**Table of Contents**

**Division I – General Provisions**

See Attachment 4 - Loudoun County Virginia Revisions to the General Provisions

**Division II – Materials**

- 200 Series SSs (Special Provisions)
  - SP208-000100 Section 208 – Subbase and Aggregate Base Material
  - SP211-000100 Section 211 – Asphalt Concrete

- 200 Series SSs (Supplemental Specifications)

  *The Following are Included in the 2018 Supplement to the 2016 VDOT's Specifications*

  - SS208-002016 Section 208 - Subbase & Aggregate Base Material
  - SS210-002016 Section 210 - Asphalt Materials
  - SS211-002016 Section 211 - Asphalt Concrete
  - SS212-002016 Section 212 - Joint Materials
  - SS223-002016 Section 223 - Steel Reinforcement
  - SS232-002016 Section 232 - Pipe and Pipe Arches
  - SS242-002016 Section 242 – Fences
  - SS244-002016 Section 244 – Roadside Development Materials
  - SS245-002016 Section 245 – Geosynthetics & Low Permeability Liners

**Division III – Roadway Construction**

- 300 Series SPCNs (Special Provision Copied Notes)
  - Cn303-000100 Aggregate Material

- 300 Series SPs (Special Provisions)
  - SP302-000100 Restoring Existing Pavement

- 300 Series SSs (Supplemental Specifications)

  *The Following are Included in the 2018 Supplement to the 2016 VDOT's Specifications*

  - SS302-002016 Drainage Structures
  - SS313-002016 Asphalt Stabilized Open Graded Material

  SS303-002016 Earthwork
Division V – Incidental Construction

Cq512-040100  Flagger Service  12
SP512-000100  Work Zone Traffic Control Management  13
SP522-000130  Tree Removal Time of Year Restriction  17
SS520-002016  Water And Sanitary Sewer Facilities  18

The Following are Included in the 2018 Supplement to the 2016 VDOT’s Specifications

SS505-002016-02 Guardrail & W-Beam Median Barriers

Division VII – Traffic Control Devices

cn704-000100  Sweeping Prior to Pavement Marking  22
cn704-000110  Cover/CleanCheck Raised Pavement Markers  23
SP704-000100  Pavement Markings and Markers  24

The Following are Included in the 2018 Supplement to the 2016 VDOT’s Specifications

SS700-002016  General
SS704-002016  Pavement Markings and Markers
SECTION 208—SUBBASE AND AGGREGATE BASE MATERIAL of the Specifications is amended as follows:

Section 208.02—Materials is replaced with the following:

a) **Subbase material** may consist of any mixture of natural or crushed gravel, crushed stone or slag, **crushed hydraulic cement concrete (CHCC)**, and natural or crushed sand; with or without soil mortar. Subbase material may be used in a stabilized or unstabilized form.

(b) **Aggregate base material** may be designated as Type I or Type II as follows:

**Type I** shall consist of crushed stone, crushed slag, crushed hydraulic cement concrete (CHCC), crushed gravel or any combination of these materials; with or without soil mortar or other admixtures. Crushed gravel shall consist of particles of which at least 90 percent by weight of the material retained on the No. 10 sieve shall have at least one face fractured by artificial crushing.

**Type II** shall consist of gravel, stone, or slag screenings; fine aggregate and crushed coarse aggregate; sand-clay-gravel mixtures; crushed hydraulic cement concrete; or any combination of these materials; with or without soil mortar or other admixtures. Aggregate base materials Type I or II may be used in a stabilized or unstabilized form.

(c) **Crushed Hydraulic Cement Concrete** shall not be used as Subbase or aggregate base material when any subsurface drainage system, such as standard underdrains (UD-4 or UD-5) and/or a stabilized open graded aggregate drainage layer (OGDL) is present, except when the CHCC is cement stabilized.

