS202-002020-01

September 23, 2019

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 202 – FINE AGGREGATE

SECTION 202 – FINE AGGREGATE of the Specifications is revised as follows:

Section 202.02 – Materials is amended by inserting the following:

Lightweight aggregate can also be used as a fine aggregate and shall conform to Section 206.

Section 202.03(e) – Deleterious Material is replaced with the following:

Deleterious Material: The amount of deleterious material in sands shall be not more than the following:

Material	% by Weight	AASHTO Test Method
Clay lumps	0.25	T 112
Shale, mica, coated grains, soft or flaky particles	1.0	T 113
Organic material	0	T 21
Total material passing No. 200 sieve by washing ^{1,2}		T 11 and T 27
For use in concrete subject to abrasion	3	
For other concrete	5	

¹In the case of stone sand, if the material passing the No. 200 sieve is dust of fracture, essentially free from clay and shale, the percentages shown for use in concrete subject to abrasion and in other concrete may be increased to 5% and 7%, respectively.

²In the case of blends of stone sand and natural sand, provided the natural sand contains no greater than 3% passing the No. 200 sieve for use in concrete subject to abrasion and no greater than 5% for other concrete, then the stone sand limits of 5% and 7% shall apply to the blend.

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SS204-002020-01

February 22, 2019

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 204 – STONE FOR MASONRY, RIPRAP, POROUS BACKFILL, AND GABIONS

SECTION 204 – STONE FOR MASONRY, RIPRAP, POROUS BACKFILL, AND GABIONS of the Specifications is amended as follows:

Section 204.02(c) – Porous backfill is replaced with the following:

Porous backfill shall be No. 78 or 8 aggregate, at least Grade B. Crushed glass meeting the gradation requirements specified in Section 203.02(d) may be directly substituted for No. 78 and 8 aggregates. Lightweight aggregate conforming to Section 206 for coarse aggregate and meeting the 3/4-inch or 1/2-inch grading in AASHTO M 195 may be directly substituted for No. 78 and 8 aggregates.

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SS206-002020-01

September 23, 2019

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 206 – LIGHTWEIGHT AGGREGATE

SECTION 206 – LIGHTWEIGHT AGGREGATE is replaced by the following:

206.01 – Description

These specifications cover lightweight aggregate used in the production of hydraulic cement concrete, internally cured concrete using pre-wetted lightweight aggregate, and asphalt surface treatment.

206.02 – Detail Requirements

Lightweight aggregate shall consist of clay, shale, or slate expanded through a sintering or rotary kiln.

The requirements for normal weight aggregate and concrete shall apply to lightweight concrete when a reduced density is specified or when internally-cured concrete (where a portion of the fine aggregate is replaced with pre-wetted lightweight fine aggregate) is specified, except for the following:

- (a) **Lightweight aggregate used in hydraulic cement concrete** shall conform to AASHTO M 195 and the following requirements.
1. **Grading:** Gradation for fine and coarse aggregates shall conform to AASHTO M 195. Tests to verify conformance shall be performed in accordance with AASHTO T 27.
 2. **Soundness:** Soundness for fine aggregate shall conform to the freeze and thaw requirements of Table II-2. Soundness for coarse aggregate shall conform to the freeze and thaw requirements of Table II-4. Soundness shall be tested in accordance with AASHTO T 103.
 3. **Void Content:** Void content requirements for fine aggregate shall not apply to lightweight aggregate.
 4. **Deleterious Material:** The amount of deleterious material in fine aggregate shall conform to Section 202 for stone sand. The amount of deleterious material in coarse aggregate shall conform to Section 203.
 5. **Abrasion Loss:** Abrasion loss for coarse aggregate shall conform to the Grade A requirements in Table II-5.
 6. **Flat and Elongated Particles:** Coarse aggregate shall conform to Section 203.
- (b) **Lightweight aggregate used for asphalt surface treatment** shall conform to AASHTO M 195 except that Sections 3, 6, and 8 will not apply. Grading shall conform to Table II-3 except that the maximum percentage by weight of material passing the No. 8 sieve shall be 16% and passing the No. 16 sieve shall be 9%.

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SS210-002020-01

May 19, 2020

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATION
SECTION 210 – ASPHALT MATERIALS

SECTION 210 – ASPHALT MATERIALS of the Specifications is amended as follows:

Section 210.04(e) – Thin Hot Mix Asphalt Concrete Overlay tack coat is inserted as follows:

Thin Hot Mix Asphalt Concrete Overlay tack coat shall conform to the following:

Test on Emulsion	Method	Min	Max
Viscosity at 77° F, SSF	AASHTO T 59	20	100
Sieve Test ¹ , %	AASHTO T 59	—	0.05
24 hour storage stability ² , %	AASHTO T 59	—	1
Residue from distillation at 400° F ³ , %	AASHTO T 59	63	
Oil portion from distillation ml of oil per 100g emulsion			2
Demulsibility, % 35 ml 0.02 N CaCl ₂ or 35 ml 0.8% dioctyl sodium sulfosuccinate	AASHTO T 59	60	

¹The sieve test is waived if successful application of the material has been achieved in the field.

²After standing undisturbed for 24 hours, the surface shall show no white, milky colored substance, but shall be a smooth homogeneous color throughout.

³AASHTO T59 with modifications to include a 400° F ±10° F maximum temperature to be held for a period of 15 minutes.

Test on Residue From Distillation	Method	Min	Max
Elastic Recovery ¹ , %	AASHTO T 301	60	—
Penetration @ 77° F, 100 g, 5 sec. dmm.	AASHTO T 49	60	150

¹With exception that the elongation is 20 cm and the test temperature is 50° F.

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SS211-002020-01

August 20, 2020

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

²Minimum Asphalt Performance Grade (PG) is defined as the minimum binder performance grade for the job mixes as determined by AASHTO T170 or AASHTO M332.

³Nominal 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 (AC) mix type designated.

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

TABLE II-12A Aggregate Properties					
Mix Type	Coarse Aggregate Properties			Fine Aggregate Properties	
	CAA		ASTM D4791 F & E (5:1) % by weight	SE	FAA
	1 fractured face	2 fractured faces			
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.

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

TABLE II-14
Mix Design Criteria

Mix Type	VTM (%) Production	VFA (%) Design	VFA (%) Production	Min. VMA (%)	Fines/Asphalt Ratio	No. of Gyrations N Design
SM4.75A ^{2,4}	3.0-6.0	70-75	70-80	16.5	1.0-2.0	50
SM4.75D ^{2,4}	3.0-6.0	70-75	70-80	16.5	1.0-2.0	50
SM4.75E ^{2,4}	3.0-6.0	70-75	70-80	16.5	1.0-2.0	50
SM-9.0A ^{1,2}	2.0-5.0	75-80	70-85	17.0	0.6-1.3	50
SM-9.0D ^{1,2}	2.0-5.0	75-80	70-85	17.0	0.6-1.3	50
SM-9.0E ^{1,2}	2.0-5.0	75-80	70-85	17.0	0.6-1.3	50
SM-9.5A ^{1,2}	2.0-5.0	75-80	70-85	16.0	0.7-1.3	50
SM-9.5D ^{1,2}	2.0-5.0	75-80	70-85	16.0	0.7-1.3	50
SM-9.5E ^{1,2}	2.0-5.0	75-80	70-85	16.0	0.7-1.3	50
SM-12.5A ^{1,2}	2.0-5.0	73-79	68-84	15.0	0.7-1.3	50
SM-12.5D ^{1,2}	2.0-5.0	73-79	68-84	15.0	0.7-1.3	50
SM-12.5E ^{1,2}	2.0-5.0	73-79	68-84	15.0	0.7-1.3	50
IM-19.0A ^{1,2}	2.0-5.0	69-76	64-83	14.0	0.6-1.3	50
IM-19.0D ^{1,2}	2.0-5.0	69-76	64-83	14.0	0.6-1.3	50
IM-19.0E ^{1,2}	2.0-5.0	69-76	64-83	14.0	0.6-1.3	50
BM-25.0A ^{2,3}	1.0-4.0	67-87	67-92	13.0	0.6-1.3	50
BM-25.0D ^{2,3}	1.0-4.0	67-87	67-92	13.0	0.6-1.3	50

¹Asphalt 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 asphalt content.

³Base mix shall be designed at 2.5% air voids. BM-25A shall have a minimum asphalt content of 4.4% unless otherwise approved by the Engineer. BM-25D shall have a minimum asphalt content of 4.6% unless otherwise approved by the Engineer.

⁴Asphalt content shall be selected at 5.0 percent air voids.

Section 211.03(d)8 – For surface mixes is replaced with the following:

For surface mixes, permeability test data shall be submitted in accordance with VTM 120 using either single point verification or the regression method for each surface mix having a different gradation. The specimen height shall be one inch for SM-4.75 mix types. If the average of the permeability results from the single point verification method exceeds 150×10^{-5} cm/sec, or if the regression method predicts a permeability exceeding 150×10^{-5} cm/sec at 7.5% voids, the Contractor shall redesign the mixture to produce a permeability number less than 150×10^{-5} cm/sec.

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Section 211.04(a) – Types SM-9.0A, SM-9.0D, SM-9.0E, SM-9.5A, SM-9.5D, SM-9.5E, SM-12.5A, SM-12.5D, and SM-12.5E asphalt concrete is renamed **Types SM-4.75A, SM-4.75D, SM-4.75E, SM-9.0A, SM-9.0D, SM-9.0E, SM-9.5A, SM-9.5D, SM-9.5E, SM-12.5A, SM-12.5D, and SM-12.5E asphalt concrete** and replaced with the following:

Types SM-4.75A, SM-4.75D, SM-4.75E, SM-9.0A, SM-9.0D, SM-9.0E, SM-9.5A, SM-9.5D, SM-9.5E, SM-12.5A, SM-12.5D, and SM-12.5E asphalt concrete shall consist of crushed stone, crushed slag, or crushed gravel and fine aggregate; slag or stone screenings; or a combination thereof combined with asphalt cement. 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, SM9.0, 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:

<p style="text-align: center;">TABLE II-15 Process Tolerance</p>													
<p style="text-align: center;">Tolerance on Each Laboratory Sieve and Asphalt Content: Percent Plus and Minus</p>													
No. Tests	Top Size¹	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 211.09 – 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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September 27, 2019

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 217 – HYDRAULIC CEMENT CONCRETE

SECTION 217 – HYDRAULIC CEMENT CONCRETE of the Specifications is amended as follows:

Section 217.02(c) – Fine aggregate is replaced with the following:

Fine aggregate shall conform to Section 202 for Grading A or Section 206.

Section 217.02(d) – Coarse aggregate is replaced with the following:

Coarse aggregate shall conform to Sections 203 or 206 for the class of concrete being produced.

Section 217.02(m) – Lightweight aggregate is inserted as follows:

Lightweight aggregate shall conform to Section 206.

Section 217.07 – Proportioning Concrete Mixes is replaced with the following:

The Contractor is responsible for having a certified Concrete Plant Technician available during batching operations, and a certified Concrete Field Technician present during placing operations.

The Contractor shall have at least one certified Concrete Field Technician on the project for single or multiple incidental concrete placements. The Contractor shall have at least one certified Concrete Field Technician present at each site during the placement of pavements, bridge decks, bridge piers and abutments, box culverts, and any placement of 50 or more cubic yards.

The certified Concrete Field Technician shall provide control over methods used for discharging, conveying, spreading, consolidating, screeding, finishing, texturing, curing, and protecting the concrete. Deficiencies in conformance to specification requirements and good concreting practices shall be corrected by or under the direction of the certified Concrete Field Technician as soon as they begin to occur.

The concrete producer shall plan batching operations so that delays do not occur because of the absence of certified personnel.

Concrete shall be proportioned to secure the strength and durability required for the pavement or the part of the structure in which it will be used.

The Contractor shall submit concrete mixture designs conforming to the Specifications for the class of concrete specified for the Engineer's approval prior to the start of concrete mixing operations.

The Contractor shall furnish and incorporate a water-reducing and retarding admixture in bridge deck concrete and in other concrete when conditions are such that the initial set may occur prior to completion of approved finishing operations. The two admixtures shall not be used together in the same concrete batch unless tests indicate the admixtures are compatible in accordance with Section 215.02(b). If the Engineer elects to waive the requirement to have both admixtures, the Contractor may supply and incorporate only a water-reducing admixture, in lieu of having both the water-reducing and retarding admixtures normally required in the bridge deck concrete, to provide the required slump without exceeding the maximum water/cement ratio. The Contractor shall demonstrate to the Engineer that use of the admixture will not cause segregation.

Concrete shall be air entrained. The air content shall conform to Table II-17.

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Except for latex hydraulic cement concrete, concrete mixtures shall be developed and verified by any one of the following three options listed below.

The mix designs as determined by the respective option below shall be valid provided there is no change in sources of aggregate, chemical admixtures, mineral admixtures, or hydraulic cement. All concrete mixtures shall contain the minimum amount of mineral admixtures or combination thereof expressed as a percent of the total cementitious materials in accordance with Section 217.02(a). All quantities of materials shall be weighed in accordance with tolerances specified in Section 217.04. The quantities of coarse and fine aggregates used in concrete production shall not deviate by more than $\pm 5\%$ by weight from the batch weights of the approved mix design.

When low permeability concrete is specified, two 4 X 8 inch specimens shall be molded from concrete representing the proposed mix design and tested in accordance with VTM 112 to validate conformance. For trial batches, the tested permeability value shall be considered satisfactory provided it is 500 coulombs less than the specified maximum value for the class of concrete specified.

(a) Option 1 – Prescriptive Method:

Mix proportions for normal, heavy weight, and lightweight concrete shall be established by the methods described in ACI 211 on an absolute volume basis for the respective aggregate size. The mix design shall conform to Table II-17 or other parts of the Contract for the class and type of concrete indicated. Aggregate properties obtained from the aggregate producer shall be used for design purposes.

Once the proposed mix design has been established, the Contractor or their concrete supplier shall produce one 3-cubic yard production verification batch using the same type of equipment intended for use in supplying concrete to the Department. The proposed mix design will be considered acceptable provided that the plastic properties of the concrete are within the Department's specification limits for the given class of concrete. Strength tests of the verification batch must equal or exceed f'_c for the intended class of concrete.

(b) Option 2 – Trial Batch Mix Design Method:

The minimum cementitious content requirement in Table II-17 will be waived provided that the maximum water-cementitious ratio requirement of Table II-17 is met for the respective class of concrete. The required grading for fine and coarse aggregate will be waived provided the coarse aggregate meets the nominal maximum size as required in Table II-17 for the respective class of concrete.

The Contractor shall prepare a minimum of 3 trial concrete batches with differing cementitious materials contents over a range anticipated to encompass the design strength, f'_c , plus overdesign, and water-cementitious ratios encompassing the range permitted for the classes of concrete being evaluated. Trial batches may be produced in either small scale laboratory batches or truck batches with a minimum batch volume of 3 cubic yards each.

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The plastic properties of the trial concrete batches shall meet the requirements for consistency and air content in Table II-17 and meet the additional requirements listed below:

- The concrete temperature of the trial batches, as batched and sampled, shall be a minimum of 68°F.
- Air content of the trial batches shall be within a range of -1.0 to +1.5 percentage points of the median design air content for the classes of concrete being evaluated.
- Slump of the trial batches shall be within ± 1 inch of the maximum slump permitted for the class of concrete.

Three 4 X 8 inch test specimens shall be molded from each batch, cured in accordance with ASTM C31 for acceptance specimens, and then compression tested at an age of 28 days. The strength results of these tests shall be plotted on a graph to establish the relationship between the water-cementitious ratio and the compressive strength. Alternately, the relationship can be established between the cementitious content and the compressive strength. The design water-cementitious ratio, or design cementitious content, can then be derived from the graph to satisfy the required design strength plus an appropriate overdesign to be designated as f'_{cr} . The required cementitious materials content determined from these tests can be interpolated from the established graph. If desired, the design water-cementitious ratio or cementitious content can be determined from a polynomial regression analysis of the plotted strength data.

Test results from prior trial concrete batches are acceptable for use if they represent the same material sources proposed for the Department work, meet the requirements for trial concrete batches as stated above and are less than 18 months old.

The required cementitious content to satisfy the strength requirement for the respective class of concrete shall be determined in accordance with either of the two following procedures:

1. When the concrete production facility has sufficient data to establish a production standard deviation ("s"), as described in Section 217.07(d). The cementitious content required to meet the design strength requirement, f'_{cr} , then the f'_{cr} shall be based upon the following equation:

$$f'_{cr} = f'_c + 3s$$

2. When the concrete production facility does not have a production standard deviation established the cementitious content required to meet the design strength requirement, f'_{cr} , then the f'_{cr} shall be based upon the following equation:

$$f'_{cr} = f'_c + 1700 \text{ psi.}$$

Once the proposed mix design has been established, the Contractor shall produce one 3-cubic-yard production verification batch using the same type of equipment intended for use in supplying concrete to the Department. The proposed mix design will be considered acceptable if and only if the plastic properties of the concrete are within the Department's specification limits for the given class of concrete. Strength tests of the verification batch must equal or exceed f'_c for the intended class of concrete. The requirement for a production verification batch will be waived when the trial batching is performed –with truck batches.

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(c) Option 3 - Documented Field Experience Method:

The minimum cementitious content requirement in Table II-17 will be waived provided that the maximum water-cementitious ratio requirement of Table II-17 is met for the respective class of concrete. The required grading for fine and coarse aggregate will be waived provided the coarse aggregate meets the nominal maximum size as required in Table II-17 for the respective class of concrete.

An existing concrete mixture shall be considered acceptable for use if the Contractor has a satisfactory test record of previous field experience as described in Section 217.07(d), and that the proposed concrete mixture meets the following requirements:

1. The water cementitious ratio of the proposed concrete mixture is less than or equal to the maximum water cementitious ratio specified for the respective class of concrete.
2. The documented average strength, f'_{cr} , equals or exceeds the design compressive strength f'_c for the respective class of concrete in accordance with the following equation:
$$f'_{cr} = f'_c + 3s.$$
3. The proposed concrete mixture contains the same aggregate sources, supplementary cementitious materials type, and admixture type as those used to establish the previous field experience test record.
4. The consistency (slump) and air content are within the specification limits for the respective class of concrete.

(d) Documentation of Previous Field Experience or Production Standard Deviation(s)

An acceptable test record to document previous field experience or to establish a production facility standard deviation shall represent a minimum of 30 consecutive compressive strength tests results, encompass a production period of at least 45 days and test data not more than 18 months old. A test record of less than 30 tests, but not less than 15 tests, shall be permitted provided a modification factor is applied to the production facility sample standard deviation as shown below:

Multiply Standard Deviation by Modification Factor	
Number of Test	Modification Factor
15	1.16
20	1.08
25	1.03
30	1.00

The test record may be based on non-Department projects if documentation of the sources of concrete strength test results accompanies the submittal.

For latex hydraulic cement content, the dry weight ratio of cement/fine aggregate/coarse aggregate shall be 1:2.5:2. With the Engineer's approval a maximum adjustment of 10 percent may be made in aggregate weights to compensate for grading changes and variable specific gravity.

The Contractor shall adjust batch quantities during the course of the work to compensate for changes in workability caused by differences in the characteristics of aggregates and cements permitted within the specification requirements. Such adjustments shall be made only by the Contractor and shall not change the yield.

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If concrete cannot be obtained with the required workability or consistency or within the maximum design water content with the materials furnished, the Contractor shall make changes to secure the desired properties subject to the limiting requirements specified in Table II-17 and the Engineer's approval. The Contractor shall use a fine aggregate having a void content of less than 50.5 percent, except when lightweight fine aggregate is used. When the void content of the fine aggregate is more than 50.5 percent and the concrete does not have the desired properties, in lieu of changing the fine aggregate, the Contractor may take one or more of the following actions:

- Use a water-reducing admixture.
- Increase the cement content.
- Change the source of coarse aggregate.
- In hot weather, add ice or otherwise reduce the temperature to increase the workability.
- Submit other recommendations to the Engineer for approval.

The Contractor shall make trial batches under the observation of the Engineer to verify that concrete of the required workability and consistency is obtained within the specified water content when any of the actions is exercised. At least one trial batch shall be made with the concrete temperature at approximately 90°F to verify that the concrete mixture has sufficient workability and consistency without exceeding the specified water content. The concrete mixture shall be redesigned when the fineness modulus of the fine aggregate changes more than 0.2 from the original design and the concrete does not have the desired properties. Costs incurred because of adjustments of concrete mixture designs and for trial batches shall be borne by the Contractor with no additional compensation being made.

Section 217.08 – Acceptance is replaced with the following:

- (a) **Hydraulic cement concrete sampling:** For the purpose of acceptance testing for consistency, air content, density (unit weight), and preparation of specimens for strength testing or permeability testing, hydraulic cement concrete shall be sampled from the mixing/delivery unit in accordance with ASTM C172, except the sample shall be permitted to be taken after discharge of a minimum of two cubic feet of concrete from the delivery vehicle. The two cubic feet discharged shall not be used as part of the test sample or in the Work. The Contractor shall provide a receptacle conforming to ASTM C31 for the Department's use in obtaining the sample. Additional (but not alternate) points of sampling may be required by the Engineer when deemed necessary.
- (b) **Air and Consistency Tests:** Air and consistency tests will be performed by the Department prior to discharge of concrete into the forms to ensure that specification requirements are consistently being complied with for each class of concrete supplied. If either determination yields a result that is outside of the allowable range for air content or consistency, the Engineer will use the following procedure:
1. The Engineer will immediately perform a recheck determination. If the results confirm the original test results, the load will be rejected.
 2. The Contractor's representative will be immediately informed of the test results.
 3. The Contractor shall notify the concrete producer of the test results through a pre-established means of communication.