Section 208.03(b) **Atterberg Limits** is amended to include the following:

**Plasticity:** Subbase and aggregate base materials shall be either non-plastic (PI=0) or shall conform to Table II-11 of the Specifications when tested according to VTM-7. If the material is classified as non-plastic (PI=0), according to VTM-7, the Liquid Limit requirement will be waived. Exceptions to this provision are noted as follows:

1. 100% CHCC and 20% or less CHCC Blends will be tested and subject to penalty as noted in Table II-11 of the Specifications for the plasticity index, excluding Liquid Limit penalties.
2. Greater than 20% CHCC Blends will follow testing guidelines as set forth in Section 208.06 (b) for Atterburg limits.
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:

<table>
<thead>
<tr>
<th>Bulk Specific Gravity of the Total Aggregate</th>
<th>Minimum Design AC Content Mix Type (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Than 2.65</td>
<td>SM-9.5: 5.5, SM-12.5: 5.3</td>
</tr>
<tr>
<td>2.65 - 2.74</td>
<td>SM-9.5: 5.4, SM-12.5: 5.2</td>
</tr>
<tr>
<td>2.74 - 2.85</td>
<td>SM-9.5: 5.3, SM-12.5: 5.1</td>
</tr>
<tr>
<td>Greater Than 2.85</td>
<td>SM-9.5: 5.2, SM-12.5: 5.0</td>
</tr>
</tbody>
</table>

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.

If the standard deviation of A.C for SM, IM, and BM mixes is within the ranges of 0.0 – 0.15, and there are no adjustment points assigned for any sieve sizes as noted in Table II-16, the Engineer will increase the unit bid price for AC mixture by 5%.
**cn303-000100-00**

**AGGREGATE MATERIAL** shall be the size specified conforming to Section 203 of the Specifications. The aggregate shall be placed at locations shown on the plans or as directed by the Engineer. Aggregate material will be measured in units of tons for the size specified according to Section 109 of the Specifications. Payment will be made at the contract unit price per ton, which bid price shall be full compensation for furnishing, placing, and shaping and compaction, if required. Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate Material (Size)</td>
<td>Ton</td>
</tr>
</tbody>
</table>

**cq308-030100-00**
DENSITY TESTING OF SUBBASE OR AGGREGATE BASE — Sections 308 and 309 of the Specifications are amended as follows:

SECTION 308—SUBBASE COURSE is amended as follows:

Section 308.03—Procedures is amended by replacing the last paragraph with the following: The Department will perform field density determinations with a portable nuclear field density testing device using the density control strip as specified in Section 304 and VTM-10, or by other approved methods as directed by the Engineer.

SECTION 309—AGGREGATE BASE COURSE is amended as follows:

Section 309.05—Density Requirements is amended by replacing the fifth paragraph with the following:

The base course will be tested in place for depth and density. The Department will perform field density determinations with a portable nuclear field density testing device, using a density control strip as specified in Section 304 and VTM-10 as directed by the Engineer.
I. DESCRIPTION
This work shall consist of restoring existing pavement, removed for installation or repair of utilities such as, but not limited to pipe culverts, conduits, water and sanitary sewer items.

II. MATERIALS
Asphalt Concrete shall conform to Section 211 of the Specifications.
Aggregate Subbase material shall conform to Section 208 of the Specifications.
Asphalt Material shall conform to Section 210 of the Specifications.
Fine Aggregate shall conform to Section 202 of the Specifications.
Coarse Aggregate for surface treatment shall conform to Section 203 of the Specifications.
Hydraulic Cement Concrete Class A3 shall conform to Section 217 of the Specifications.
Steel Reinforcement shall conform to Section 223 of the Specifications.

III. PROCEDURES
Pavement restoration shall be according to this Provision and plan notes.
Backfill shall be according to Section 302.03(a)2.g. of the Specifications.
Asphalt Concrete shall be placed and compacted according to Section 315 of the Specifications.
Surface Treatment shall be placed according to the special provision for Asphalt Surface Treatment and the attached drawing.
Concrete Pavement shall be placed according to the special provision for Patching Hydraulic Cement Concrete Pavement and this special provision. Open trench in Hydraulic Cement Concrete Pavement should be located at existing transverse joints if at all possible. If concrete pavement is removed within two feet of an existing transverse joint, pavement removal shall be extended two feet beyond the joint. Reinforcing steel and dowels shall be installed according to Road and Bridge Standard PR-2. Joint replacement shall be according to Road and Bridge Standard PR-2.

IV. MEASUREMENT AND PAYMENT
Restoring Existing Pavement unless otherwise specified will not be measured for separate payment, the cost thereof shall be included in the price bid for the utility to which it pertains according to Section 302.04, Section 520.06 or Section 700.05 of the Specifications, as appropriate. However, widths and depths in excess of the attached drawing that are authorized or directed by the Engineer will be paid for according to Section 109.05 of the Specifications.
NOTES:

The following methods for restoring existing pavement shall be adhered to unless otherwise specified on the plans.