The Engineer may perform any additional tests deemed necessary and reject all remaining material that fails the tests.

Entrained air content will be determined in accordance with ASTM C231 or ASTM C173. Acceptance or rejection will be based on the results obtained from these tests.

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A mixture that contains the minimum amount of water consistent with the required workability shall be used. Consistency will be determined in accordance with ASTM C143. The Engineer will not allow adding cement to loads previously rejected for excessive water content or unsatisfactory consistency.

- (c) **Strength Tests:** The 28-day compressive strengths (f'_c) specified in Table II-17 are the strengths used in the design calculations. The Engineer will verify design strengths by tests made during the progress of the work in accordance with ASTM C31 and ASTM C39. The use of ASTM C42 will be at the Engineer's discretion. If the 28-day design compressive strength (f'_c) test results do not conform to the strength requirements specified in Table II-17, the Contractor shall take immediate steps to adjust the mixture design. In addition, the Engineer may require removal of or corrective measures be applied to any concrete that does not meet the requirements of Table II-17. If the concrete cylinder strength, f'_{cyl} , is less than the specified compressive strength found in Table II-17, the criteria in Table II-17A shall apply. The Department will not assess a calculated penalty less than \$500. However, the Contractor shall have the right to remove and replace concrete failing to meet specifications at the Contractor's cost.

Before concrete is placed, the Contractor shall provide a storage chamber at his expense for temporary storage of the Department's concrete cylinders. The Contractor shall be responsible for maintaining the chamber so that the concrete test cylinders are kept in a continuously moist condition and within a temperature range of 60°F to 80°F. The chamber shall be equipped with a continuously recording thermometer accurate to $\pm 2^\circ\text{F}$ for the duration of concrete cylinder curing. The Contractor shall provide the data from the continuously recording thermometer within time frames as approved by the Engineer. The chamber shall be located in an area where the test cylinders will not be subject to vibration and shall be of sufficient size or number to store, without crowding or wedging, the required number of test cylinders as determined by the Contractor based on his plan of operations. The Engineer will approve the location of the chamber prior to its placement.

When use of high-early-strength hydraulic cement concrete is required, it shall conform to Table II-17 except that the 28-day compressive strength requirement shall be obtained in 7 days. The Contractor may use up to 800 lbs/yd³ of Type I, Type II or Type III cement to produce high-early-strength concrete.

- (d) **Concrete Temperature** shall be measured in accordance with ASTM C1064.
- (e) **Density (Unit Weight)** of freshly mixed concrete will be measured, when required by the Engineer, in accordance with ASTM C138.
- (f) **Quality Assurance for Low Permeability Concrete:**

1. **General**

The Contractor shall prepare and cast test specimens on at least two trial batches using job materials, with permissible combination of cementitious materials, for testing by the Department for permeability and strength at least 5 weeks before the field application. The permeability samples shall be cylindrical specimens with a 4-inch diameter and at least 4-inches in length. Cylinders will be tested at 28 days in accordance with VTM 112. The test value shall be the result of the average values of tests on two specimens from each batch. Permeability values obtained from trial batches shall be 500 coulombs below the maximum values specified in Table II-17 to be acceptable.

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2. Acceptance Tests:

For each set of cylinders made for compressive strength tests, two additional cylinders shall be made for the permeability test. The Department will be responsible for making and testing all permeability test specimens.

If the average permeability test result is at most the value for the specified class of concrete in Table II-17, then full payment will be made for the lot the average permeability test result represents. However, if the average permeability test result exceeds the coulomb value in Table II-17, the percent reduction in payment for that lot of concrete shall be calculated by multiplying 0.005 by each coulomb above the coulomb value in Table II-17 by the concrete item Contract unit price times the number of cubic yards or cubic meters of concrete in the lot. The reduction in price will not exceed 5 percent of the concrete item Contract unit price. The Engineer will reject any concrete with a coulomb value that exceeds the maximum required in Table II-17 by 1000 coulombs. However, bridge deck concrete with any coulomb value exceeding the maximum required value by over 1000 coulomb may be accepted by the Engineer at 95 percent of the Contract unit price if the concrete in question has the required strength, meets the other specification requirements and the Contractor applies, at his own expense, an approved epoxy concrete overlay to the top of the entire deck. In such cases deck grooving will not be required. The Engineer will not allow the placement of epoxy overlays over latex overlays. The Contractor shall make the adjustment to the roadway grade as required by the Engineer at the Contractor's expense.

Similarly, concrete in abutments and pier caps with coulomb value exceeding the maximum required in Table II-17, by more than 1000 coulomb may be accepted at 95 percent of the Contract unit price if it has the required strength, meets the other specification requirements and the Contractor applies, at his own expense, one coat of epoxy Type EP 3B and one coat of epoxy EP 3T in conformance with Section 243.02, on top of the pier caps or abutment seats.

(g) Bond Strength for Silica fume concrete, latex-modified concrete and very-early-strength latex-modified concrete overlays:

The Contractor shall perform the bond strength testing in accordance with VTM 92 at a minimum age of 7 days; when scheduling the lane closure for testing, the inconvenience to the public shall be minimized. The bond strength shall be at least 150 psi; otherwise the substrate concrete shall fail at a depth of at least 0.5 inch over at least 50% of the test area. A minimum of one test result (based upon the average of three test specimen results) shall be conducted on each placement.

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Table II-17A - Price Reduction or Action Taken due to f'_{cyl} not meeting the specification value f'_c listed in Table II-17 is replaced with the following:

Table II – 17A
Price Reduction or Action Taken due to f'_{cyl} not meeting the specification value f'_c listed in Table II-17

Condition ^{1,2}	Concrete is a Pay Item	Concrete is <u>Not</u> a Pay Item
f'_{cyl} is greater than or equal to 98% f'_c	A ³	A ³
f'_{cyl} is greater than or equal to 90% f'_c and less than 98% f'_c	B ⁴	C ⁵
f'_{cyl} is less than 90% f'_c	D ⁶	D ⁶
f'_{cyl} is not available due to the Contractor's inappropriate handling and storage of specimens in accordance with ASTM C31	D ⁶	D ⁶

¹ f'_c is the 28-day design compressive strength requirement found in Table II-17.

² f'_{cyl} is the actual average tested strength of the standard-cured concrete cylinder made and tested in accordance with ASTM C31 and ASTM C39.

³A = full payment

⁴B = pay reduction = $[(f'_c - f'_{cyl})/f'_c] \times \text{Contract unit price for concrete per yd}^3 \times \text{number of yds}^3 \text{ the concrete represents}]$ or \$500, whichever is greater.

⁵C = pay reduction = $[(f'_c - f'_{cyl})/f'_c] \times 5 \times \text{Contractor's invoice price for concrete per yd}^3 \times \text{number of yds}^3 \text{ the concrete represents}]$ or \$500, whichever is greater.

⁶D = The Contractor shall submit an investigative plan stamped by a Professional Engineer holding a valid license to practice engineering in the Commonwealth of Virginia outlining how the Contractor shall demonstrate that the in-place concrete meets the structural strength requirements for the design. The Engineer will not permit any reduction in concrete strength below 0.9 f'_c for barriers, parapets, railings, etc. The Engineer will approve the investigative plan for all other applications prior to the execution of the investigation. All costs associated with this investigation shall be borne by the Contractor. After the investigation is completed, the Contractor shall submit a report to the Engineer showing the results of the Professional Engineer's analysis, testing and conclusions as well as any recommended actions proposed by the Contractor to be taken with the concrete that did not meet the strength requirements. The Department retains all rights to determine if the action proposed with regard to the concrete in question is acceptable. If the Department concurs with the proposed action and the concrete meets the structural strength requirements of the design and remains in place, any price reduction will be taken by Method B if the concrete is a pay item or Method C if the concrete is not a pay item. If the concrete does not meet the structural requirements of the design, the concrete shall be removed and replaced at no cost to the Department.

Section 217.11 – Self-Consolidating Concrete (SCC) is replaced with the following:

When specified or designated on the Plans, SCC shall be designed as the Class of Concrete specified in Table II-17 and conform to all the requirements herein except as outlined below. Combined aggregate grading and Viscosity Modifying Admixture (VMA) may be used. The VMA shall conform to ASTM C494, Type S. Synthetic fibers from the Department's Approved List 35 may be added to control cracking. Shrinkage-reducing admixture may be added to control shrinkage if approved by the Engineer. The maximum size of aggregate shall not be larger than: 3/4-inch; 1/5 the narrowest dimension between the sides of the forms; 1/3 the slab depth; and 3/4 of the minimum clear spacing between individual reinforcing bars or wires, bundles of bars, individual tendons, bundled tendons or ducts.

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The Contractor shall furnish the Engineer a mix design for the SCC which is proportioned according to the project specific criteria for compressive strength, air content, slump flow, VSI, J-Ring value, and segregation factor. The maximum water-cementitious materials ratio shall be 0.45 unless otherwise approved by the Engineer. The Contractor shall use the same components in the trial batches as are to be used in the project including: coarse and fine aggregates; water; source and type of cement; supplementary cementitious materials; and admixtures, including any site-added admixtures intended to be used.

- (a) **Slump flow** shall be measured in accordance with ASTM C1611, Procedure B. The slump flow shall be 26 ± 3 inches, and there shall be no visible segregation of the mix in the spread. The slump flow shall be compared to the slump flow with the J-ring in accordance with ASTM C1621.
- (b) **Visual Stability Index (VSI)** Rating in accordance with ASTM C1611 shall not exceed 1.
- (c) **J-Ring Flow** as measured by ASTM C1621 shall not be more than 2 inches different from slump flow.
- (d) **Stability (performed on trial batches)** of the concrete shall be determined in the laboratory prior to approval of the SCC mixture using test method ASTM C1610. Concrete mixtures shall have a maximum static segregation (segregation factor) of 15%.
- (e) **Permeability (if specified) and Strength Test Specimens** shall be sampled in accordance with Section 217.08(c) and fabricated in accordance with ASTM C1758.

Section 217.12 – Low Shrinkage Class A4 Modified Concrete is replaced by the following:

Low shrinkage Class A4 modified concrete shall be either Normal or Lightweight, as specified on the Plans.

- (a) **Normal weight:** The cementitious materials content shall be less than 600 pounds per cubic yard. High-early-strength hydraulic cement concrete as described in Section 217.08(b) shall not be used.

The 28 day drying shrinkage shall be less than 0.035% based on average of three specimens when tested in accordance with ASTM C157. Specimens shall be moist-cured for 7 days prior to testing for drying shrinkage. A Shrinkage Reducing Admixture (SRA) shall be used unless the 28 day drying shrinkage is $< 0.035\%$ without the admixture. A fixed amount of SRA dosage can be used without additional drying shrinkage testing if approved by the Engineer.

The Contractor, at his expense, shall prepare a minimum 3-cubic-yard trial batch of the mix at least 5 weeks before the proposed start date of production. The trial batch will be used to verify compliance with the shrinkage requirements listed herein and the minimum compressive strength, permeability, air void content, and slump listed in Table II-17. The Contractor shall prepare the trial batch with the same equipment to be used on the project. The Contractor shall obtain the services of a Department approved independent laboratory to perform the trial batch testing. Test results shall be furnished to the Engineer for review and approval. The Engineer will not authorize the Contractor to proceed with production of low shrinkage Class A4 modified concrete for the work required by the Contract until the test results verify conformance with the requirements stated herein.

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- (b) **Lightweight:** Use lightweight concrete with lightweight aggregates in conformance with AASHTO M 195.

The maximum cementitious materials content shall be 650 lbs/yd³. All other requirements shall conform to those listed in Table II-17 for Low Shrinkage Class A4 Modified concrete.

Maximum density of freshly mixed lightweight concrete, when tested in accordance with ASTM C138, shall be 120 lbs/ft³, or as specified on the plans.

Section 217.13 – Latex-modified Concrete, Very-Early Strength (LMCVE), for Bridge Deck Overlays is replaced with the following:

LMCVE shall conform to the requirements of Section 217 and Table II-17 except as modified herein.

Cement shall be approximately 1/3 calcium sulfoaluminate (C4A3S) and 2/3 dicalcium silicate (C2S) or other hydraulic cement that will provide a Latex-Modified Concrete that meets the physical requirements indicated in this section.

The LMCVE shall contain a minimum 658 lbs/yd³ of rapid hardening cement, 15% styrene butadiene latex by weight of cement, water not to exceed a water-cement ratio of 0.40, and aggregates as proposed by the Contractor for the mixture. The compressive strength minimum shall be 2500 psi at 3 hours and 3500 psi at 24 hours. Compressive strength specimens shall be cured in the molds in the same environment as the in-place LMCVE they represent. Specimens shall remain undisturbed at the site for 2 hours and shall be transported to the testing lab for testing.

Prior to placing overlay the Contractor shall calibrate the mobile concrete mixers. Once the mixers are calibrated, the mixtures shall be sampled and tested for slump and air content. The Contractor shall prepare and test specimens to demonstrate that the concrete mixture shall obtain a compressive strength of at least 2500 psi within 3 hours at the curing temperatures in which the overlay will be placed, and a compressive strength of at least 3500 psi at an age of 24 hours. All trial batching and preparatory work prior to placing LMCVE shall be at the Contractor's expense. During the placement of the overlay the Contractor shall take samples for testing for compressive strength. Permeability, slump and air content measurements will not be required, but may be performed by the Engineer.

Section 217.15 – Lightweight Concrete is inserted as follows:

Lightweight aggregate shall be proportioned for incorporation into the mix in accordance with AASHTO M 195. Prior to producing concrete for a project, the lightweight aggregate shall be in a moisture condition such that the total moisture exceeds the absorbed moisture by a minimum of one percentage point.

The air content for lightweight concrete will be measured by the Department in accordance with ASTM C173.

The fresh lightweight concrete density shall be a maximum 120 lbs/ft³ unless noted otherwise on the Plans and determined in accordance with ASTM C138. If specified in the Contract, the equilibrium density of the hardened concrete shall be determined in accordance with ASTM C567.

When the lightweight aggregate is used to provide internal curing, when concrete will be delivered by pumping, or when otherwise required by the Engineer, the aggregate shall be pre-wetted to obtain an absorbed moisture content equal to at least the 24-hour absorption as determined by AASHTO T 84 or T 85. In lieu of testing, the Engineer may allow use of a minimum absorbed moisture content equal to the recommendation of the lightweight aggregate manufacturer or as known by the concrete supplier through previous experience to provide the desired performance.

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If no previous experience is available for the field performance of the lightweight aggregate, the Contractor shall perform freeze/thaw resistance testing of the hardened concrete mixture on a trial batch in accordance with ASTM C666. The minimum durability factor shall be 90%. This information shall be provided to the Engineer for approval prior to the placement of lightweight concrete.

At least two weeks prior to the initial placement of lightweight concrete, a pre-pour meeting be held with the Contractor, Subcontractors, the concrete producer, and the lightweight aggregate supplier to discuss the production of the lightweight concrete and the placement operations. On the first day of production, the lightweight aggregate manufacturer's representative shall be at the batch plant and/or at the project site to provide technical assistance.

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SS223-002020-01

July 3, 2019

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)3 – Welded wire fabric is replaced with the following:

Welded wire fabric shall conform 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 A497, high yield of 70,000 psi.

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SS226-002020-01

September 27, 2019

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 226 – STRUCTURAL STEEL

SECTION 226 – STRUCTURAL STEEL of the Specifications is amended as follows:

Section 226.02(c) – Anchor Bolts is replaced with the following:

Anchor bolts shall conform to AASHTO M 314 or ASTM F1554.

1. **Anchor bolts for general use** shall be Grade 36. Nuts and washers shall conform to ASTM A563 and ASTM F844 respectively. Threads shall be coarse series.
2. **High-strength anchor bolts** shall conform to ASTM F1554, Grade 55 or AASHTO M314, Grade 55, with supplemental requirements of S1. Nuts and washers shall conform to ASTM A563, Grade DH and ASTM F436 respectively.
3. **Galvanization** of steel anchor bolts, nuts, and washers shall conform to ASTM A153.
4. **Anchor bolts for railings** shall conform to (c)1 herein, and shall be hot-dipped galvanized.

Section 226.02(h) – High-Strength Bolts, Nuts, Washers, and Direct Tension Indicators is renamed **High-Strength Bolts** and replaced with the following:

High-Strength Bolts shall conform to ASTM F3125 Grade A325 Type 1, unless specified otherwise. Nuts, Washers, and Direct Tension Indicators (DTIs) shall conform to specifications appropriate for the grade and type of bolt according to the table below. All nuts shall be Heavy Hex, and all washers shall be Hardened.

High-Strength Bolts	Nuts	Washers	DTIs
ASTM F3125, Grade A325, Type 1 ¹	ASTM A563, Grade DH	ASTM F436	ASTM F959
ASTM F3125, Grade A325, Type 3	ASTM A563, Grade DH3	ASTM F436	ASTM F959
ASTM F3125, Grade A490, Type 1	ASTM A563, Grade DH ASTM A194, Grade 2H	ASTM F436	ASTM F959
ASTM F3125, Grade A490, Type 3	ASTM A563, Grade DH3	ASTM F436	ASTM F959
ASTM A449, Type 1 ¹	ASTM A563, Grade DH	ASTM F436	ASTM F959
ASTM A449, Type 3	ASTM A563, Grade DH3	ASTM F436	ASTM F959

¹All bolts conforming to ASTM F3125, Grade A325, Type 1 or ASTM A449, Type 1 and their nuts, washers, and DTIs shall be galvanized.

1. Bolts, nuts, and washers conforming to ASTM F3125 Grade A490 shall not be galvanized. High-strength bolts used with unpainted weathering steel shall conform to ASTM F3125 Grade A325, Type 3; ASTM A449, Type 3; or, when specified, ASTM F3125 Grade A490, Type 3. All use of high-strength bolts conforming to ASTM A449 shall be approved, in writing, by the Engineer. ASTM A449 bolts shall conform to the rotational capacity testing requirement in ASTM F3125 Grade A325 and these Specifications.
2. The maximum hardness for bolts conforming to ASTM F3125 Grade A325 shall be 33Rc. The maximum tensile strength for such bolts shall be 150 kips per square inch for bolts 1 inch or less in diameter and 120 kips per square inch for larger bolts.

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3. High-strength fasteners (plain and coated) shall pass a rotational-capacity test as detailed in VTM 135.
- a. Bolts shall be proof-load tested in accordance with ASTM F606, Method I. Full-size bolts shall be wedge tested in accordance with ASTM F606. Nuts shall be proof-load tested in accordance with ASTM F606. Galvanized bolts shall be wedge tested after galvanizing. Galvanized nuts shall be proof-load tested in accordance with ASTM F606 only after overtapping, galvanizing, and lubricating operations are completed.
 - b. Galvanized bolts, nuts and washers shall be hot-dipped galvanized in accordance with ASTM A153. The Contractor may use mechanically galvanized bolts, nuts, and washers that conform to ASTM B695, Class 50 if the bolts are to be topcoated with paint.

When galvanized nuts conforming to ASTM A563 are specified, the amount of over-tapping may be less than specified; however, all nuts in each lot shall be over-tapped by the same amount. Galvanized nuts shall be lubricated in accordance with ASTM A563 using a lubricant sufficiently tinted so as to be readily visible.

Galvanized bolts, nuts, and washers shall have the galvanization measured for thickness. Measurements for bolts shall be taken on the wrench flats or top of the bolt head. Measurements for nuts shall be taken on the wrench flats.

When galvanized washers are specified, hardness testing shall be performed after galvanizing. The coating shall be removed prior to testing.

- c. All bolts, nuts, and washers shall be furnished with a marking that readily identifies their manufacturer. The Contractor shall provide the Engineer with an example of such marking and the manufacturer's certification for each bolt, nut, and washer supplied to the project. The Contractor shall ensure that two samples from each rotational capacity lot, each sample consisting of one bolt, nut, washer, and DTI (if used on the project), are submitted to the Department for testing, and are accompanied by all documentation.

Documentation shall indicate the results of all tests and processes performed on the hardware, the name of the testing facility, address where the tests were performed and the date of testing. Test results of bolts and nuts shall also indicate the lot number of the product. Bolts, nuts, and washers from different rotational-capacity lots shall not be shipped in the same container. In addition, shipping containers shall be marked with the rotational-capacity test lot number of the product supplied.

Section 226.02(i) – Steel Plate is inserted as follows:

Steel plate shipped to the project site as plate shall have the direction of roll indicated on the plate to provide direction to the field for cutting along the appropriate axis when making components in the field. The plate shall be blast cleaned to either SSPC SP-6 or SP-10 finish and have an arrow painted along the direction of roll with the letters "DOR" above it using an inorganic zinc rich primer from the Department's Approved List 13.

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SS245-002020-01

April 30, 2020

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 245 – GEOSYNTHETICS AND LOW PERMEABILITY LINERS

SECTION 245 – GEOSYNTHETICS AND LOW PERMEABILITY LINERS of the Specifications is amended as follows:

Section 245.03(a) – Geotextile Fabric for Use in Silt Fences is amended by replacing the second paragraph with the following:

The geotextile shall comply with the requirements of AASHTO M288, Table 8, Temporary Silt Fence Property Requirements, for grab strength and ultraviolet stability.

Section 245.03(c) – Geotextile Fabric for Use in Drainage Systems (Drainage Fabric) is amended by replacing the third paragraph with the following:

The geotextile shall comply with the requirements of AASHTO M288 Table 1-Geotextile Strength Property Requirements, Class 2, for grab strength.

Section 245.03(d) – Geotextile for Use in Stabilization is replaced with the following:

Geotextile for Use in Separation and Stabilization: Separation geotextiles are used as a permeable layer to separate fine-grained subgrades and aggregate base or subbase. Stabilization geotextiles are used in saturated or unstable conditions to provide the functions of separation and reinforcement.

1. Subgrade Separation Fabric:

Physical Property	Test Method	Requirements
Apparent opening size	ASTM D4751	Max. No. 70 sieve
Permittivity	ASTM D4491	Min. 0.1 sec ⁻¹

The geotextile shall comply with the requirements of AASHTO M288 Table 1-Geotextile Strength Property Requirements, Class 2, for grab strength, tear strength, and puncture strength. Only nonwoven geotextiles shall be used as subgrade separation geotextiles.

2. Subgrade Stabilization Fabric:

Physical Property	Test Method	Requirements
Apparent opening size	ASTM D4751	Max. No. 70 sieve
Permittivity	ASTM D4491	Min. 0.1 sec ⁻¹

The geotextile shall comply with the requirements of AASHTO M 288 for strength property requirements, Table 1, Class 1, for grab strength, tear strength, and puncture strength. Geotextiles used for subgrade stabilization shall be woven or nonwoven.

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3. Embankment Stabilization Fabric Up to 6 Feet High:

Physical Property	Test Method	Requirements
Apparent opening size	ASTM D4751	Max. No. 70 sieve
Seam strength	ASTM D4632	90% specified grab strength

The geotextile shall comply with the requirements of AASHTO M288 Table 1, Class 1 for grab strength, tear strength, and puncture strength.

Section 245.03(e) – Prefabricated Geocomposite Pavement Underdrain is replaced with the following:

Prefabricated Geocomposite Pavement Underdrain: Prefabricated geocomposite pavement underdrain shall consist of a polymeric drainage core encased in a nonwoven filter fabric envelope having sufficient flexibility to withstand bending and handling without damage. Prefabricated geocomposite pavement underdrain shall conform to the following:

1. **Core:** The drainage core shall be made from an inert, polymeric material resistant to commonly encountered chemicals and substances in the pavement environment and shall have a thickness of not less than 3/4 inch. Outer surfaces shall be smooth to prevent excessive wear of bonded filter fabric.

Physical Property	Test Method	Requirements
Compressive strength panel vertical strain and core area change	ASTM D1621/D2412/D6364	Min. 40 psi at 20% deflection after 24 hrs at 0 deg F and at 125 deg F
Water flow rate (after 100 hrs at 10 psi and normal confining pressure gradient of no more than 0.1)	ASTM D4716	Min. 15 gal/min/ft width for 12-in specimen length

2. **Filter Fabric:** Geotextile shall be bonded to and tightly stretched over both sides of the core. Geotextile shall not sag or block the flow channels, shall have a life equivalent to that of the core material, and shall conform to the requirements of (c) herein.

Section 245.03(h) – Dewatering Bag is replaced with the following:

Dewatering Bag: A nonwoven geotextile sewn together to form a bag that can be used in lieu of a de-watering basin for the purpose of filtering out suspended soil particles. The bag shall be capable of accommodating the water flow from the pump without leaking at the spout and seams.

Physical Property	Test Method	Requirements
Grab strength @ Elongation >50% (CRE/Dry)	ASTM D4632	Min. 250 lb (min)
Seam strength	ASTM D4632	90% Specified grab strength
Puncture	ASTM D6241	Min. 150 lb
Permittivity	ASTM D4491	Min 1.2 sec ⁻¹
UV resistance	ASTM D4355	Min. 70% at 500 hr
AOS	ASTM D4751	Max. 100 sieve

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Section 245.03(i)1 – Paving Fabric, Type I & II is replaced with the following:

Paving Fabric, Type I & II: All paving fabrics shall meet the requirements of the table below.

Property	Test Method	Type I	Type II
Mass per unit area, min (oz/yd ²)	ASTM D5261	4.5	4.1
Grab Tensile Strength, min (lbs.)	ASTM D4632	120	101
Grab Tensile Elongation, min (%)	ASTM D4632	50	50
Melting point, min (°F)	ASTM D276	320 ¹	320 ¹

¹320 is the softening/melt point of polypropylene.

Section 245.03(i)2 – Paving Mat; Type I, II, and III is replaced with the following:

Paving Mat; Type I, II, and III: Materials used for paving mat shall be a hybrid of two or more of the following material types: fiberglass, polyester, or polypropylene. Paving mat shall meet the requirements of the table below.

Property	Test Method	Type I	Type II	Type III
Tensile Strength, min (lbs)	ASTM D5035 (2C-E)	280	140	45
Ultimate Elongation, max (%)	ASTM D5035 (2C-E)	5	5	5
Melting Point, min (°F)	ASTM D276	320 ¹	320 ¹	320 ¹
Mass/Unit Area, min (oz/yd ²)	ASTM D5261	7.0	4.0	4.0

¹320 is the softening/melt point of polypropylene, which is lower than either polyester or fiberglass.

Section 245.03(i)3 – Paving Grid: Type I, II, & III is replaced with the following:

Paving Grid: Type I, II, & III: Materials used for paving grids shall be comprised of fiberglass and shall meet the requirements of the table below. Some paving grids are self-adhesive and some require nails for installation. Tack coat required for the installation of the overlay shall be specified with the paving grid. Refer to manufacturer's recommendations for tack coat type and application rate.

Physical Property	Test Method	Type I	Type II	Type III
Tensile Strength, min (lbs/in) ¹	ASTM D6637, Method A, modified ²	560 x 1,120	560	280
Aperture size, min (in)	Caliper	0.5	0.5	0.5
Elongation, max (%)	ASTM D6637 Method A	3	3	3
Mass per area, min (oz/yd ²)	ASTM D5261	16	10	5.5
Melting Point, min (°F) (fabric component – if applicable)	ASTM D276	420 ³	420 ³	420 ³

¹For Type I, machine and cross direction respectively. Strengths for Type II and III are in both directions.

²Tensile Strength shall be converted to and reported in lbs/in.

³420 is the softening/melt point of fiberglass.

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Section 245.03(i)4 – Composite Paving Grids: Type I, II, & III is replaced with the following:

Composite Paving Grids: Type I, II, & III: Composite paving grids shall consist of a fiberglass, polyester, or polyvinyl alcohol (PVA) paving grid integrated with a nonwoven geotextile and meet the requirements of the table below.

Physical Property	Test Method	Type I	Type II	Type III
Tensile Strength, min (lbs/in) ¹	ASTM D6637, Method A, modified ²	560 x 1,120	560	280
Aperture size, min (in)	Caliper	0.5	0.5	0.5
Elongation, max (%)	ASTM D6637 Method A	5	5	10
Mass per area, min (oz/yd ²)	ASTM D5261	16	10	5.5
Melting Point, min (°F) (fabric component – if applicable)	ASTM D276	320 ³	320 ³	320 ³

¹For Type I, machine and cross direction respectively. Strengths for Type II and III are in both directions.

²Tensile Strength shall be converted to and reported in lbs/in.

³320 is the softening/melt point of fiberglass PVA. See Section 318.03 for more on placement temperature.

Section 245.03(i)5 – Pavement Repair and Bridge Deck Waterproofing Strip Membrane is replaced by the following:

Pavement Repair and Bridge Deck Waterproofing Strip Membrane: Materials used for strip membranes shall be comprised of composite self-adhering rubberized asphalt attached to a paving fabric, a paving mat, or a paving grid and meet the requirements of the table below.

Property	Test Method	Type I
Strip Tensile Strength, min (lbs/in)	ASTM D882	50
Puncture Resistance, min (lbs)	ASTM E154	200
Permeance-Perms, max	ASTM E96 Method B	0.05
Pliability – 1/4" Mandrel 180° Bend at -25°F	ASTM D146	No cracks in fabric or rubberized asphalt

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SS246-002020-01

August 23, 2020

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 246.03(g) – Temporary Pavement Marking Materials is 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 (including luminance), and adhesive bond rating shall conform to the following requirements after the material has been installed on the test deck for 90 days:

- (1) **Maintained Dry Retroreflectivity:** The dry photometric quantity to be measured is the coefficient of retroreflected luminance (R_L) in accordance with ASTM E1710 for 30-meter geometry when measured in the skip line or centerline areas.

Coefficient of Retroreflected Luminance (R_L) (mcd/ft²/fc) Dry Retro Removable Tape-Type D, Class III

Color	Initial	90 Days In-Service
White	250	150
Yellow	200	100

- (2) **Maintained Wet Retroreflectivity:** The wet photometric quantity to be measured is the coefficient of retroreflected luminance (R_L) in accordance with VTM 124 (Visual Evaluation or ASTM E2177, Recovery Method) when measured in the skip line or centerline areas.

Coefficient of Retroreflected Luminance (R_L) (mcd/ft²/fc) Wet Retro Removable Tape-Type D, Class III

Color	Initial	90 Days In-Service
White	150	100
Yellow	125	75

- (3) **Day and Nighttime Color and Luminance (Y%):** According to ASTM D6628.

- (4) **Adhesive Bond Rating:** The average adhesive bond rating (from transverse and longitudinal lines) shall be 3 or higher according the NTPEP Work Plan.

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- (5) **Skid Resistance:** The initial skid resistance shall be at least 45 BPN when tested according to ASTM E303, if available.
- (6) **Thickness:** Per the manufacturer's recommendation.
- (7) **Adhesion:** No line shall be displaced, torn or missing.

b. Batch Testing:

Wet reflective, removable tape batch testing will be performed by the Department on samples obtained from the point of manufacture or from the field in accordance with the Materials Division's Manual of Instructions. Test results shall be compared against the following specifications and requirements:

- (1) **Retroreflectivity:** Refer to initial requirements
- (2) **Day and Night Color and Luminance:** Refer to initial requirements
- (3) **Thickness:** Refer to initial requirements
- (4) **Width:** The width shall be no less than the nominal width and no greater than 1/8" of the nominal width.
- (5) **Length:** The length shall be no less than the length stated on the manufacturer's packaging.
- (6) **Skid Resistance:** Refer to initial requirements.

2. Removable Black, Non-Reflective Tape (Type E):

Removable black, non-reflective tape shall be a durable, pliant material consisting of a mixture of polymeric materials, pigments and a friction material evenly distributed throughout its cross-sectional area and embedded into the surface. Removable black, non-reflective tape shall be suitable for use on asphalt concrete pavement surfaces, and shall be selected from the Department's Approved List 17.

- a. **Initial Approval** - Maintained adhesive bond rating shall conform to the following requirements after the material has been installed on the test deck for 90 days:
 - (1) **Adhesive Bond Rating:** The average adhesive bond rating (from transverse and longitudinal lines) shall be 3 or higher according to the NTPEP Work Plan.
 - (2) **Skid Resistance:** The initial skid resistance shall be at least 45 BPN when tested according to ASTM E303, if available.
 - (3) **Thickness:** Per the manufacturer's recommendation.
 - (4) **Adhesion:** No line shall be displaced, be torn or missing.

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b. Batch Testing

Black removable, non-reflective tape batch testing will be performed by the Department on samples obtained from the point of manufacture or from the field in accordance with the Materials Division's Manual of Instructions. Test results shall be compared against the following specifications:

- (1) **Skid Resistance:** Refer to initial requirements
- (2) **Thickness:** Refer to initial requirements
- (3) **Width:** The width shall be no less than the nominal width and no greater than 1/8" of the nominal width.
- (4) **Length:** The length shall be no less than the length stated on the manufacturer's packaging.

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SS305-002020-01

June 2, 2020

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 305 – SUBGRADE AND SHOULDERS

SECTION 305 – SUBGRADE AND SHOULDERS of the Specifications is amended as follows:

Section 305.02 – Materials is replaced with the following:

- (a) **Materials** may consist of material in place, treated material in place, or imported material. Imported material may be borrow material, select material, or other material as shown on the plans or specified in the Contract.

Materials other than regular excavation or borrow material that are shown on the Plans or specified in the Contract shall conform to the applicable requirements of these Specifications.

- (b) **Geotextile** materials used for subgrade stabilization or separation shall conform to Section 245.03(d).

Section 305.03(d) – Geotextile (Subgrade Stabilization) is renamed **Geosynthetics** and replaced with the following:

Geosynthetics includes Geotextile used for subgrade separation or stabilization, and geogrid.

1. **Subsurface preparation:** Before placing the geotextile, geogrid, or combination of both, prepare the subgrade in accordance with Sections 304 and 305. Separation and stabilization geotextiles shall not be placed when weather conditions, in the judgement of the Engineer, are not suitable to allow placement of geotextiles or cover materials. These include wet or snowy conditions, rainfall, temperatures below freezing, frost, or excessively windy conditions.
2. **Geotextile or geogrid placement.** Place geogrid on top of geotextile when both are shown at the same elevation in the Plans. Place the geosynthetic in the direction of traffic. Geosynthetic shall be smooth and free of wrinkles and folds. Placement by dragging the geosynthetic across the finished surface will not be allowed. On curves, the geotextile may be folded or cut to conform to the curve. The fold or overlap shall be in the direction of traffic and held in place by pins, staples or piles of aggregate subbase or base materials. Overlap in the direction of construction. Overlap at least 24 inches at the ends and sides of adjoining sheets or sew the joints according to the Manufacturer's recommendations. Do not place longitudinal overlaps below anticipated wheel loads or joints. Hold the geosynthetic in place with pins, staples, or piles of aggregate subbase or base materials.

Replace or repair geosynthetic that is torn or punctured. Remove the damaged area and place a patch of the same type of geosynthetic overlapping 36 inches beyond the damaged area or sew a seam around the entire perimeter of the damaged area.

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3. **Initial layer placement and compaction:** Place initial layer in accordance with Sections 308 and 309.

If during placement of the geosynthetic, the equipment causes subgrade rutting in excess of 2 inches, end dump the backfill material onto the geotextile or geogrid from the edge of the geosynthetic or from previously placed cover material. Do not operate equipment directly on the geosynthetic. Spread the end-dumped pile of cover material maintaining the minimum specified lift thickness over the geosynthetic. Avoid sudden stops, starts, or turns of the construction equipment. Fill ruts from construction equipment with additional cover material. Do not blade material down to remove ruts. If rutting continues to exceed 2 inches during placement, decrease the construction equipment size, decrease the equipment weight, or increase the first lift thickness as directed by the Engineer.

Compact in accordance with Sections 308 and 309. Do not use sheepsfoot or studded compaction equipment. Compact the cover material with pneumatic-tire or non-vibratory smooth drum rollers.

Tracked equipment shall not be operated directly on top of geosynthetic. Rubber-tire equipment may pass over the geosynthetic if the geosynthetic is not damaged by the equipment (causing excessive rutting, 2 inches or greater); the Contractor shall specifically avoid sudden braking or sharp turning, and shall maintain low speed.

4. **Subsequent layer placement and compaction.** Place and compact subsequent layers in accordance with Sections 308 and 309.

Section 305.04 – Measurement and Payment is amended by replacing the tenth paragraph with the following:

Geotextile will be measured in square yards, complete-in-place. Overlaps and seams will not be measured for separate payment. The accepted quantity of geotextile will be paid for at the contract square yard price. This price shall include furnishing, placing, lapping, and seaming material.

Section 305.04 – Measurement and Payment is amended by revising the Pay Item Table as follows:

The following pay items are removed:

Pay Item	Pay Unit
Geotextile (Subgrade stabilization)	Square yard

The following pay items are inserted:

Pay Item	Pay Unit
Geotextile (type)	Square yard

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September 17, 2020

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 315 – ASPHALT CONCRETE PLACEMENT

SECTION 315 – ASPHALT CONCRETE PLACEMENT of the Specifications is amended as follows:

Section 315.04(b)2 – When the base temperature is between 40 degrees F and 80 degrees F is renamed **When the base temperature is between 40°F and 80°F** and replaced with the following:

When the base temperature is between 40°F and 80°F the Contractor shall use Table III-2 to determine the minimum laydown temperature of the asphalt concrete mixes. At no time shall the base temperature for base (BM) and intermediate (IM) mixes be less than 40°F. At no time shall the laydown temperature for base (BM) and intermediate (IM) mixes be less than 250°F.

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/50°F ^{1,2}	250°F/270°F ^{1,2}
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

¹Minimum base temperature 50°F and placement temperature 270°F for SM-4.75 mixes regardless of WMA use.

²For SM-4.75 mixes, the temperatures are the minimum base temperature and placement temperature regardless of WMA use.

The Contractor shall employ a MTV during the placement of SM-4.75 mixtures when the ambient or base temperature is between 50°F and 60°F.

Section 315.05(b) – Conditioning Existing Surface is amended by replacing the second paragraph with the following:

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.

Section 315.05(d) – Compacting is amended by inserting the following after the seventh paragraph:

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.

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Table III-3 – Density Requirements is replaced with the following:

TABLE III-3
Density Requirements

Mixture Type	Min. Control Strip Density (%)¹
SM-9.5A, 12.5A	92.5
SM-9.5D, 12.5D	92.5
SM-9.5E, 12.5E	92.5
IM-19.0A, IM-19.0D, IM-19.0E	92.2
BM-25.0A, BM-25.0D	92.2

¹The control strip density requirement is the percentage of Theoretical Maximum Density (TMD) of the job-mix formula by SUPERPAVE mix design or as established by the Engineer based on two or more production maximum theoretical density tests.

Table III-4 – Payment Schedule for Lot Densities is renamed **Payment Schedule for Control Strips** and replaced with the following:

TABLE III-4
Payment Schedule for Control Strips

% TMD	% of Payment
Greater than 96.5	95
92.2 ¹ /92.5 ² -96.5	100
90.0-92.1 ¹ /92.4 ²	90
88.0-89.9	80
Less than 88.0	75

¹For IM and BM mixes only.

²For SM mixes only.

Table III-4A – Payment Schedule for Method A Lot Densities is inserted as follows:

TABLE III-4A
Payment Schedule for Method A Lot Densities

% TMD	% of Payment
Greater than 96.5	95
92.2 ¹ /92.5 ² – 96.5	100
90.0 – 92.1 ¹ /92.4 ²	90
88.0 – 89.9	80
Less than 88.0	75

¹For Intermediate and Base Mixes only.

²For Surface Mixes only.

Table III-4B – Payment Schedule for Method B Lot Densities is inserted as follows:

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	75

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Table III-5 – Payment Schedule for Surface, Intermediate and Base Courses is replaced with the following:

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 92.2 ¹ /92.5 ²	100
90.0-92.1 ¹ /92.4 ²	90
88.0-89.9	80
Less than 88.0	75

¹The minimum TMD percentage for Intermediate and Base Mixes

²The minimum TMD percentage for Surface Mixes

Table III-6 – Payment Schedule for Surface, Intermediate and Base Courses is replaced with the following:

TABLE III-6	
Payment Schedule for Surface, Intermediate and Base Courses (Asphalt Patching)	
% TMD	% of Payment
Greater than or equal to 91.5	100
90.2-91.4	95
88.3-90.1	90
Less than or equal to 88.2	75

Section 315.05(e) – Density is replaced with the following:

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' 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 to VTM 81 or from the testing of plugs or 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 densities as specified in Table III-3 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.

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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 the Specifications and VTM 76.

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 actions. 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 in Table III-3, 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 in Table III-3 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 in Table III-3, the tonnage placed in the control strip and any subsequent paving before construction of another control strip will be paid for in accordance with Table III-4. The Contractor shall take corrective action to comply with the density requirement specified in Table III-3.

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- b. Test section (lot): For the purposes of both contractor quality control and for determining acceptance, the Engineer will consider each day's production as a lot unless the paving length is less than 3,000 feet or more than 7,500 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 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 feet 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 subplot. When saw plugs or cores are used to determine acceptance, a single test site per subplot will be selected by the Engineer. Test sites will not be located within 12 inches of the edge of any application width for surface and intermediate mixes or within 18 inches of the edge of any application width for base mixes.

The Engineer will compare the average of the subplot density measurements to the target nuclear density, or for plugs and cores, to the target percent of theoretical maximum density achieved on the control strip to determine the acceptability of the lot. The Contractor shall immediately notify the Engineer and institute corrective action if two consecutive sublots produce density results less than 98% or more than 102% of the target control strip density.

Density testing for acceptance will not be performed on areas too thin or irregular to test accurately, such as open-graded friction courses, and wedge-and-leveling courses. Areas that are difficult to compact due to subgrade support or space limitations, including but not limited to crossovers and gore areas, will be placed in accordance with Section 315.05(e)2.

For purposes of density determination, acceptance, and payment, Main Pavement is defined to include travel lanes, shoulders 6 feet or greater, turn lanes, ramps, and acceleration/deceleration lanes.

(1) Method 'A' (plugs or cores)

Any pay adjustment will only be applied to Main Pavement.

The Contractor shall perform acceptance testing for density for each subplot by obtaining one plug, defined as a sawed 4-inch by 4-inch specimen, or one 4-inch-diameter core, at a single random test site selected by the Engineer. More than one plug or core can be taken if the original sample is damaged.

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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 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.). Hot mix asphalt paving 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.

If a minimum of 80% of each test section lot's core/plug samples is no lower than 92.5% of TMD for Surface Mixes and 92.2% of TMD for Intermediate and Base Mixes 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.

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.

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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.

(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 3,500 feet or less and at least 6 feet in width shall be compacted to a minimum density of 92.5% for surface mixes or 92.2% for intermediate and base mixes 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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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, the minimum density of 91.5% 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 patching 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%, payment will be made on the tonnage within the 20 or 100 ton lot in accordance with Table III-6.

Section 315.05(g) – Rumble Strips is replaced with the following:

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.

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.

Section 315.05(i) – Coating designed surface cuts is inserted as follows:

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.

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When liquid asphalt coating (emulsion) is required, the Contractor shall coat the entire rumble strip area with the liquid asphalt coating (emulsion) using a pressure distributor following the cutting and cleaning of the depressions of waste material. For rumble strips installed on the shoulder, the approximate application rate shall be 0.1 gallons per square yard. For centerline rumble stripes and plastic inlaid marker grooves, the approximate application rate shall be 0.05 gallons per square yard. The application temperature shall be between 160 degrees F and 180 degrees F. For shoulder rumble strips and plastic inlaid marker grooves, overspray shall not extend more than 2 inches beyond the width of the cut depressions and shall not come in contact with pavement markings.

If liquid asphalt coating (emulsion) is applied before installation of the plastic inlaid marker, then the bottom of the plunge cut shall be protected during liquid asphalt coating (emulsion) application so as to avoid inhibiting the ability of the marker epoxy to bond to the bottom of the plunge cut. If the liquid asphalt coating (emulsion) is applied after the plastic inlaid marker has been installed, then the retroreflector shall be protected during the liquid asphalt coating (emulsion) application to prevent the coating material from dirtying or damaging the retroreflector, with the protection removed after the coating has been completed.

Section 315.08 – Measurement and Payment is amended by replacing the third paragraph with the following:

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.

Section 315.08 – Measurement and Payment is amended by deleting the sixth paragraph.

Section 315.08 – Measurement and Payment is amended by replacing the tenth paragraph with the following:

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.

Section 315.08 – Measurement and Payment is amended by revising the Pay Item Table as follows:

The following pay items are removed:

Pay Item	Pay Unit
Liquid asphalt coating (Rumble strips)	Square yard
Rumble Strip (Asphalt)	Linear foot

The following pay items are inserted:

Pay Item	Pay Unit
Liquid asphalt coating (type)	Square yard
Rumble Strip (shape, pavement type)	Linear foot

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July 6, 2020

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 319 – THIN HOT MIX ASPHALT CONCRETE OVERLAY

SECTION 319 – THIN HOT MIX ASPHALT CONCRETE OVERLAY of the Specifications is inserted as follows:

319.01 – Description

This work shall consist of the production and placement of a Thin Hot-Mix Asphalt Concrete Overlay (THMACO) according to the Plans, Specifications, and as directed by the Engineer.

319.02 – Materials

- (a) **Asphalt cement** shall be a performance graded asphalt (PG) 64V-28 conforming to AASHTO M 332 and Section 210 or as designated by the Engineer
- (b) **RAP:** Recycled asphalt pavement material will not be permitted.
- (c) **Coarse aggregate** shall conform to Section 203 or as directed by the Engineer. Water Absorption when tested according to AASHTO T 85 shall be at most 2%. Material retained on the No. 4 sieve and larger sieves shall conform to the following when tested according to ASTM D4791:

Flat & Elongated Ratio	Maximum Content
3:1	25%
5:1	10%

- (d) **Fine aggregate** shall conform to Section 202, except for grading, which shall be tested according to AASHTO TP 33 (Method A) with a value of at least 45% and a sand equivalent value of at least 50 when tested according to AASHTO T 176.
- (e) **Mineral filler** shall conform to Section 201.
- (f) **Fiber additive** when required shall be cellulose or mineral fiber approved by the Engineer based on supplier's certification of properties and documentation of success in similar applications in hot mix asphalt.
- (g) **Antistripping additive** shall be used. It may be hydrated lime or a chemical additive from the Department's Approved List 7 or a combination of both. The approved chemical additive shall be added at a rate of not less than 0.30% by weight of the total asphalt content of the mixture. The mixture shall produce a tensile strength ratio (TSR) of at least 0.80 for the design and production tests. The TSR shall be determined according to AASHTO T 283, including a freeze-thaw cycle (4-inch specimens compacted with a Marshall Hammer or 3.5 by 6-inch specimens when compacted with a gyratory compactor); except that the 16-hour curing time requirement and the 72 to 96-hour storage period will not be enforced by the Department. Design tests shall use the same materials that are to be used in the production mix and shall be conducted in a laboratory approved by the Department.

When a chemical additive is used, it shall be added to the asphalt cement prior to the introduction of the asphalt cement into the mix. Any chemical additive or particular concentration of chemical additive found to be harmful to the asphalt material or that changes the original asphalt binder performance grade (PG) shall not be used.

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- (h) **Hydrated lime** shall conform to ASTM C977. Hydrated lime shall be added at a rate of at least 1% by weight of the total dry aggregate.

A separate bin or tank and feeder system shall be provided to store and accurately proportion the dry or slurried lime into the aggregate. The lime and aggregate shall be mixed by pugmill or other Department approved means to achieve a uniform lime coating of the aggregate before entering the drier. If lime is added in dry form, the aggregate shall contain at least 3% free moisture. The Department will not permit the stockpiling of lime treated aggregate.

The feeder system shall be controlled by a proportioning device, which shall be accurate to within ± 10 percent of the specified amount. The proportioning device shall have a convenient and accurate means of calibration. A flow indicator or sensor shall be provided with the proportioning device and interlocked with the plant controls, aggregate feed, or weigh system, such that production of the mixture shall be consistently maintained and, if there is a stoppage of the lime feed, interrupted.

The method of introducing and mixing the lime and aggregate shall be subject to approval by the Engineer before beginning production.

319.03 – MIX FORMULA

The Contractor shall submit for the Engineer's approval, a job mix formula within the following design ranges of percent passing each sieve size as noted:

Sieve Size	Percent By Weight Passing Square Mesh Sieves	Production Tolerance (Single Test)
1/2 in	100	-2
3/8 in	85-100	± 5
#4	25-40	± 4
#8	19-32	± 4
#16	15-23	± 3
#30	10-18	± 3
#50	8-13	± 3
#100	6-10	± 2
#200	4-7	± 1

Asphalt Content, %	Production Tolerance (Single Test)
5.0 – 5.5 ¹	± 0.2

¹Target asphalt content shall result in a minimum film thickness of 9 microns.

In addition to the job mix submittal, the Contractor shall submit ignition furnace calibration data according to VTM 102 and aggregate property test results prepared by an approved testing laboratory for the aggregate components or aggregate blend.

Job mixes outside the above design range will be considered by the Engineer based on mix performance documented by the supplier to eliminate or minimize flushing or visual deficiencies and may include changes to gradation, asphalt content or the use of fibers. The Engineer may require limited production of less than 300 tons for verification of an acceptable mix, before the Engineer's approval of the job mix.

319.04 – SURFACE PREPARATION

Before beginning paving operations, the existing pavement surface shall be cleaned of all accumulated dust, mud, vegetation or other debris, which may affect the bond of the THMACO by the Contractor.

Pavement cracks or joints 1/4-inch or more in width shall be cleaned and filled with a sealant material conforming to Section 322.04. Quantities and payment will be according to Section 322.

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Pavement markers, thermoplastic pavement marking and tape pavement markings shall be removed before beginning paving operations. Pavement irregularities greater than 1 inch in depth shall be filled with a material designated in the Contract or approved by the Engineer. Payment for the material will be according to Section 315.

Utility structures shall be protected and referenced before paving for location and adjustment (when necessary) after paving at no cost to the Department.

319.05 – Tack Coat

Unless otherwise directed in the contract, two options for placing the tack coat are available.

- (a) **Option 1:** A tack coat of asphalt emulsion conforming to Section 210(e) or other emulsion approved by the Engineer shall be applied before placement of the asphalt concrete. The tack coat shall be placed within 10 seconds of placing the THMACO unless otherwise directed by the Engineer. At no time should any part of the paving machine come into contact with the tack coat before the overlay is applied. The emulsion shall be uniformly applied with a paver spray bar, except hand spray equipment may be used in areas inaccessible to the paver spray bar as directed by the Engineer; inaccessible areas are exempt from the 10-second criterion. The emulsion asphalt shall be applied at a temperature recommended by the supplier at a starting rate of 0.25 gallons per square yard ± 0.02 unless otherwise approved by the Engineer.
- (b) **Option 2:** An hot-applied Non-Tracking tack coat conforming to Section 310 and listed on Approved List 50.1A shall be applied before placement of the THMACO. The tack coat shall be uniformly applied with a spray bar paver or a mechanical distributor, except hand spray equipment may be used in areas inaccessible. The tack coat shall be applied at a temperature recommended by the supplier at a residual rate of 0.14 gallons per square yard ± 0.02 unless otherwise approved by the Engineer.

319.06 – Placement of Hot Mix Asphalt

The application rates of the overlay shall range from 80 pounds per square yard to 85 pounds per square yard in order to result in a 3/4-inch compacted lift thickness.

The thin lift of hot mix asphalt shall be placed by a paver designed for the placement of thin lifts as designated in the contract. The asphalt mix shall be delivered to the paver hopper at a temperature of 315°F $\pm 15^\circ\text{F}$ measured in the paver hopper. The paver shall be capable of placing the asphalt mix at a speed of 30 feet per minute. When the base temperature is 50°F or above, placement of the asphalt concrete wearing course will be permitted.

319.07 – Compaction

Two steel double drum rollers weighing no less than 10 tons shall perform compaction of the asphalt mix. No less than two passes shall be completed before the surface temperature of the asphalt has reached 185°F.

319.08 – Acceptance

The Contractor shall perform gradation and asphalt cement content tests on one sample taken in a random manner approved by the Engineer from each 500 tons of production. The material will be considered acceptable for gradation and asphalt content, if the results obtained are within the tolerance allowed from the job mix formula in the above table. Material represented by test results outside the tolerance may be removed and replaced with acceptable material by the Contractor at no additional cost to the Department at the discretion of the Engineer.

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Should visual examination by the Engineer reveal that the material in any load, or portion of the paved roadway is contaminated, segregated, or flushed with asphalt cement, that load, or portion of the paved roadway may be rejected without additional sampling of the material.

319.09 – Warranty

The Contractor shall provide a one-year warranty from the date of final acceptance on all THMACO surfaces. The Department will periodically monitor the overlay surface installed throughout the warranty period for compliance and acceptability. The Contractor shall repair any area that fails before the end of the warranty period and shall do so within 14 days after Department notification unless otherwise directed by the Department. Failure of the THMACO surface is defined as the loss of adhesion of the material to the underlying layer resulting in a pothole greater than 1 square foot of area (delamination). The Engineer shall notify the Contractor of the date for the warranty inspection at the end of the warranty period and the Contractor shall be present at the inspection.

319.10 – Measurement and Payment

Thin hot mix asphalt concrete will be measured in tons and paid for at the contract unit price per ton, which shall include warranty, tack coat, surface preparation (except crack and joint sealing), all materials, additives, labor and equipment as described herein to install and complete the work.

Crack and joint sealing will be paid according to Section 322.

Payment will be made under:

Pay Item	Pay Unit
Thin Hot Mix Asphalt Concrete	Ton

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SS320-002020-01

July 6, 2020

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 320 – BM-25.0D WITH INCREASED ASPHALT CONTENT

SECTION 320 – BM-25.0D WITH INCREASED ASPHALT CONTENT of the Specifications is inserted as follows:

320.01 – Description

This work shall consist of supplying, testing and installing asphalt concrete base with additional asphalt binder. BM-25.0D with additional asphalt binder content (BM-25.0D+0.4 and BM-25.0D+0.8) shall conform to all of the requirements of a standard BM-25.0D in Section 211 except as provided herein.

Construction and Acceptance of one or more courses of asphalt concrete consisting of BM-25.0D+0.4 or BM-25.0D+0.8 asphalt concrete base shall be according to BM-25.0D in Section 315 and the density specified herein.

320.02 – Materials

Materials shall conform to Section 211 and 315.02.

320.03 – Job Mix Formula

The mixes shall conform to all of the requirements of a standard BM-25.0D in Section 211 except as noted herein.

An equivalent single axle load (ESAL) will be established by the Engineer and the mix types may be specified as one of the types listed in Table III-7.

TABLE III-7
Mix Design Requirements

Mix Type	Equivalent Single Axle Load (ESAL) Range (millions)	Final Asphalt Performance Grade (PG)	NMAS¹
BM-25.0D (+0.4 and +0.8)	All ranges	64H-16	1"

¹Nominal Maximum Aggregate Size (NMAS) is defined as one sieve size larger than the first sieve to retain more than 10 percent aggregate

To determine the asphalt binder content for the BM-25.0D plus additional asphalt binder, an approved BM-25.0D conforming to Section 211 will be used to determine the optimum asphalt binder content and aggregate gradations. While the optimum asphalt binder content for the BM-25.0D will be selected at 2.5% in accordance with Section 211, the initial asphalt binder content for the BM-25.0D+0.4 or BM-25.0D+0.8 will be selected using the 3.5% air voids. The additional asphalt binder (0.4% or 0.8%) will be added to the initial asphalt binder content at 3.5% air voids in order to establish the design asphalt binder content.

During production the BM-25.0D+0.4 and BM-25.0D+0.8 mixes shall be controlled according to Table III-8.

The Laboratory mixing temperature shall be 310°F to 320°F and the compaction temperature shall be 295°F to 300°F for both testing and design.

Field correction factor. The field correction factor is determined by subtracting the bulk specific gravity of the aggregate from the effective specific gravity of the aggregate determined at the JMF asphalt binder content achieved.

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TABLE III-8
Production Criteria

Mix Type	VTM Production (%)	VFA (%)	Min. VMA (%)	Fines/Asphalt Ratio	Number of Gyration	
					N Design	N Initial
BM-25.0D+0.4	1.0 – 4.0	67 – 92	12.0	0.6 – 1.3	65	7
BM-25.0D+0.8	0.5 – 3.5	67 – 92	12.0	0.6 – 1.3	65	7

TABLE III-8A
Recommended Performance Grade of Asphalt Binder

Mix Type	Percentage of Reclaimed Asphalt Pavement (RAP) in Mix	
	%RAP < 25.0	25.0 ≤ %RAP ≤ 35.0
BM25.0D (+0.4 and +0.8)	PG 64H-22	PG 64S-22

320.04 – Testing

When asphalt binder is extracted and recovered according to AASHTO T 170, the recovered asphalt binder shall meet the required grade specified in Table III-7.

320.05 – Acceptance and Adjustment

Acceptance and adjustments shall be according to BM-25.0D in Section 211.08 and 211.09.

320.06 – Density

Density shall be determined in accordance with Section 315.05(e). The minimum density requirements for BM-25.0D+0.4 and BM-25.0D+0.8 are shown in Table III-9.

TABLE III-9
DENSITY REQUIREMENTS

Mixture Type	Minimum Control Strip Density (%) ¹
BM-25.0D+0.4	94.0
BM-25.0D+0.8	96.0

¹The control strip density requirement is the percentage of theoretical maximum density of the job mix formula by SUPERPAVE® mix design or as established by the Engineer based on two or more production maximum theoretical density tests.

320.07 – Measurement and Payment

BM-25.0D+0.4 and BM-25.0D+0.8 will be measured in tons and paid for at the Contract ton price. This price shall include all materials and labor specified in Section 315 as modified in this Section for asphalt concrete base.

Payment will be made under:

Pay Item	Pay Unit
Asphalt Concrete Base Course Type BM-25.0D+0.4	Ton
Asphalt Concrete Base Course Type BM-25.0D+0.8	Ton

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SS321-002020-01

May 26, 2020

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 321 – TRENCH WIDENING

SECTION 321 – TRENCH WIDENING of the Specifications is inserted as follows:

321.01 – Description

This work shall consist of installing asphalt into a constructed trench to widen shoulders and travel lanes in accordance with the Plans and Specifications and as directed by the Engineer.

321.02 – Material

- (a) Materials shall conform to Section 211.02 and 315.02.
- (b) **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 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 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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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 set of plugs or cores 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.

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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SS322-002020-01

September 9, 2020

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 322 – ASPHALT SURFACE PREPARATION AND OVERLAY

SECTION 322 – ASPHALT SURFACE PREPARATION AND OVERLAY of the Specifications is inserted as follows:

322.01 – Description

This work shall consist of preparation of existing pavement before resurfacing, and placement of asphalt concrete overlay pavement courses on existing paved roadway surfaces. This work shall be performed in accordance with Sections 211 and 315, Sections 248 and 317 where Stone Matrix Asphalt (SMA) is specified, and as specified herein. Where pavement planing is required it shall be performed in accordance with Section 515 and as specified herein. This work is applicable only to the routes or areas designated to be overlaid in the Contract and as authorized by the Engineer.

322.02 – Materials

- (a) **Asphalt concrete** shall conform to Section 211. Stone Matrix Asphalt (SMA) shall conform to Section 248.
- (b) **Asphalt for Tack Coat** shall conform to Section 210 and shall be applied in accordance with Section 310.
- (c) **Type A Crack Sealant** shall be a hot-poured modified asphalt rubber with granulated crumb rubber and latex plasticizers and shall conform to ASTM D6690. The proportions of the materials, by weight, shall be up to 80% asphalt and up to 25% crumb rubber.
- (d) **Type B Crack Sealant** material shall consist of PG 64H-22 and polyester fibers from the Department's Approved List 32. The Contractor shall provide the PG 64H-22 suppliers data for heating. Fibers shall not exceed 5% by weight. Fiber loading will be determined at the project site in order to minimize the need for over banding as described. The fiber loading shall be approved by the Engineer before use.
- (e) **Type C Crack Sealant** material shall consist of PG 64H-22 and polyester fibers from the Department's Approved List 32 at 5% by weight. The Contractor shall provide the PG 64H-22 suppliers data for heating.
- (f) **Crumb rubber** shall be 100 percent vulcanized rubber and conform to the following gradation requirements:

Sieve	Percent Passing
No. 10	100%
No. 40	0-40%

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322.03 – Equipment

Equipment for furnishing and placing asphalt concrete overlay shall conform to Section 315. Equipment for furnishing and placing Stone Matrix Asphalt (SMA) shall conform to Section 317. Pavement planing equipment shall conform to Section 515.

Proper crack sealing equipment must be used for the specific material listed according to the manufacturer's recommendations for the Sealant specified. The equipment for hot applied sealant compounds shall be a melting kettle of double boiler, indirect heating type, using oil as a heat-transfer medium. The kettle shall have an effective mechanically operated agitator, a re-circulation pump and shall be equipped with a positive thermostatic temperature control which shall be checked for calibration before beginning work. The unit shall be capable of maintaining the specified mixing temperature within 10°F. Manufacturer's recommendations for mixing and application temperatures shall be followed with the latter being measured at the nozzle of the applicator wand. Overheating or direct heating of the sealant material will not be permitted. The hoses, connectors and applicator wand shall all be insulated.

322.04 – Sealing Cracks in Asphalt Concrete Surfaces or Hydraulic Cement Concrete Pavement

Type A crack sealant materials shall be used on pavements which will not be overlaid with asphalt concrete within one year. Type B crack sealant material shall be used to fill cracks in pavements that will be overlaid with asphalt concrete within one year. Type C crack sealant shall be used when routing, cleaning, and sealing cracks in asphalt concrete surfaces that may or may not be overlaid within one year. The Contract will designate which sites are to use each material. Cracks ranging in width from 1/8 inch to 1-1/2 inches shall be sealed. Cracks that exceed 1-1/2 inches are not included for crack sealing.

The sealant shall not be placed when the ambient or pavement temperatures fall below 45°F, or when moisture is present in the crack to be sealed.

Before sealing, cracks shall be thoroughly cleaned as approved by the Engineer using an oil free hot air blasting heat lance capable of a velocity of 3000 fps at 300°F. Cracks shall be cleaned such that all dirt, debris, moisture and other foreign materials that will prevent bonding of the sealant are removed to a minimum depth of 1 inch. All foreign material (i.e., dirt, grass, rocks) shall be removed from the pavement to prevent re-contamination of the crack. Cracks shall be completely dry before sealing. Any crack not meeting the approval of the Engineer shall be re-cleaned and dried.

The sealant shall be pumped directly into the crack from the heater-melter unit at the temperature specified by the manufacturer immediately following the cleaning of each crack. Cracks shall be sealed using the methods herein as approved by the Engineer.

- (a) **Type A crack sealant** shall be installed from the bottom up in a continuous manner such that the crack is completely filled level with the pavement surface, and the sealant shall overlay the crack at the pavement surface leaving a maximum "over-banded" appearance of 1-inch wide on each side of the crack. The material shall not continue to flow beyond these limits once a crack is sealed. The height of the sealant above the pavement surface shall not exceed 1/8 inch. For this method of sealing, the applicator wand shall be equipped with a shoe that will produce the extruded over-band as well as completely fill the crack.
- (b) **Type B crack sealant** shall be installed from the bottom up in a continuous manner such that the crack is completely filled level with the pavement surface. The sealant may overlay the surface on each side of the by no more than 1/2 inch or leave a no "over-banded" appearance. The material shall not continue to flow beyond these limits once a crack is sealed. The height of the sealant above the pavement surface shall not exceed 1/8 inch. For this method of sealing, the applicator wand shall be equipped with a shoe that will minimize the extruded over-band as well as completely fill the crack.

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- (c) **Type C crack sealant:** Before sealing, the cracks shall be routed to a minimum depth of 1 inch and to a minimal width of 1/2 inch. Cracks shall be filled from the bottom up in a continuous manner such that the crack is completely filled level with the pavement surface, and the sealant shall overlay the crack at the pavement surface leaving a no "over-banded" appearance. The material shall not continue to flow beyond these limits once a crack is sealed. The height of the sealant above the pavement surface shall not exceed 1/8 inch.

Before starting each day's operation, the applicator wand and hose shall be heated in accordance with the equipment manufacturer's recommendations and the material in the heater-melter unit re-circulated.

The applicator wand shall be returned to the mixing unit and the sealant material re-circulated immediately upon completion of each crack sealing.

Any crack in hydraulic cement concrete pavement which cannot be filled due to the sealant draining into a large void, shall be plugged with a suitable material (i.e. backer rod) approved by the Engineer before the project, and then filled. After being plugged, recleaning of the crack may be required before filling with sealant.

The Contractor shall measure and record the temperature of the material on 2-hour intervals during the heating and application of the crack sealing material. For Type A material, the material shall never be heated over 420°F. For Type B and C material, the material shall not be heated above 375°F. Any material heated above these temperatures shall be discarded (i.e. all material in the heater-melter unit) at no expense to the Department. Additionally, if the material becomes lumpy or has poor flow at elevated temperature, then the material shall be discarded (i.e. all material in the heater-melter unit) at no expense to the Department.

Traffic shall be kept off the pavement surface until the crack sealant has cured to the point it will not track or be distorted by traffic. The Contractor shall replace, at his or her expense, any sealant that pulls out within 96 hours after opening the pavement to traffic.

322.05 – Asphalt Concrete Scratch/Leveling Course Before Resurfacing

Scratching or leveling a crack sealed, scabbed or distorted pavement surface (milled or unmilled) shall be done using the appropriate asphalt mixes in areas designated by the Engineer. Scratching and leveling shall only be applicable to the routes or areas designated to be overlaid in this contract and where the Engineer has authorized the limits. Scratching and leveling shall be completed before the overlay paving operation.

- (a) **Scratch/level Type I** is a localized scratch and level of the pavement, including crack sealed, distorted or scabbed areas, making up no more than 50% of the surface area to be overlaid in each distinct paving site or location on the Contract.
- (b) **Scratch/level Type II** is a widespread scratch and level of the pavement, including crack sealed, distorted or scabbed areas, making up more than 50% of the surface area to be overlaid in each distinct paving site or location on the Contract.

For surfaces that will receive a direct overlay, the Engineer will designate the limits of surface area for scratch/leveling course to be installed before beginning the work. For pavements that are milled, the Engineer will identify and designate the limits of surface area for scratch/leveling course to be placed as the work progresses in accordance with Section 105.03.

Areas designated for scratch/leveling course shall be thoroughly cleaned before applying tack coat.

A tack coat shall be applied to all exposed surfaces of the area which will receive asphalt material according to Section 310.

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Asphalt concrete scratch or leveling material shall be the surface mix asphalt designated in the contract or as approved by the Engineer. SMA shall not be used as a scratch/leveling course material. Limestone mixes (L) may be used in leveling courses when approved by the Engineer.

Asphalt material shall be placed in a lift of no more than 2 inches in depth; typical lifts are approximately 1 inch in depth. Asphalt may be placed with variable depth thickness as necessary for leveling. After each lift, it shall be compacted with equipment according to Section 315.03(c) using a minimum of 3 passes of a minimum 8 ton roller. Density testing will not be required. Care shall be taken to ensure the surface of the finished repaired area conforms to the grade of the surrounding pavement.

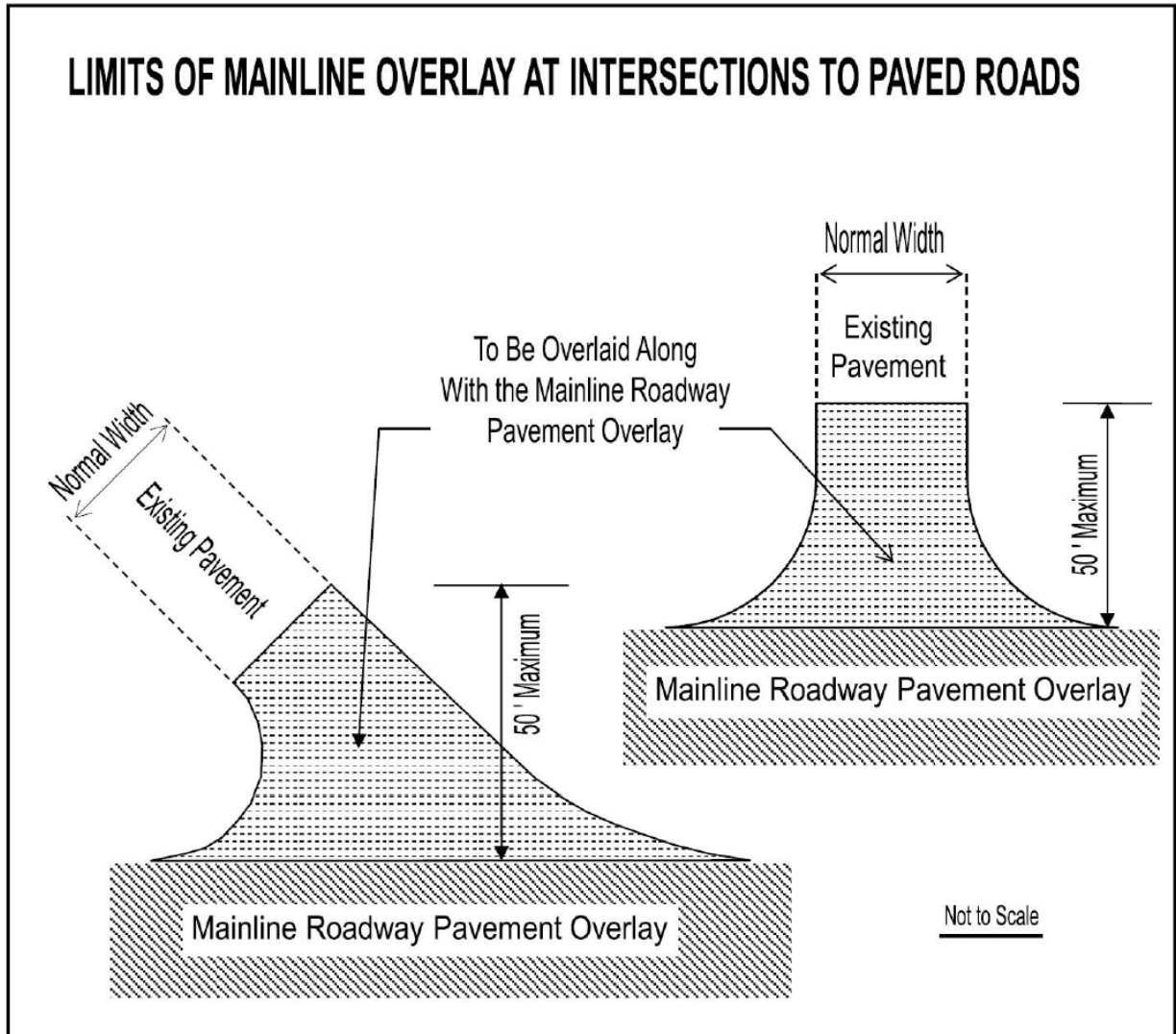
Scratching and leveling shall be completed before the overlay or resurfacing. If a scratch or level placement fails before overlay, the Contractor will be responsible for removing and replacing the failed material at no cost to the Department.

322.06 – Limits of Mainline Overlay at Intersections to Paved Roads

The Contractor shall overlay the intersecting paved road from the edge of pavement of the mainline roadway pavement overlay to a point that includes the entire radius of the intersecting paved road according to Figure III-10. This distance from the edge of pavement of the mainline roadway pavement overlay shall not exceed 50 feet measured according to Figure III-10.

On curb and gutter sections where planing is required for the mainline roadway overlay, planing shall also be required on the intersecting paved road area before these areas are overlaid.

FIGURE III-10
Limits of Mainline Overlay at Intersections to Paved Roads



Asphalt concrete overlay pavement placed on existing paved roadway surfaces that intersects the mainline roadway pavement overlay shall be constructed using a method approved by the Engineer, which shall include the cutting back to expose the course. The approved method shall provide a smooth transition between new pavement and existing pavement. Such tie-ins shall conform to Section 315.05(c) except that all joints at tie-in locations shall be tested using a 10-foot straightedge according to Section 315.07(a).

322.07 – Placement of Asphalt Concrete Overlays

Placement of Asphalt Concrete Overlays shall conform to Section 315 and the requirements herein. Where pavement planing is required it shall be performed according to Section 515. No placement of an overlay or deck planing will be permitted on a bridge deck without the prior written approval of the District Bridge Engineer.

Limitations of operations for placing asphalt concrete overlays shall be according to Section 108.02, the Contract requirements, and as specified herein.

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Before beginning paving overlay operations the Contractor shall clean accumulated dust, mud, or other debris that may adversely affect the bond of the new overlay from the existing pavement surface to the satisfaction of the Engineer. The cost for cleaning and surface preparation shall be included in the bid price for the asphalt concrete.

Sealing pavement cracks or joints and filling pavement irregularities greater than 1 inch deep using approved materials and specified procedures herein will be performed by the Engineer ahead of the Contractor's operations or included in the work performed by the Contractor. When such corrective work is performed by the Contractor, the work will be paid for as designated by the specific pay items in the Contract.

The Contractor shall remove thermoplastic and tape pavement markings and raised pavement markers before performing paving overlay operations. Thermoplastic and tape pavement markings shall be at least 90 percent eradicated so as not to interfere with bonding of pavement overlay or the transfer of the existing marking thickness up through the overlay. This work shall be performed in accordance with Sections 512 and 704 except as otherwise permitted herein.

The Contractor shall protect and reference utility structures before paving in order to locate or adjust these structures, if necessary, after paving operations are completed. The protection and referencing of utility structures shall be at no cost to the Department.

Temporary transverse pavement-wedge tie-ins shall be constructed where pavement overlay operations are temporarily halted as allowed or required herein, in Section 315, elsewhere in the Contract, or by the Engineer. Each temporary tie-in shall be no less than 3 feet in length for every inch of depth of overlaid pavement and shall consist of a mix that is suitable as a surface mix asphalt to provide a smooth transition between the installed overlay and existing pavement or bridge deck. Such temporary tie-ins shall be constructed before the overlaid pavement is opened to traffic.

Final transverse pavement tie-ins shall be constructed to provide a smooth transition between newly overlaid pavement and existing pavements, bridge decks, and existing pavement underneath bridge overpasses. Such tie-ins shall conform to Standard Drawing ACOT-1 or Section 315.05(c) as applicable, except that all joints at tie-in locations shall be tested using a 10-foot straightedge in accordance with Section 315.07(a). When planing is necessary at tie-ins to existing pavement or bridge decks to obtain the required overlay depth specified in the Contract, the existing pavement shall be planed according to the ACOT-1 Standard or the requirements herein.

No pavement overlay shall decrease the vertical clearance under a bridge. In situations where the pavement under the overpass cannot be planed in direct proportion to the overlay to be placed, the new pavement is to be tied down to the existing pavement under the overpass at least 75 feet from the outer edges of the bridge overpass according to Standard Drawing ACOT-1.

The ACOT-1 Standard for asphalt concrete overlay transitions shall apply when there is at least 1 inch of grade change between the finished asphalt concrete overlay surface and the existing pavement surface and where any of the following conditions exist:

- Bridge decks or bridge overpasses are located within the project site to receive the overlay.
- The Contractor has to tie-in the top course of asphalt concrete overlay to an existing hydraulic cement concrete pavement surface.
- The Contractor has to tie-in the top course of the asphalt concrete overlay to an existing asphalt concrete pavement surface and planing is included in the Contract as pay item.

When tying in the top course of the asphalt concrete overlay to an existing asphalt concrete pavement surface and there is no pay item in the Contract for planing, the asphalt concrete overlay tie-in shall conform to Section 315.07(a).

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Rideability pay adjustments will not apply to the first 105 feet (0.02 of a mile) measured from the line of the tie-in.

If an emergency or an unforeseen circumstance such as equipment failure or breakdown occurs during the Contractor's operations that prevents the Contractor from squaring up the overlaid surface on adjacent lanes before a weekend, a holiday or a temporary shutdown, any additional signage, traffic control devices, or markings or markers required to protect the traveling public shall be provided at the Contractor's expense.

The Contractor shall ensure positive drainage is provided for all overlaid surfaces according to Section 315.05(c).

(a) Roadways with Posted Speed Limit of 55 Mph or Greater

The Contractor shall install asphalt concrete overlays to the depths specified for the specific routes identified in the Contract. Where asphalt concrete is being overlaid by 2 inches or less on roadways carrying traffic, the Contractor shall have the option of squaring up the overlay operation at the end of each workday or squaring up all travel lanes, excluding shoulders, before the weekend. Shoulders shall be squared up within 48 hours after the weekend unless required sooner elsewhere in the Contract, and before continuing mainline paving. All lanes including shoulders must be squared up before holidays or any temporary shutdowns.

Where overlays of more than 2 inches are being placed, the Contractor must square up the overlay operation at the end of each workday. This requirement shall apply to travel lanes and shoulders.

Asphalt concrete pavement overlay operations shall be performed in only one travel lane at a time. Under no circumstance will the Contractor be allowed to overlay a portion of the width of a travel lane, ramp, or loop and leave it exposed to traffic.

Where uneven pavement joints exist either transversely or longitudinally at the edges of travel lanes due to the overlay operations, the Contractor shall provide advance warning signage and traffic control devices for the scope of the overlay operation the Contractor is performing according to the details provided in the Contract. The cost for the advance warning devices and signage shall be included in the cost of other appropriate items. Temporary pavement markings and markers required as a result of staging such operations will be measured and paid for according to Section 512 and 704.

Ramps, exits, and turn lanes are to be paved in such a manner that a longitudinal joint with a surface elevation of 1 inch or more between the existing pavement and the overlay (where the overlay is the higher of the two elevations) will not be left for vehicles to cross within the posted speed limits in a "run-on" situation. Ramps, exits, and turn lanes are to be paved to the extent that the joint crossed by traffic is traversed at an angle close to 90 degrees (perpendicular), or the ramp, exit and turn lane shall be squared up with the adjacent mainline lane at the time of installation.

Only approved mixes that have been verified according to Section 211.03(f) and have met the requirement for roller pattern density shall be placed on limited access roadways.

(b) All Other Roadways

Where asphalt concrete is being overlaid to a height of 2 inches or less on roadways carrying traffic, the Contractor shall have the option of squaring up the overlay operation at the end of each workday or squaring up all lanes including shoulders at least once every 4 consecutive workdays, excluding weekends. All lanes including shoulders must be squared up before weekends, holidays, or any temporary shutdowns.

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Where overlays of more than 2 inches are being placed on roadways carrying traffic the Contractor shall square up the overlay operation at the end of each workday. This requirement shall apply to travel lanes and shoulders.

Asphalt concrete pavement overlay operations shall be performed in only one travel lane at a time. Under no circumstance will the Contractor be allowed to overlay a portion of the width of a travel lane, ramp, or loop and leave it overnight.

Where uneven pavement joints exist either transversely or longitudinally at the edges of travel lanes due to the overlay operations, the Contractor shall provide advance warning signage and traffic control devices at his expense according to the details provided in the Contract for the scope of overlay operation he is performing.

322.08 – Measurement and Payment

Crack Sealant/Filler for cracks or joints will be measured by the pound using either the Conversion Approach or the Direct Measurement Approach. For the Conversion Approach, the Engineer, or an appointed representative, shall measure the amount of material in the heater-melter unit at the beginning of the day. For the Direct Measurement approach, the Contractor shall provide the Engineer the certified weight of the heater-melter unit at the beginning and end of each day. During the day's operation, the Engineer will log all additional material added to the heater-melter unit. The Engineer will determine the pounds of material applied for payment purposes. No payment will be made for waste or unused material.

When using the Conversion Approach, the Contractor shall use a calibrated measuring rod to determine the actual quality of material in gallons and shall be converted to pounds taking consideration for the temperature of the material at the time of placement. A chart or other approved conversion method furnished by the sealant material manufacturer or supplier shall be used to perform the conversion from gallons to pounds.

Crack Sealant/Filler Type A and Type B will be measured in pounds and paid for at the Contract pound price. This price shall be full compensation for providing the sealant and filler, complete-in-place, including cleaning and sealing the cracks and for all tools, labor, equipment, materials and incidentals related fully completing the installation.

Crack Sealant/Filler Type C will be measured in pounds and paid for at the Contract pound price. This price shall be full compensation for providing the sealant and filler, complete-in-place, including routing, cleaning, and sealing the cracks and for all tools, labor, equipment, materials and incidentals related fully completing the installation.

Asphalt Concrete, including overlay at intersections to paved roads, will be measured and paid for in accordance with Section 315.

Stone Matrix Asphalt, including overlay at intersections to paved roads, will be measured and paid for in accordance with Section 317.

When the Proposal has a Pay Item corresponding to scratching/leveling in the Schedule of Items then that Pay Item will include the work designated in the corresponding Pay Item Definition below and be paid at the price designated by the Bidder. If the Proposal has no Pay Item for scratching/leveling as described herein, that work shall meet the descriptions herein and will be measured and paid for as described herein.

Scratch/Leveling Course Type I will be measured in tons of asphalt material and paid for at the rate of two times the Contract ton price of the mix types of asphalt authorized by the Engineer. This price shall include preparing the area, furnishing and applying tack coat, furnishing and applying asphalt material, and compaction.

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Scratch/Leveling Course Type II will be measured in tons of asphalt material and paid for at the rate of one and one-half times the Contract ton price of the mix types of asphalt authorized by the Engineer. This price shall include preparing the area, furnishing and applying tack coat, furnishing and applying asphalt material, and compaction.

Payment will be made under the following, when included in the "Schedule of items",

Pay Item	Pay Unit
Crack Sealant/Filler (Type)	Pound
Scratch/Level (Type)	Tons

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SS323-002020-01

September 9, 2020

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONSSQ315-000120-00
SECTION 323 – ASPHALT PATCHING OF EXISTING FLEXIBLE AND RIGID PAVEMENT AND SHOULDERS

SECTION 323 – ASPHALT PATCHING OF EXISTING FLEXIBLE AND RIGID PAVEMENT AND SHOULDERS of the Specifications is inserted as follows:

323.01 – Description

This work shall consist of repairing specified sections of existing flexible, rigid or composite pavements by removing all or part of the defective materials in the sections and replacing them with asphaltmix paving material. The locations of the repairs will be specified in the Contract or directed by the Engineer.

Partial Depth Hydraulic Cement Concrete (HCC) Patching shall consist of the removal of areas of unsound HCC pavement material to a depth of no more than 50 percent of the maximum pavement thickness and replacement with asphalt concrete as specified in the Contract document and as directed by the Engineer. The pavement thickness is defined as the thickness of the HCC.

Shoulder Patching shall consist of the removal of specified areas of the full thickness of the pavement section in the shoulder only to the top of the base material (bound or un-bound) and replacement with asphalt concrete as specified in the Contract or as directed by the Engineer.

323.02 – Materials

(a) **Asphalt concrete mixtures** shall conform to Section 211.

(b) **Tack coat** shall conform to Section 310.

323.03 – Equipment

Saw cutting equipment shall be capable of sawing neat vertical faces along the patch boundaries. The use of a carbide-toothed wheel saw shall not be permitted for sawing the patch boundaries in rigid pavements. A carbide-tipped wheel saw may be used for additional saw cuts provided that a minimum 3-inch clearance from the sawed boundary is maintained.

Material in the areas identified for shoulder patching may be removed by a milling machine, backhoe, or other excavating equipment as approved by the Department.

Equipment for furnishing and placing asphalt concrete overlay shall conform to Section 315.

323.04 – Procedures

Asphalt patches shall be placed in accordance with Section 315. The existing pavement shall be removed with a minimum disturbance to the aggregate base material and the faces of the remaining pavement shall be cut to a smooth, vertical face without ragged edges.

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The existing pavement shall be removed by milling, grinding, saw cutting or any other approved method to the specified depth for the full perimeter of the designated area. The Contractor shall clean this area of any debris or loose particles before applying tack. Tack coat shall be applied to surface and vertical faces of exposed asphalt concrete at a rate of 0.2 gallon per square yard. Exposed base aggregate shall be primed with tack coat at an application rate of 0.4 gallon per square yard. Where HCC is encountered on bitumen over concrete composite pavements before reaching the specified depth, the depth of the patch shall then be limited to the top elevation of the HCC. Before applying the patch, the bottom of the excavation of all patches shall be cleaned of all loose and foreign materials and stabilized by hand or mechanical tamping.

HCC pavement to be removed shall be sawed along the transverse and longitudinal boundaries, including the lane and shoulder/lane joints as shown on the Plans or as directed by the Engineer. Additional saw cuts inside the patch boundaries will be permitted to facilitate the concrete removal operation. During the removal operations, utmost care shall be exercised to minimize disturbance and damage to the reinforcing steel, and the adjacent pavement and shoulder. Before applying the patch, the bottom of the excavation of all patches shall be cleaned of all loose and foreign materials.

Manual placement will be permitted for installation of the asphalt concrete, when approved by the Engineer. Control strip and pavement profile measurements will not be required. Density shall conform to Section 315.05(e). Variation between surfaces at the run on and run off joints shall not be more than 1/4 inch when tested with a 10-foot straight edge. When the surface of the asphalt patch will also be the final riding surface, that surface shall conform to the tolerances in Section 315.07(a). The Contractor shall correct humps and depressions exceeding the specified tolerance or the defective work shall be removed and replaced with new material.

The existing pavement materials that are removed shall be hauled away from the repair site immediately, and disposed of properly by the Contractor in accordance with Section 106.04.

Minimum and maximum lift thickness for patching with Superpave asphalt concrete mixes shall be maintained during construction of the patches in conformance with the following:

SUPERPAVE ASPHALT CONCRETE LIFT THICKNESS (PATCHING)			
NMAS (mm)	MINIMUM (in)	MAXIMUM (in)	RECOMMENDED (in)
9.0	0.75	1.5	1.0
9.5	1.25	2.0	1.5
12.5	1.5	2.0	1.75
19.0	2.0	3.0	2.0
25.0	2.5	4.0	3.0

Patching and surface preparation shall be completed before the overlay or resurfacing. If an Asphalt Patch fails before overlay, the Contractor will be responsible for removing and replacing the failed patch at no cost to the Department.

323.05 – Measurement and Payment

Payment for all patching will be adjusted for density in accordance with Section 315.05(e) and Table III-6.

Partial Depth HCC Patching will be measured in square yards and will be paid for at the Contract square yard price for the mix and depth specified. This price shall be full compensation for furnishing materials and installing pavement patches complete in place. The work shall include, but not be limited to supplying materials, saw cutting, milling, grinding, removing and disposing of existing material, the cost to haul and place asphalt concrete, and all labor, equipment, tools, supervision, fuel and incidentals necessary to complete the work.

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Shoulder Patching will be measured in square yards and will be paid for at the Contract square yard price for the mix and depth specified. The payment shall be full compensation for furnishing materials and installing pavement patches on the shoulder complete in place. The work shall include, but not be limited to supplying materials, saw cutting, milling, grinding, removing and disposing of existing material, the cost to haul and place asphalt concrete, and all labor, equipment, tools, supervision, fuel and incidentals necessary to complete the work.

Travel Lane Patching will be measured in tons and will be paid for at the Contract ton price for the mix specified. The payment shall be full compensation for furnishing materials and installing pavement patches in the travel lanes complete in place. The work shall include, but not be limited to supplying materials, saw cutting, milling, grinding, removing and disposing of existing material, the cost to haul and place asphalt concrete, and all labor, equipment, tools, supervision, fuel and incidentals necessary to complete the work. **Liquid asphalt tack or prime** will not be measured for separate payment and the cost to furnish and apply the liquid asphalt shall be included in the bid price for patching.

When Surface Preparation and Restoration is a Pay Item, that Pay Item will include the work designated in the corresponding Pay Item Definition below and be paid at the Contract price. Otherwise, that work shall meet the descriptions herein and will be measured and paid for as described herein.

Surface Preparation and Restoration Type I is a localized disintegration of the pavement, including distorted areas, no more than 5 inches in depth and no more than 20 square feet in surface area. Surface Preparation and Restoration Type I will be measured in tons of asphalt material and paid for at the rate of three times the Contract ton price of the mix types of asphalt authorized by the Engineer. This price shall include removing and disposing of unsuitable material, preparing the area, furnishing and applying tack coat, furnishing and applying asphalt material, and compaction.

Surface Preparation and Restoration Type II is a localized disintegration of the pavement, including distorted areas, no more than 5 inches in depth and more than 20 square feet in surface area. Surface Preparation and Restoration Type II will be measured in tons of asphalt material and paid for at the rate of four times the Contract ton price of the mix types of asphalt authorized by the Engineer. This price shall include removing and disposing of unsuitable material, preparing the area, furnishing and applying tack coat, furnishing and applying asphalt material, and compaction.

Surface Preparation and Restoration Type III is a localized disintegration of the pavement more than 5 inches in depth with limits of the surface area as defined by the Engineer. Surface Preparation and Restoration Type III will be measured in tons of asphalt material and paid for at the rate of five times the Contract ton price of the mix types of asphalt authorized by the Engineer. This price shall include removing and disposing of unsuitable material, preparing the area, furnishing and applying tack coat, furnishing and applying asphalt material, and compaction.

Payment will be made under:

Pay Item	Pay Unit
Partial Depth PCC Patching (Asphalt Patch Mix Type and Depth)	Square Yard
Shoulder Patching (Shoulder Mix Type and Depth)	Square Yard
Travel Lane Patching (Patch Mix Type)	Ton
Surface Preparation and Restoration (Type)	Ton

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SS401-002020-01

May 1, 2020

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 401—STRUCTURE EXCAVATION

SECTION 401 – STRUCTURE EXCAVATION of the Specifications is amended as follows:

Section 401.03(i) – Backfilling is amended by replacing the second and third paragraphs with the following:

The Contractor shall use select backfill material behind all abutments. The Department will include a detail indicating the limits (zone) of the select backfill in the Plans. The Contractor shall compact the material in accordance with Sections 305 and 303. The top surface of the backfill material shall be neatly graded.

The earthen fill around the perimeter of the select material zone in abutments, wingwalls, and retaining walls shall be placed in horizontal layers not more than 6 inches in loose thickness and then compacted at $\pm 20\%$ of optimum moisture content to a density of at least 95% as compared to the Theoretical Maximum Density. The Department will perform tests in accordance with VTM 10 to verify compliance with density requirements determined in accordance with VTM 1 or VTM 12. The Contractor shall place and compact the backfill in front of units in horizontal layers to the same elevation as the layers behind units until the final elevation in front is reached as the work progresses. Backfill in front of units shall be placed and compacted in horizontal layers to the same elevation as the layers behind units until the final elevation in front is reached. Backfill shall be placed in a manner to prevent wedging action against the concrete. The Contractor shall modify slopes bounding excavation for abutments, wingwalls, or retaining walls to lock in adjacent backfill material by stepping or serrating the existing soils. The Engineer will not permit jetting of the fill behind abutments, wingwalls, or retaining walls.

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SS407-002020-01

August 29, 2019

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 407 – STEEL AND OTHER METAL STRUCTURES

SECTION 407 – STEEL AND OTHER METAL STRUCTURES of the Specifications is amended as follows:

Section 407.04 – Fabrication Procedures is amended by replacing the seventh, eighth, and ninth paragraphs with the following:

The Contractor shall furnish a complete mill analysis showing chemical and physical results from each heat of steel for all units prior to fabrication. Before cutting, pieces of steel other than steel conforming to ASTM A709, Grade 36, that are to be cut to smaller-sized pieces shall be legibly marked with the ASTM A6 specification identification color code or the material specification designation. The identification color code of the latest system adopted under ASTM A6 shall be used to identify material. Any markings that indicate direction of roll shall be transferred to each new piece before cutting the new piece from the larger plate.

If requested by the Engineer, the Contractor shall furnish an affidavit from the fabricator certifying that the fabricator has marked and maintained the identification of steel in accordance with these specifications throughout the fabrication operation.

Section 407.06(c) – Assembly of Structural Connections Using High-Strength Bolts is amended by replacing the first paragraph with the following:

Assembly of Structural Connections Using High-Strength Bolts: Field connections shall be made with high-strength bolts 7/8-inch in diameter fabricated in accordance with ASTM F3125, Grade A325 unless otherwise specified. The Engineer will give consideration to the substitution of adequately designed welded connections if requested in writing by the Contractor.

Section 407.06(c)1 – Bolts, nuts, and washers is replaced with the following:

Bolts, nuts, and washers: Bolts, nuts, and washers shall conform to Section 226 and shall each be from one manufacturer on any one structure unless otherwise approved by the Engineer. In addition, each bolt, nut, and washer combination, when installed, shall be from the same rotational-capacity lot. Prior to installation, the Contractor shall perform a field rotational-capacity test on two nut, bolt, and washer assemblies for each diameter and length in accordance with VTM 135. Bolts fabricated in accordance with ASTM F3125, Grade A490 and galvanized bolts fabricated in accordance with ASTM F3125, Grade A325 shall not be reused. Retightening previously tightened bolts, which may have been loosened by the tightening of adjacent bolts, shall not be considered a reuse. Other bolts may be reused only if approved by the Engineer. Threads of plain (uncoated) bolts shall be oily to the touch when installed. Galvanized nuts shall be lubricated by lubricant containing a visible dye. Threads of weathered or rusted bolts shall be cleaned of loose rust, scale, and debris and relubricated. Lubricant shall be as recommended by the fastener manufacturer.

Section 407.06(c)3 – Installation is amended by replacing the second paragraph with the following:

When bolts fabricated in accordance with ASTM F3125, Grade A490 are used with steel having yield points less than 40 kips per square inch, hardened washers shall be installed under the nut and bolt head.

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Section 407.06(c)3 – Installation is amended by replacing the eighth paragraph with the following:

The required minimum bolt tension is equal to 70% of specified minimum tensile strengths of bolts rounded to the nearest kip as specified in ASTM F3125 for Grades A325 and A490. *Snug tight* is defined as the tightness attained when a power wrench begins to impact solidly or when the bolts are firmly hand tightened with a spud wrench such that the complete area of the connecting surfaces are brought into firm contact with each other. Snug tightening shall progress systematically from the most rigid part of the connection to the free edges, and then the bolts of the connection shall be retightened in a similar systematic manner as necessary until all bolts are simultaneously snug tight and the connection is fully compacted.

Section 407.06(c)3b – Direct Tension Indicators (DTI) is amended by replacing the first paragraph with the following:

Direct Tension Indicators (DTI): Direct tension indicator washers shall be used for all high strength bolts, and installation shall be in accordance with Section 407.06(c)3; however, the indicator washer shall not be considered a substitute for the required hardened washer under the turned element. The indicator washer may be considered a substitute for the hardened washer required under the unturned element when bolts conforming to ASTM F3125, Grade A490 are used with steel conforming to ASTM A709, Grade 36. Direct tension-indicator washers shall not be painted or coated with any epoxy or similar material prior to installation. The normal installation shall consist of the load indicator washer being placed under the unturned bolt head or unturned nut. However, if conditions require installation under the turned bolt portion, a hardened flat washer or nut face washer shall be fitted against the tension-indicating protrusions. Tension-indicating washers shall not be substituted for the hardened washers required with short-slotted or oversized holes but may be used in conjunction with them.

Table IV-3 – Bolt Tension is replaced with the following:

TABLE IV-3		
Bolt Tension		
Bolt Size	Required Min. Bolt Tension (lb.)	
	Grade A325 Bolts	Grade A490 Bolts
1/2	12,000	15,000
5/8	19,000	24,000
3/4	28,000	35,000
7/8	39,000	49,000
1	51,000	64,000
1 1/8	56,000	80,000
1 1/4	71,000	102,000
1 3/8	85,000	121,000
1 1/2	103,000	148,000

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SS412-002020-01

May 11, 2020

VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 412 – WIDENING, REPAIRING, AND RECONSTRUCTING EXISTING STRUCTURES

SECTION 412 – WIDENING, REPAIRING, AND RECONSTRUCTING EXISTING STRUCTURES of the Specifications is amended as follows:

Section 412.03(b)6 – Concrete superstructure surface repair is amended by replacing the second paragraph with the following:

The Contractor shall place 2 x 2-W1.4 x W1.4 welded wire fabric over the entire patch area where 2 inches or more of existing concrete is removed. The welded wire fabric shall be tied to reinforcing steel where possible. If reinforcing steel is not exposed or if the steel has a spacing greater than 18 inches, the welded wire fabric shall be anchored to expansion bolts at least 3/8 inch in diameter, which the Contractor shall place along the edges of the patch. The expansion bolts shall be spaced not more than 18 inches apart and shall be embedded at least 2 inches into the concrete. The minimum thickness of repair material over reinforcing steel, including expansion bolts and welded wire fabrics, shall be 2 inches unless otherwise specified.

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SS512-002020-02

September 22, 2020

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 Flagging 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.

Section 512.03(a) – Temporary (Construction) Signs is replaced with the following:

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Temporary (Construction) Signs: The Contractor shall furnish, install, remove, relocate, and maintain temporary signs and sign panels necessary for prosecution of the work. Installation shall be in accordance with Section 701. The Contractor shall also furnish and install those signs not listed in the *VWAPM* that may be required by the Engineer.

Signs shall be fabricated in accordance with the *MUTCD* and *VWAPM*. 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 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 sequence 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 Department's Approved Lists for NCHRP-350 or MASH Approved Products. 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 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.

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

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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.

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.

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.

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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.

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.

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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), and Type E (non-reflective black removable tape).

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.

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.

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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:

- 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.

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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 300 feet in length.
 - The temporary markings are planned for at least 15 days of use.

Type D, Class III contrast markings are not required for any markings that are parallel to and within two feet of existing guardrail or other longitudinal barrier.

4. **Type E pavement markings** shall be used to cover existing markings in accordance with paragraph (l) herein.
5. **Temporary pavement markers** shall be installed with temporary pavement markings in accordance with paragraph (m) herein.

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.

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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 Raised Pavement Markers is replaced with the following:

Temporary Raised Pavement Markers shall be installed with temporary pavement markings where required by the VWAPM and where directed by the Engineer. Temporary raised pavement markers shall not be used with Type E markings.

Temporary raised pavement markers shall be installed at the spacing required by the VWAPM, and as shown on Standard Drawing PM-8. . The Contractor may install two one-way markers instead of each two-way marker at no additional cost to the Department.

Temporary raised pavement markers shall be installed with a hot applied bitumen adhesive, except epoxy may be used on hydraulic cement concrete roadways and non-final surfaces of asphalt concrete roadways. Pavement damage caused by removing markers shall be repaired in kind by the Contractor at no additional cost to the Department.

The Contractor shall replace damaged, ineffective, or missing temporary raised pavement markers upon notification by the Engineer at no additional cost to the Department. Markers damaged by the Department's snow removal operations or other maintenance and construction operations, however, will be paid for at the contract unit price.

Section 512.03(p) – Construction (Temporary) Pavement Message and Symbol Markings is replaced with the following:

Construction (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.

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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 Approved Lists for NCHRP 350 or MASH Approved Products. The Contractor shall provide a certification letter stating the brands and models of Type III 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 NCHRP Report 350, Test Level 3, 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.

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.

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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.

If the Truck/Trailer-mounted attenuator is impacted, resulting in damage that causes the unit to be ineffective, all work requiring the use of the Truck/Trailer-mounted attenuator shall cease until such time that repairs can be made or the Contractor provides another acceptable unit.

Section 512.03(s) – Portable Changeable Message Signs is amended to replace the second and third paragraphs with the following:

The sign shall be capable of sequentially displaying at least 2 phases of 3 lines of text each with appropriate controls for selection of messages and variable off-on times. Trailer-mounted PCMS shall be capable of displaying 3 lines of 8-character 18-inch text in a single phase, and vehicle-mounted PCMS shall be capable of displaying 3 lines of 8-character 10-inch text in a single phase. Each character module shall at a minimum use a five wide by seven high pixel matrix. The message shall be composed from keyboard entries.

Access to PCMS control mechanisms shall be physically locked at all times when deployed to deter message tampering.

The message shall be legible in any lighting condition. Motorists should be able to read the entire PCMS message twice while traveling at the posted speed.

The sign panel support shall provide for an acceptable roadway viewing height that shall be at least 7 feet from bottom of sign to crown of road.

Section 512.03(w) – Portable Temporary Rumble Strips (PTRS) is replaced as follows:

Portable Temporary Rumble Strip (PTRS):

A PTRS may be made of rubber or recycled rubber. It shall have a recessed, raised or grooved design to prevent movement and hydroplaning. PTRS color shall be in accordance with the VWAPM.

A PTRS shall consist of interlocking or hinged segments of equal length that prevent separation when in use. The combined overall usable length of the PTRS shall be between 10 feet 9 inches and 11 feet. The width of the PTRS shall be 12 to 13 inches. PTRS shall be between 5/8 inch and 1.0 inch in height. The weight of each roadway strip shall be between 100 and 120 pounds. The leading and departing edge taper shall be between 12 and 15 degrees.

Each roadway length of the PTRS shall have either a minimum of one cutout handle in the end of the rumble strip, or an interlocking segment which can be used as a handle for easy deployment or removal.

The manufacturer of the PTRS shall provide a signed affidavit that states the PTRS is able to withstand being run over by an 80,000 pound vehicle and retain its original placement with minor incidental movement of 6 inches or less during an 8 hour deployment. Incidental movement of the

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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.

Section 512.04 – Measurement and Payment is amended to replace the thirteenth 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 twentieth 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 29th 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.

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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VIRGINIA DEPARTMENT OF TRANSPORTATION
2020 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 520 – WATER AND SANITARY SEWER FACILITIES

April 14, 2020

SECTION 520 – WATER AND SANITARY SEWER FACILITIES is amended as follows:

Section 520.02(r) – Flowable backfill is inserted as follows:

Flowable backfill shall conform to Section 249 and 509.

Section 520.03 Procedures is amended to replace the first paragraph with the following:

The Contractor shall be responsible for anticipating and locating underground utilities and obstructions in accordance with Section 105.08. In areas where the utility owner's specifications conflict with the Contract, the utility owners' specifications shall govern.

Section 520.03 – Procedures is amended to replace the fourth paragraph with the following:

The Contractor shall abandon existing water and sewer lines and appurtenances and manholes not required in the completed system as directed by the Engineer. Abandoned materials shall become the property of the Contractor, unless otherwise noted on the plans, upon satisfactory replacement with the new installation. The Contractor shall clean abandoned pipe that is not removed of debris and plug it with Class A3 concrete at open ends if the utility is less than 8 inches inside diameter. If the abandoned pipe is 8 inches inside diameter or greater, the Contractor shall clean the pipe of debris and fill it entirely with Class A3 concrete or flowable backfill.

Section 520.06 – Measurement and Payment is amended by inserting the following after the fifteenth paragraph:

Concrete will be measured in cubic yards and will be paid for at the Contract cubic yard price. This price shall include furnishing and placing of concrete not included in other pay items, and installing plugs.

Flowable Backfill will be measured and paid for in accordance with Section 509.

Section 520.06 – Measurement and Payment is amended by revising the Pay Item Table as follows:

The following pay item is removed:

Pay Item	Pay Unit
Flowable Backfill	Cubic Yard

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SS704-002020-01

September 3, 2020

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 fourth through tenth paragraph with the following:

If the Contractor cannot have permanent pavement markings installed within the time limits specified, the Contractor shall install and maintain temporary pavement markings within the same time limits at no additional cost to the Department until the permanent pavement markings can be installed. Installation, maintenance, and removal or eradication of temporary pavement markings shall be according to Section 512.

The Contractor may mark the locations of proposed permanent markings on the roadway by installing premarking materials. Premarkings may be accomplished by installing removable tape, chalk, or lumber crayons, except pavement markings such as stop lines, crosswalks, messages, hatching, etc., shall be premarked using chalk or lumber crayons. Premarkings for yellow markings may be white or yellow. Premarkings for other colors shall be white.

When tape is used as a premarking material, premarking shall consist of 4- inch by 4-inch-maximum squares or 4-inch-maximum diameter circles spaced at 100-foot minimum intervals in tangent sections and 50-foot minimum intervals in curved sections. At locations where the pavement marking will switch colors (e.g., gore marking) the ends of the markings may be premarked regardless of the spacing.

When the Contractor uses chalk or lumber crayon as a premarking, the entire length of the proposed pavement marking may be premarked.

Premarkings shall be installed so their installation will not affect the adhesion of the permanent pavement markings. When removable tape is used as the premarking material and the lateral location of such premarkings to location of the final pavement markings exceeds 6 inches, the tape shall be removed at no additional cost to the Department.

The Contractor shall exercise caution and protect the public from damage while performing pavement marking operations. The Contractor shall be responsible for the complete preparation of the pavement surface, including, but not limited to, removing dust, dirt, loose particles, oily residues, curing compounds, concrete laitance, residues from eradication, and other foreign matter immediately before installing pavement markings. The pavement surface shall be clean and dry at the time of pavement marking installation and shall be tested in accordance with VTM 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.

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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 and retroreflective optics shall be applied to the entire surface of the marking at the minimum rate of 6 pounds per gallon of paint, unless specified otherwise in the Department's Approved List 20 for the selected pavement marking product.

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 paragraph with the following:

Thermoplastic shall not be applied over existing pavement markings of materials other than paint or thermoplastic, unless the existing marking is 90 percent percent worn away or eradicated. When applying thermoplastic over existing paint or thermoplastic, the existing marking shall first be swept or eradicated to the extent necessary to ensure that the surface of the existing marking is clean, chalk free (not powdery), and well adhered.

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.

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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.

Section 704.03(a)2f – Polyurea (Class VII) is amended by replacing the second paragraph with the following:

Polyurea marking material shall be applied at a wet film thickness of 20 mils (± 1 mil). Glass beads and retroreflective optics shall be applied at the rate specified in the Department's Approved List 74 for the specific polyurea product.

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		Traffic paint	15 ± 1 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.

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CONTRACT ID. NO.: CM321PMB117191

Section 704.03(b) – Pavement messages and symbols markings is amended to replace the second paragraph with the following:

Surface temperature at time of application shall be in accordance with manufacturer's installation instructions. If the installation instructions do not specify minimum surface temperature, then the markings shall not be installed unless the surface temperature at time of application is 50°F or higher. Surface temperature requirements shall not be considered met if the temperature is forecasted to drop below the minimum within two hours of application. The Contractor may heat the pavement for a short duration to dry the pavement surface and bring the surface temperature to within the allowable temperatures for pavement marking installation, at no extra cost to the Department. Heat torch temperatures shall not exceed 300°F. The Contractor shall monitor pavement temperature to ensure it does not rise above 120°F at any time. Any damage to the pavement shall be promptly repaired at no extra cost to the Department.

Message and symbol markings include, but shall not be limited to, those detailed in Standard Drawing PM-10.

The sizes and shapes of symbols and characters shall match the size and shape specified in Standard Drawing PM-10 or elsewhere in the Contract. Hand-drawn or "stick" symbols or characters will not be allowed.

Section 704.03(d)1 – Snowplowable raised pavement markers is replaced as follows:

Snow-plowable raised pavement markers shall not be used.

Section 704.03(d)2 – Raised Pavement Markers is renamed **Nonplowable Raised Pavement Markers** and is replaced with the following:

Nonplowable raised pavement markers shall be bonded to the surface in accordance with the manufacturer's installation instructions. The bonding material shall be from the Department's Approved List 22 for the specific marker.

Section 704.04—Measurement and Payment is amended 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

ORDER NO.: 348
CONTRACT ID. NO.: CM321PMB117191

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
LIMITATION OF OPERATIONS
(LYNCHBURG DISTRICT)

November 19, 2020

I. Description

These Specifications cover limitations imposed by the Department upon the Contractor's operations to accommodate traffic.

II. Lane Closures

The Contractor shall submit temporary traffic control plans that deviate substantively from the VWAPM typical applications to the Engineer for review before implementing the closure.

The Contractor shall not conduct operations requiring lane closures during inclement weather as determined by the Engineer.

The Contractor shall provide the Engineer a tentative lane closure schedule a minimum of two weeks before beginning the planned work.

Confirmation shall be provided to the Engineer twenty-four (24) hours before any scheduled lane closure.

Complete road closures (15 minutes maximum) require seventy-two (72) hours advance confirmation for coordination. Once a closure is in place, work shall commence immediately and shall progress continually until completed or to a designated time.

Any change to the allowable time periods herein requires approval in accordance with the Special Provision Copied Note for Contractor Proposed Alternative Traffic Control Plans.

Restoration of traffic is defined as opening all travel lanes to traffic including the completing all construction work, removing or relocating all work zone traffic control devices and signs to their approved site as determined by the Engineer, and removing all workers, materials, and equipment from the roadway.

If the Contractor does not restore traffic lanes within the allowable time limits as defined herein, the Contractor will not be allowed further lane closures until:

- The reasons for the failure to restore traffic are evaluated.
- A formal submission discussing the reasons for the failure to restore traffic lanes before the end of the closure time limits allowed by the Contract closure restrictions and the proposed corrective measures are provided to the Engineer within two (2) days of the occurrence.
- A meeting with the District Construction Engineer or designee shall be required before 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 the failure to restore all lanes of traffic within the time limits herein. No modifications to the Contract time limit will be considered or granted or for any associated delays.

ORDER NO.: 348
CONTRACT ID. NO.: CM321PMB117191

The Engineer may change any or all of the work hours 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 when emergency situations dictate. Closures shall be removed at the request of the Engineer or other jurisdictional authority (authorities) when required to expedite emergency operations or address other unforeseen events.

III. 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 from either direction or produce undue glare to property owners.

Work site lighting may be accomplished by using any combination of portable floodlights or standard equipment lights, etc. that will provide 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 these requirements.

The cost of providing lighting of the work site will be considered incidental and shall be included in the price of other Contract work.

The Contractor shall provide sufficient fuel, spare lamps, generator, etc. to maintain the work site lighting.

The Contractor shall obtain all noise permits from the locality where the work is being performed as applicable.

Sound levels resulting from the Contractor's operations shall conform to Section 107.16; (b), 3. of the Specifications and comply with all applicable Federal, State, and Local regulations.

The Contractor shall use padding and shielding or locate mechanical and electrical equipment to minimize noise generated by work and lighting operations as directed by the Engineer.

The Contractor shall have a superintendent present during nighttime operations who will control all operations involved and ensure that lights are in working order, are properly installed, and monitored. The superintendent shall maintain contact with the Engineer and shall ensure that all actions required to correct any noted problems are taken promptly.

IV. PERIODS WHEN LANE OR SHOULDER CLOSURES ARE NOT PERMITTED

Lane closures shall not be implemented Saturday and Sunday without written approval from the Engineer.

ORDER NO.: 348
CONTRACT ID. NO.: CM321PMB117191

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
THERMOPLASTIC PAVEMENT MARKINGS
WITH WET REFLECTIVE OPTICS (TYPE B, CLASS X2)

January 12, 2021

I. Description

This work shall consist of furnishing and installing thermoplastic pavement markings at 95-105 mils thickness and Wet Reflective Optics, in accordance with these specifications, the plans, and as directed by the Engineer.

II. Materials

The Contractor shall use an approved inventory tracking system for all materials received from the manufacturer as per Section 704.02 of the Specifications.

a) Thermoplastic Binder

Thermoplastic pavement marking material shall be as per Section 246.03(b) of the Specifications, and shall be selected from Approved Products List No. 43. Hydrocarbon thermoplastic shall not be used.

b) Wet Reflective Optics Bead Package

The Wet Reflective Optics Bead Package shall be a double-drop bead system that is designed to provide the minimum initial retroreflectivity in Table 1 when installed in thermoplastic 90-105 mils thick: **Lead & Arsenic**

TABLE 1
Minimum Retroreflectivity Properties

TYPICAL INITIAL RETROREFLECTIVITY AVERAGE VALUES	(mcd (ft.-2) (fc-1) **	(mcd (ft.-2) (fc-1) **
	White	Yellow
DRY (ASTM E1710*)	450	300
Wet Recovery (ASTM E2177*)	250	150
Wet Continuous (ASTM E2832*)	150	125

*Or latest applicable ASTM

**Metric Equivalent mcd (m-2)(lux-1)

One drop shall consist of Wet Reflective Optics – 3M All Weather Elements, Potters Industries Visimax, or equal optics package designed to provide durable wet recovery and wet continuous retroreflectivity when installed in thermoplastic pavement markings. Wet Reflective Optics shall have a refractive index of 1.90 or greater per ASTM E 1967-98 or latest procedure.

The other drop shall consist of glass beads of a size recommended by the manufacturer. The glass beads shall be from one of the manufacturers on the Virginia Glass Bead Approved List (Materials Approved List #76).

ORDER NO.: 348
CONTRACT ID. NO.: CM321PMB117191

The application rates for the Wet Reflective Optics and glass beads shall be as recommended by the manufacturer.

For both Wet Reflective Optics and glass beads, the Contractor shall provide documentation that the products conform to AASHTO M247 lead & arsenic requirements as per Section 234.02 of the Specifications.

The Contractor shall submit to the Engineer the manufacturer's specifications and installation instructions for the Wet Reflective Optics Bead Package a minimum of 60 days prior to installation.

III. INSTALLATION AND QUALITY CONTROL

Thermoplastic Pavement Markings with Wet Reflective Optics shall be installed in accordance with Section 704.03 of the Specifications, the Contract documents, the thermoplastic and bead manufacturers' installation instructions, and as required below. The Contractor shall provide the manufacturer's installation instructions to the Engineer for review prior to installation.

Thermoplastic pavement marking material shall be installed at a thickness of 95-105 mils above the riding surface, whether dense or open graded surface. The Wet Reflective Optics Bead Package shall be installed at the rate recommended by the manufacturer.

Thickness and bead application rate shall be tested as per VTM-94 as per Section 704.03 of the Specifications, with modifications to verify that bead flow rate is as per the manufacturer's recommendations.

The Contractor shall have a manufacturer's representative present during the first day of pavement marking materials to be installed under the contract.

When installation or quality control problems occur during application, the contractor shall stop all application of the pavement markings and develop a plan for correcting the problems before proceeding with installation.

IV. MEASUREMENT AND PAYMENT

Type B, Class X2 Pavement Markings will be measured in linear feet and will be paid for at the contract unit price per linear foot for the width specified. This price shall include all surface preparation, premarking, furnishing, installing, quality control tests, daily log, guarding devices, beads, and wet reflective optics.

Payment will be made under:

Pay Item	Pay Unit
Type B, Class X2 Pavement Markings (width)	Linear Foot

TIER 1 PROJECT
"NO PLAN" RAAP (CONSTRUCTION & MAINTENANCE) PROJECTS
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION: _____ **MAINTENANCE:** X

DISTRICT: Lynchburg CITY/COUNTY: Campbell UPC NO.: 117191; 17002;

FUNCTIONAL CLASS Freeway and Expressway FHWA 534 DATA 32105 TYPE CODE MAIN

ROUTE: Various PROJ. PM3B-963-F21, N501 FEDERAL NO.: PM03(371)

FROM: Various TO: Various

LENGTH (FEET): _____ MILES _____

TOPO: _____ DESIGN SPEED (MPH): _____ VPD (YEAR) _____

PROJECT MGR: Kevin Chisnell R/W DONATION: N/A

Utilities NO and/or Railroad YES are involved in the construction of this project.

This project is to be constructed in accordance with the Department's 2020 Road and Bridge Specifications, 2016 Road and Bridge Standards, 2009 MUTCD, 2011 Virginia Supplement to the MUTCD, 2011 Virginia Supplement to the MUTCD, 2011 Virginia Work Area Protection Manual and as amended by contract provisions and the complete plan assembly.

Design features relating to construction or to regulation and control of traffic may be subject to change as deemed necessary by the department.

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION	
11/19/20	Robert F. Guercia, P.E.
DATE	DISTRICT PLANNING AND INVESTMENT MANAGER
11/19/20	Robert F. Guercia, P.E.
DATE	DISTRICT PROJECT DEVELOPMENT ENGINEER
APPROVED FOR CONSTRUCTION	
11/19/20	Christopher L. Winstead, P.E.
DATE	DISTRICT ENGINEER/ADMINISTRATOR

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TRANSPORTATION MANAGEMENT PLAN Type A

Project No. PM3B-963-F21, PM3B-015-F21; UPC: 117191 / 117002

Pavement Resurfacing – Plant Mix

INTRODUCTION

The purpose of this project is to employ a corrective maintenance application by placement of a hot mix asphalt. The work is necessary as part of Lynchburg District's pavement management plan to achieve and maintain pavement performance targets in Campbell and Appomattox Counties.

Annual Average Daily Traffic (AADT) varies by route. Refer to the site document included in the Contract for specific routes and Traffic Groups. Types of traffic include trucks, school buses, daily commuters, travelers and residents.

TEMPORARY TRAFFIC CONTROL PLAN

General Notes

1. During the Work the Temporary Traffic Control (TTC) work zone shall be established and maintained in accordance with the 2011 Edition of the Virginia Work Area Protection Manual (VWAPM), Revision 2 – September 1, 2019, Part 6 of the 2009 Edition of the Manual on Uniform Traffic Control Devices (MUTCD) Revision No. 1 and 2 incorporated, dated May 2012, and 2011 Virginia Supplement to the MUTCD (Revision 1), to include revisions except otherwise specified in the Contract.
2. The Contractor shall store construction equipment and/or materials beyond the clear zone and dynamic deflection area of all physical barriers. There are no identifiable areas within existing Right-of-Way for the Contractor to store equipment and/or materials.
3. All temporary traffic control devices shall be furnished, installed and maintained by the Contractor.
4. Temporary traffic control devices no longer in use or in conflict with the Work shall either be covered or removed by the Contractor.
5. Emergency responder vehicles shall be given priority during the Work.
6. Access to all connections and/or entrances shall be provided and maintained during the Work.

7. During the Work travel lanes and shoulders will be affected intermittently on all routes. Alternate routes may be available and flaggers will be utilized to control traffic.
8. The work zone shall be maintained in accordance with Section 108.02 and Section 512 of the 2020 Road & Bridge Specifications, the Special Provision for LIMITATION OF OPERATIONS (LYNCHBURG DISTRICT). The following temporary typical applications from the 2011 Virginia Work Area Protection Manual, Revision 2–September 1, 2019 will be used:
 - a. TTC-15.2 – Short Duration Operation on a Multi-Lane Roadway
 - b. TTC-16.2 – Outside Lane Closure on a Multi-Lane Roadway
 - c. TTC-17.2 – Inside Lane Closure on a Multi-Lane Roadway
 - d. TTC-23.2 – Lane Closure Operation on a Two-Lane Roadway Using Flaggers
 - e. TTC-26.2 – Lane Closure Operation – Near Side of an Intersection
 - f. TTC-27.2 – Lane Closure Operation – Far Side of an Intersection
 - g. TTC-28.2 – Lane Closure Operation at an Intersection
 - h. TTC-29.2 – Turn Lane Closure Operation
 - i. TTC-56.2 – Work in the Vicinity of a Highway-Rail Crossing
 - j. TTC-57.2 – End of Day Signing for Partial Paving Operations on a Multi-Lane Roadway
 - k. TTC-58.1 – End of Day Signing for Full Paving Operations on a Multi-Lane Roadway
 - l. TTC-59.1 – End of Day Signing for Paving Operations on a Two-Lane Roadway
 - m. TTC-67.1 – Lane Closure Operation Through an Unsignalized Intersection
 - n. TTC-68.0 – Lane Closure Operation for Flagging Operations on an Intersecting Roadway

or other typical applications as needed and/or approved by the Engineer.

9. Traffic shall not be stopped on a high volume roadway (average daily traffic of 500 or more vehicles per day) for more than 8 minutes or 12 minutes for a low volume roadway (average daily traffic of less than 500 vehicles per day) unless otherwise directed by the Engineer.
10. Measures shall be taken to ensure adequate sight distances during the Work are maintained; traffic control devices, construction equipment, material storage, or any other obstacle shall not interfere with sight distances in the vicinity of intersections (intersecting/crossing routes) and/or entrances.
11. Minimum lane widths shall be 10 feet.
12. Restrictions in these notes will apply except in cases where the Engineer determines they are not in the best interest of the Department and/or travelling public.

Special Details

1. Work on Route 460 between Mile Post 11.89 (0.45 miles west of Concord Turnpike) and Mile Post 14.95 (0.26 miles east of Rte. FR793) shall not be permitted between the hours of 6:00 AM and 8:00 PM Monday – Friday.
2. There are no other special details for this project which are not specifically addressed in this contract by the Special Provision for LIMITATION OF OPERATIONS (LYNCHBURG DISTRICT) included in the Contract Documents and/or the 2011 Edition of the Virginia Work Area Protection Manual (VWAPM), Revision 2 – September 1, 2019.

PUBLIC COMMUNICATIONS PLAN

A public communications plan is not applicable to this project since the traffic volume doesn't exceed the minimum number of vehicles/hour/lane or delay times established by the District Traffic Engineer for lane closure periods.

TRANSPORTATION OPERATIONS PLAN

1. The process to notify the Regional Traffic Operations Center (TOC) of planned lane closures on Virginia Traffic Information Management System (VaTraffic) is:
 - a. The Contractor shall submit planned lane closure information to VDOT Construction Project Inspector/Manager twenty-four (24) hours in advance.
 - b. The Construction Project Inspector/Manager shall notify the TOC at (540) 375-0170 of all proposed lane closures and/or traffic backups.
 - c. Contractor shall notify the TOC by a method or system specified by VDOT thirty (30) minutes before a planned or approved lane, road or shoulder closure is installed, and within thirty (30) minutes after the closure is removed.
 - d. TOC operator will enter closure data in VaTraffic and monitor lane closure information
2. The Contractor shall follow the Special Provision for Lane Closure Coordination (LCC)/Lane Closure Implementation (LCI).
3. Local emergency contacts are as follows.
 - a. Virginia State Police (Campbell County) – (434) 946-7101
 - b. Virginia State Police (Appomattox County) – (434) 352-7128
 - c. Appomattox County Sheriff – (434) 352-2666
 - d. Campbell County Sheriff – (434) 332-9580
 - e. City of Lynchburg Police Department – (434) 455-6050
 - f. Emergency 911 Center – 911

- g. Haz-Mat Center (if spill involved) – 911
- 4. Procedures to respond to traffic incidents that may occur in the Work Zone:
 - a. Contractor to notify the Virginia State Police and VDOT Construction Project Manager/Inspector.
 - b. Depending upon severity of the incident and need for incident management, the Contractor shall cease all Work.
 - c. Upon arrival on scene, the Virginia State Police or local law enforcement shall determine the incident management response necessary in directing the safe handling of traffic around the incident.
 - d. The Construction Project Inspector will notify the Construction Project Manager and/or Residency Administrator of the incident, take photos, and obtain video, if necessary, of the Contractor's work zone.
- 5. Incident Notification Process – in the event of an incident occurring within the work zone, the Contractor shall notify:
 - Contractor to call:
 - a. Project Maintenance of Traffic Coordinator (Project Inspector): To Be Determined (TBD)
 - b. Area Construction Engineer: Lindsey S Hodges, P.E., (434) 856-8143
 - c. Construction Project Manager: Larry Nash (434) 942-9256
 - d. District Work Zone Safety Coordinator: Danny E. Cruft (434) 856-8160
 - e. District Traffic Engineer: Keith Rider, P.E. (434) 856-8145
 - f. District Public Affairs Manager: Paula Jones (434) 856-8176
 - g. Appomattox Residency Administrator: Robert G. Brown (434) 352-6674
- 6. Virginia State Police (VSP) or local law enforcement will take control of the incident and direct its clearing and restoration to pre-incident traffic conditions.
- 7. Virginia State Police or local law enforcement report of the incident shall be reviewed by the Area Construction Engineer to determine if any modification(s) to the Temporary Traffic Control Plan is necessary. If it is determined necessary to alter the plan, a meeting will be held with the Contractor, VDOT Construction project personnel, Traffic Engineering and Safety, and VSP (if deemed necessary) to discuss modifications to and implementation of an improved temporary traffic control plan.
- 8. In the event of any unexpected, adverse traffic delays or backups related to construction staging activities, the Contractor shall notify the Traffic Operations Center (TOC) at (540) 375-0170. The TOC systems operator will enter data into the 511 system and notify the following Department staff, which include but are not limited to: Area Construction Engineer, Project Maintenance of Traffic Coordinator, Construction Project Manager/Inspector, Residency Administrator, District Work Zone Safety Coordinator, District Traffic Engineer, and Public Affairs Manager.

TRAFFIC BACKUP NOTIFICATION

1. Emergency: 911
2. Project construction staff shall notify the Traffic Operations Center (TOC) at (540) 375-0170 of any lane and/or road closures and/or traffic backups. TOC will utilize available ITS systems to monitor the work zone(s) and adjacent areas, make entries into VaTraffic, and utilize assets, such as permanent and mobile variable message signs with CDMA modems, to advise motorists of all adverse impacts to traffic flow.
3. TOC will be responsible for intra-agency notifications to entities, such as, but not limited to, the Virginia State Police (VSP), Local 911, and other affected agencies.
4. A review of all major incidents as determined by the Incident Management Coordinator shall be accomplished within 48 hours of clearance of the incident. At a minimum, VDOT Construction and Traffic Engineering, Contractor or designee, Emergency First Responders, and Virginia State Police should be in attendance.

GENERAL NOTES

1. All pavement markings shown in the Contract are schematic only since actual location(s) and application(s) of all pavement markings shall be in accordance with Section 704 of the 2020 VDOT Road and Bridge Specifications, the 2016 VDOT Road and Bridge Standards, the 2009 Edition of the Manual on Uniform Traffic Control Devices (MUTCD), the 2011 Virginia Supplement to the MUTCD and as amended by contract provisions and contractual documents.
2. All proposed pavement markings shall match existing conditions along all routes, except for those locations specifically detailed within the contractual documents or addressed at the project Pre-Construction Meeting. It shall be the Contractor's responsibility, in accordance with the contract Special Provision for SECTION 704—PAVEMENT MARKINGS AND MARKERS, to ensure that all pavement markings are reviewed and documented prior to any Work which will obscure or eradicate existing pavement markings.
3. All eradication of existing pavement markings required to complete Work under this contract, including the collection and disposal of eradication residue, shall be performed in accordance with Section 512.03(l) of the 2020 Road and Bridge Specifications, and as directed by the Engineer.
4. All temporary signs not mounted on wooden and/or steel tube posts, portable sign supports and weights, and vehicle mounted signs, their supports and mounting hardware required for this project will not be measured for payment; all costs for providing such signs shall be included with other items of work.

Commonwealth of Virginia -- Department of Transportation
 Maintenance Division

District: Lynchburg

Date: 11/18/2020

Page 1 of 9

Schedule: PM-3B-21

Campbell Co.

State Project Number: PM3B-015-F21, N501; PM3B-963-F21, N501

Route:	29 (R-VA US00029NB)	Milepost From:	8.075	0.325 Mile South Rte 906	
Subdivision:		Lane:	N	PCN: M321PMB117002	UPC: 117002
Traf Grp:	XVI	Milepost To:	9.704	0.094 Mile North Rte 912	
From Intersection:	8.40 Miles: Eastward Dr PR/NP (Campbell Cnty), SC-906E/W (Campbell Cnty)				
From Offset:	-0.325MI	From X/Y Coordinates:	37.17741, -79.20564		
To Intersection:	9.61 Miles: Castle Craig Dr PR/NP (Campbell Cnty), SC-912N/S (Campbell Cnty)				
To Offset:	0.094MI	To X/Y Coordinates:	37.20079, -79.20322		

Public Comments:

Street Names: Wards Rd

Item Code & Description	Detail	Len(mi)	Wid(ft)	Dep(in)	Gal/SqYd	Lbs/SqYd	Quantity	UOM
10103 - AGGR. MATL. NO. 25 OR 26	2' each as needed	1.63	4	1.5			315.57	TON
10417 - TACK COAT	Mainline	0					2869	GAL
10417 - TACK COAT	Connections, crossovers and turn lanes	0					750	GAL
15309 - NS PAVEMENT Liquid Asphalt Coating (Pavement Marker Groove)	Sealing Pavement Markers						108	SY
16340 - ASPH. CONC. TY. SM-9.5D	Connections, crossovers and turn lanes	0					400	TON
16340 - ASPH. CONC. TY. SM-9.5D	Mainline	1.63	30	1.5		180	2581.92	TON
16522 - FLEXIBLE PAVE.PLANING 0"-2"	Mainline	1.63	30	1.5			28688	SY
16522 - FLEXIBLE PAVE.PLANING 0"-2"	Connections, crossovers and turn lanes	0					8250	SY
54034 - TY B CL I PVMT LINE MRKG 6" - White	Edgeline/ Skips, Left/Right turn lanes						10998	LF
54034 - TY B CL I PVMT LINE MRKG 6" - Yellow	Edgeline						8606	LF
54219 - INLAID PAVEMENT MARKER ASPHALT - White							108	EA
54428 - TEMP. PVMT MRKG, TY. A, 4" - White	Lane division						2152	LF

Notes:

Miscellaneous Notes

Participating / Rural Other
 Principle Arterial

Rideability Pay Factor is in effect for this item.

State Project Number: PM3B-015-F21, N501; PM3B-963-F21, N501

Route: 460 (R-VA US00460WB)	Milepost From: 11.89	0.45 Mile West Concord Turnpike	
Subdivision:	Lane: W	PCN: M321PMB117191	UPC: 117191
Traf Grp: XVII	Milepost To: 14.95	0.26 Miles East Rte FR-793	
From Intersection: 12.34 Miles: Concord Tpk PR/NP (Lynchburg City)			
From Offset: -0.45MI	From X/Y Coordinates:		37.38503, -79.10829
To Intersection: 14.69 Miles: Breeze Hill Ln PR/NP (Campbell Cnty), FR-793E/W			
To Offset: 0.26MI	To X/Y Coordinates:		37.38531, -79.0547

Public Comments:

Street Names: Richmond Hwy

Item Code & Description	Detail	Len(mi)	Wid(ft)	Dep(in)	Gal/SqYd	Lbs/SqYd	Quantity	UOM
10103 - AGGR. MATL. NO. 25 OR 26	2" each side as needed	3.06	4	2			789.89	TON
10417 - TACK COAT	Mainline	0					5843	GAL
10417 - TACK COAT	Paved Shoulder						900	GAL
10417 - TACK COAT	Crossovers, Turn Lanes, Connections, Gore Areas,	0					960	GAL
15309 - NS PAVEMENT Liquid Asphalt Coating (Pavement Marker Groove)	Sealing Pavement Markers						273	SY
16360 - ASPH. CONC. TY. SM-12.5E	Paved Shoulder	0					1000	TON
16360 - ASPH. CONC. TY. SM-12.5E	Crossovers, Turn Lanes, Connections, Gore Areas	0					1200	TON
16360 - ASPH. CONC. TY. SM-12.5E	Mainline	3.06	28	2		230	5780.54	TON
16522 - FLEXIBLE PAVE. PLANING 0"-2"	Mainline	3.06	28	2			50265.6	SY
16522 - FLEXIBLE PAVE. PLANING 0"-2"	Crossovers, Turn Lanes, Connections, Gore Areas,	0					9582	SY
16522 - FLEXIBLE PAVE. PLANING 0"-2"	Paved Shoulder	0					8621	SY
54048 - TY.B CL.II PAVE. LINE MARK. 24" - White	Hatching Marks						530	LF
54048 - TY.B CL.II PAVE. LINE MARK. 24" - White	Stop Bars						132	LF
54077 - TY.B CL.VI PVM T LINE MRKG 8" - White	White skips						415	LF
54077 - TY.B CL.VI PVM T LINE MRKG 8" - Yellow							265	LF
54078 - TY.B CL.VI PVM T LINE MRKG12" - White							1490	LF
54078 - TY.B CL.VI PVM T LINE MRKG12" - White							420	LF
54100 - NS PAVEMENT MARKING - White Type B, Class X2 Pavement Markings - 6"	Edgeline ,skips and turn lanes						25060	LF
54100 - NS PAVEMENT MARKING - Yellow Type B, Class X2 Pavement Markings - 6"	Edgeline						15755	LF
54219 - INLAID PAVEMENT MARKER ASPHALT - White							273	EA
54428 - TEMP. PVM T MRKG, TY. A, 4" - White	Lane Division						4040	LF
54440 - TEMP. PVM T MRKG, TY. A, 24" - White	Temp. stop bars						132	LF

State Project Number: PM3B-015-F21, N501; PM3B-963-F21, N501

54457 - TEMP.PVMT SYMB MKG SNGL TURN ARROW TY A	Temp. turn arrows	6	EA
54575 - PVMT SYMB MRKG SGL TURN ARR. TY B CL II - White	Single Turn Arrows	6	EA

Notes:

Miscellaneous Notes

Participating/ Other Principal
Arterial / MPO

All work must be completed between the hours of:

8:00 pm and 6:00 am

Miscellaneous Notes

Part of the west section falls
in the City of Lynchburg

Route: 501 (R-VA US00501NB)	Milepost From: 4.901	0.181 Mile North Rte 917
Subdivision:	Lane: B	PCN: M321PMB117002
Traf Grp: XII	Milepost To: 5.748	UPC: 117002
From Intersection: 4.72 Miles: Railview Rd PR/NP (Campbell Cnty), SC-917N/S (Campbell Cnty)		
From Offset: 0.181MI	From X/Y Coordinates: 37.08886, -78.98859	
To Intersection: 5.89 Miles: Swinging Bridge Rd PR/NP (Campbell Cnty), Whipping Creek Rd PR/NP (Campbell Cnty), SC-605E/W (Campbell Cnty)		
To Offset: -0.142MI	To X/Y Coordinates: 37.10067, -78.99297	
Public Comments:		

Item Code & Description	Detail	Len(mi)	Wid(ft)	Dep(in)	Gal/SqYd	Lbs/SqYd	Quantity	UOM
10103 - AGGR. MATL. NO. 25 OR 26	As needed 2' each side	0.847	4	2			218.64	TON
10417 - TACK COAT	Mainline						1391	GAL
10700 - RUMBLE STRIP CYLINDRICAL ASPHALT							4488	LF
10701 - LIQ.ASPH. RUMBLE STRIP COATING							625	SY
15309 - NS PAVEMENT	Sealing Pavement Markers						56	SY
Liquid Asphalt Coating (Pavement Marker Groove)								
16340 - ASPH. CONC. TY. SM-9.5D	Mainline	0.85	28	1.5		180	1256.64	TON
16522 - FLEXIBLE PAVE.PLANING 0"-2"	Mainline	0.85	28	1.5			13913.39	SY
54032 - TYPE B CLASS I PVMT LINE MRKG 4" - Yellow	Centerline						5400	LF
54034 - TY B CL I PVMT LINE MRKG 6" - White	Edgelines						8945	LF
54219 - INLAID PAVEMENT MARKER ASPHALT - Yellow							56	EA
54428 - TEMP. PVMT MRKG, TY. A, 4" - Yellow	Lane Division						5400	LF

Notes:

Miscellaneous Notes

Participating/Minor Arterial

State Project Number: PM3B-015-F21, N501; PM3B-963-F21, N501

Route: 501 (R-VA US00501NB)	Milepost From: 4.115	0.165 Mile North Rte 633
Subdivision:	Lane: B	PCN: M321PMB117002 UPC: 117002
Traf Grp: XII	Milepost To: 4.9	0.181 Mile North Rte 917
From Intersection: 3.95 Miles: Overlap Rte; Epsons Rd PR/NP (Campbell Cnty), SC-633E/W (Campbell Cnty)		
From Offset: 0.165MI	From X/Y Coordinates:	37.0778, -78.98508
To Intersection: 4.72 Miles: Railview Rd PR/NP (Campbell Cnty), SC-917N/S (Campbell Cnty)		
To Offset: 0.18MI	To X/Y Coordinates:	37.08885, -78.98859
Public Comments:		

Item Code & Description	Detail	Len(mi)	Wid(ft)	Dep(in)	Gal/SqYd	Lbs/SqYd	Quantity	UOM
10103 - AGGR. MATL. NO. 25 OR 26	As needed 2' each side	0.785	4	2			202.63	TON
10417 - TACK COAT							1842	GAL
10417 - TACK COAT	Connections and turn lanes	0					62	GAL
10700 - RUMBLE STRIP CYLINDRICAL ASPHALT							1742	LF
10701 - LIQ.ASPH. RUMBLE STRIP COATING							250	SY
15309 - NS PAVEMENT	Sealing Pavement Markers						46	SY
Liquid Asphalt Coating (Pavement Marker Groove)								
16340 - ASPH. CONC. TY. SM-9.5D	Connections and turn lanes						55	TON
16340 - ASPH. CONC. TY. SM-9.5D	Mainline	0.78	40	1.5		180	1647.36	TON
16522 - FLEXIBLE PAVE.PLANING 0"-2"	Mainline	0.78	40	1.5			18421.33	SY
16522 - FLEXIBLE PAVE.PLANING 0"-2"	Connections and turn lanes	0					618	SY
54032 - TYPE B CLASS I PVMT LINE MRKG 4" - Yellow	Centerline						10500	LF
54034 - TY B CL I PVMT LINE MRKG 6" - White	Edgeline						8315	LF
54048 - TY.B CL.II PAVE. LINE MARK. 24" - White	Stop bar						21	LF
54048 - TY.B CL.II PAVE. LINE MARK. 24" - Yellow	Hatching marks						149	LF
54219 - INLAID PAVEMENT MARKER ASPHALT - Yellow							46	EA
54428 - TEMP. PVMT MRKG, TY. A, 4" - Yellow	Lane division						10500	LF
54440 - TEMP. PVMT MRKG, TY. A, 24" - White	Temporary Stop Bar						21	LF
54457 - TEMP.PVMT SYMB MKG SNGL TURN ARROW TY A	Temporary single left turn arrows						2	EA
54575 - PVMT SYMB MRKG SGL TURN ARR. TY B CL II - White	Single Turn Arrow-Left-Standard (2)						2	EA

Notes:

Miscellaneous Notes

Participating/Minor Arterial

State Project Number: PM3B-015-F21, N501; PM3B-963-F21, N501

Route: 501 (R-VA US00501NB)	Milepost From: 1.42	0.03 Mile North Rte 1116
Subdivision:	Lane: B	PCN: M321PMB117191 UPC: 117191
Traf Grp: XIII	Milepost To: 2.37	0.19 Miles North Rte 928
From Intersection: 1.39 Miles: Carolina Ave PR/NP (Campbell Cnty), SC-1116E/W (Campbell Cnty)		
From Offset: 0.03MI	From X/Y Coordinates: 37.05686, -78.94913	
To Intersection: 2.42 Miles: Sanfacon Rd PR/NP (Campbell Cnty), SC-933N/S (Campbell Cnty)		
To Offset: -0.05MI	To X/Y Coordinates: 37.06112, -78.96313	
Public Comments:		

Item Code & Description	Detail	Len(mi)	Wid(ft)	Dep(in)	Gal/SqYd	Lbs/SqYd	Quantity	UOM
10103 - AGGR. MATL. NO. 25 OR 26	As needed, 2' each side	0.95	4	2			245.23	TON
10417 - TACK COAT	Mainline	0					1728	GAL
15309 - NS PAVEMENT Liquid Asphalt Coating (Pavement Marker Groove)	Sealing Pavement Markers						125	SY
16340 - ASPH. CONC. TY. SM-9.5D	Mainline	0.95	31	1.5		180	1554.96	TON
16522 - FLEXIBLE PAVE.PLANING 0"-2"	Mainline	0.95	31	1.5			17277.33	SY
54032 - TYPE B CLASS I PVMT LINE MRKG 4" - White	Edgelines						10032	LF
54032 - TYPE B CLASS I PVMT LINE MRKG 4" - Yellow	Centerlines						10362	LF
54219 - INLAID PAVEMENT MARKER ASPHALT - Yellow							125	EA
54428 - TEMP. PVMT MRKG, TY. A, 4" - Yellow	Lane division						10362	LF

Notes:

Miscellaneous Notes

Participating / Minor Arterial

State Project Number: PM3B-015-F21, N501; PM3B-963-F21, N501

Route: 501 (R-VA US00501NB)	Milepost From: 2.37	0.19 Miles N of Rte 928
Subdivision:	Lane: B	PCN: M321PMB117191
Traf Grp: XIII	Milepost To: 3.57	0.2 Miles S Rte 633
From Intersection: 2.18 Miles: Booker Rd PR/NP (Campbell Cnty), SC-928N/S (Campbell Cnty)		
From Offset: 0.19MI	From X/Y Coordinates:	37.06112, -78.96313
To Intersection: 3.77 Miles: Overlap Rte; Phelps Creek Rd PR/NP (Campbell Cnty), SC-633E/W (Campbell Cnty)		
To Offset: -0.2MI	To X/Y Coordinates:	37.0726, -78.97821
Public Comments:		

Item Code & Description	Detail	Len(mi)	Wid(ft)	Dep(in)	Gal/SqYd	Lbs/SqYd	Quantity	UOM
10103 - AGGR. MATL. NO. 25 OR 26	As needed 2' each side	1.22	4	2			314.92	TON
10417 - TACK COAT	Connections, center lane, and turn lanes	0					750	GAL
10417 - TACK COAT	Mainline						1900	GAL
15309 - NS PAVEMENT	Sealing Pavement Markers						100	SY
Liquid Asphalt Coating (Pavement Marker Groove)								
16340 - ASPH. CONC. TY. SM-9.5D	Connections, center lane, and turn lanes	0					479	TON
16340 - ASPH. CONC. TY. SM-9.5D	Mainline	1.22	26	1.5		180	1674.82	TON
16522 - FLEXIBLE PAVE.PLANING 0"-2"	Mainline	1.22	26	1.5			18609.07	SY
16522 - FLEXIBLE PAVE.PLANING 0"-2"	Connections, center lane, and turn lanes	0					5334	SY
54032 - TYPE B CLASS I PVMT LINE MRKG 4" - Yellow	Centerline						12883	LF
54034 - TY B CL I PVMT LINE MRKG 6" - White	Edgeline						13320	LF
54048 - TY.B CL.II PAVE. LINE MARK. 24" - White	RxR Message Bars (2)						30	LF
54048 - TY.B CL.II PAVE. LINE MARK. 24" - White	Gate Bars						25	LF
54048 - TY.B CL.II PAVE. LINE MARK. 24" - White	Stop Bars (2)						46	LF
54048 - TY.B CL.II PAVE. LINE MARK. 24" - Yellow	Hatching Marks						444	LF
54219 - INLAID PAVEMENT MARKER ASPHALT - Yellow							100	EA
54399 - PVMT MSG MARK. R/R CROSSING TY B, CL II - White	RxR Message (1)						1	EA
54428 - TEMP. PVMT MRKG, TY. A, 4" - Yellow	Lane Division						12883	LF
54440 - TEMP. PVMT MRKG, TY. A, 24" - White	Temp. stop bars						46	LF
54457 - TEMP.PVMT SYMB MKG SNGL TURN ARROW TY A	Temp. turn arrows (2) Right (2) Left						4	EA
54459 - TEMP.PVMT SYMBOL MRKG R/R CROSSING TY A	Temp. RxR message						1	EA
54575 - PVMT SYMB MRKG SGL TURN ARR. TY B CL II - White	Single Turn Arrows (2) Right (2) Left						4	EA

State Project Number: PM3B-015-F21, N501; PM3B-963-F21, N501

Notes:

Miscellaneous Notes

There are 2 Norfolk Southern
RxR crossings within the
limits of work at the following
locations:
Crossing ID 470465G at Rte.
972
Lat/Long 37.067905855
-78.969471379
Crossing ID 470463T at Rte.
633
Lat/Long 37.075527456
-78.984042764

Miscellaneous Notes

Participating/Minor Arterial

State Project Number: PM3B-015-F21, N501; PM3B-963-F21, N501

Schedule Totals

Item	Quantity	UOM
10103 - AGGR. MATL. NO. 25 OR 26	2086.88	TON
10417 - TACK COAT	18995	GAL
10700 - RUMBLE STRIP CYLINDRICAL ASPHALT	6230	LF
10701 - LIQ.ASPH. RUMBLE STRIP COATING	875	SY
15309 - NS PAVEMENT Liquid Asphalt Coating (Pavement Marker Groove)	708	SY
16340 - ASPH. CONC. TY. SM-9.5D	9649.7	TON
16360 - ASPH. CONC. TY. SM-12.5E	7980.54	TON
16522 - FLEXIBLE PAVE.PLANING 0"-2"	179579.72	SY
24262 - PORTABLE TEMPORARY RUMBLE STRIP ARRAY	60	DAY
24265 - NS MAINTENANCE OF TRAFFIC PLANT MIX	1	LS
24282 - FLAGGER SERVICE	480	HR
54032 - TYPE B CLASS I PVMT LINE MRKG 4" - White	10032	LF
54032 - TYPE B CLASS I PVMT LINE MRKG 4" - Yellow	39145	LF
54034 - TY B CL I PVMT LINE MRKG 6" - White	41578	LF
54034 - TY B CL I PVMT LINE MRKG 6" - Yellow	8606	LF
54048 - TY.B CL.II PAVE. LINE MARK. 24" - White	784	LF
54048 - TY.B CL.II PAVE. LINE MARK. 24" - Yellow	593	LF
54077 - TY.B CL.VI PVMT LINE MRKG 8" - White	415	LF
54077 - TY.B CL.VI PVMT LINE MRKG 8" - Yellow	265	LF
54078 - TY.B CL.VI PVMT LINE MRKG12" - White	1910	LF
54100 - NS PAVEMENT MARKING - White Type B, Class X2 Pavement Markings - 6"	25060	LF
54100 - NS PAVEMENT MARKING - Yellow Type B, Class X2 Pavement Markings - 6"	15755	LF
54219 - INLAID PAVEMENT MARKER ASPHALT - White	381	EA

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54219 - INLAID PAVEMENT MARKER ASPHALT - Yellow	327	EA
54399 - PVTM MSG MARK. R/R CROSSING TY B, CL II - White	1	EA
54428 - TEMP. PVTM MRKG, TY. A, 4" - White	6192	LF
54428 - TEMP. PVTM MRKG, TY. A, 4" - Yellow	39145	LF
54440 - TEMP. PVTM MRKG, TY. A, 24" - White	199	LF
54457 - TEMP.PVTM SYMB MKG SNGL TURN ARROW TY A	12	EA
54459 - TEMP.PVTM SYMBOL MRKG R/R CROSSING TY A	1	EA
54575 - PVTM SYMB MRKG SGL TURN ARR. TY B CL II - White	12	EA

Schedule Notes

Appomattox & Campbell Plant Primary Mix Schedule UPC - 117191 and 117002.

*Beginning and ending transverse joints shall be offset a minimum of 50' from existing joints.

*X/Y coordinates are for mapping purposes only and may not reflect exact location of treatment on roadway.

*Lengths and widths are for estimating purposes only and may vary in the field.

ACOT-1 shall be applied to the asphalt concrete overlay transitions into existing bridges, bridge underpasses and terminal joints as specified in the site specific notes. Where the ACOT-1 standards are applied, the site specific notes will identify the number of bridges, bridge underpasses and terminal joints on that section for which ACOT-1 shall apply.