1. Pipe culverts, conduits and utility items shall be installed according to the applicable Road and Bridge Standards and Specifications.

2. Subbase - Aggregate material Type 1, Size 21A or 21B.

3. Asphalt Concrete Type BM-25.0

4. Surface - Asphalt Concrete Type SM-9.5D @ 165 lbs. per sq. yd.

5. Surface - Blotted Seal Coat Type C: The initial seal and final seal shall be CRS-2, CMA-2 or CMS-2h liquid asphalt material @ 0.17 gal./sq. yd. with 15 lbs. of No. 8P stone/sq. yd. each. The blot seal shall be CRS-2, CMS-2 or CMS-2h liquid asphalt material @ 0.15 gal./sq. yd. with 10 lbs. of fine aggregate grade B sand per sq. yd.

6. Subbase - Aggregate material Type 1 Size 21B

7. Surface - Hydraulic Cement Concrete, high early strength, matching existing structure for depth and surface texture.
SS303-002016-03

VIRGINIA DEPARTMENT OF TRANSPORTATION
2016 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 303–EARTHWORK

SECTION 303–EARTHWORK of the Specifications is amended as follows:

Section 303.02(c) - Geotextile materials used for embankment stabilization is replaced with the following:

Geotextile materials used for embankment stabilization shall conform to Section 245.03(d).

Section 303.02(f) - Fabric used for Turbidity Curtains is inserted as follows:

Fabric used for Turbidity Curtains shall conform to Section 245.03(k).

Section 303.03(b) - Soil Stabilization is amended by replacing the first paragraph with the following:

Soil Stabilization: The Contractor shall begin soil stabilization as soon as practicable, but no later than the end of the next business day, following the day when the land-disturbing activities on any portion of the Project have permanently or temporarily ceased for an anticipated duration of greater than 14 days. The Contractor shall complete soil stabilization within seven days of reaching final grade or from when land-disturbing activities have permanently or temporarily ceased for an anticipated duration of greater than 14 days. Initiation of soil stabilization includes, but is not limited to, prepping the soil for vegetative or non-vegetative stabilization, applying mulch or other non-vegetative product to exposed soil, and seeding or planting the exposed area. The Contractor can initiate soil stabilization activities on a portion of the area to be stabilized and not on the entire area, so long as the initiation and completion of stabilization activities occurs on the entire disturbed area within the allowable timeframe for soil stabilization. Areas within 100 feet of the limits of ordinary high water or a delineated wetland are excluded from this requirement, but the work shall be continuously prosecuted until completed, and then stabilized immediately upon completion of the work in each impacted area. Soil stabilization includes: temporary and permanent seeding, riprap, aggregate, sod, mulching, and soil stabilization blankets and matting in conjunction with seeding. The applicable type of soil stabilization shall depend upon the location of areas requiring stabilization, time of year, weather conditions, and stage of construction operations.

Section 303.03(c) - Check Dams is amended by replacing the second paragraph with the following: Synthetic check dams recorded in the Department’s Approved List No. 58 may be substituted for Standard EC-4, Rock Check Dams, Type II, with the approval of the Engineer at no additional cost to the Department. Synthetic check dams shall be installed in accordance with the manufacturer’s instructions.

Section 303.03(e)3 - Temporary filter barriers is deleted.

Section 303.03(g) - Erosion Control Mulch is amended by replacing the second paragraph with the following:

Mulch shall be applied to exposed slopes requiring mulch or to areas to be stabilized or paved within 48 hours after performance of grading operations in accordance with Section 603.03(e).
Section 303.03(i) - Turbidity Curtain is replaced with the following:

**Turbidity Curtain:** This work consists of installation, maintenance, and removal of a turbidity curtain, including all necessary cables, weights, and floats in accordance with this provision and in conformity with the lines, grades and details shown on the Plans or established by the Engineer. The curtain shall be provided as a temporary measure to minimize the drift of suspended material during construction of the Project.

**Type I** turbidity curtain shall be used in protected areas that are sheltered from waves; and exposed only to light winds, and to current velocities of less than one foot per second.

**Type II** turbidity curtain shall be used in areas subject to small to moderate current velocities (up to 2 knots or 3.5 feet per second) or moderate wind and wave action.

**TYPE III** turbidity curtain shall be used in areas subject to considerable current (up to 3 knots or 5 feet per second), tidal action, or where the curtain is potentially subject to wind and wave action. In locations with currents greater than 3 knots (5 feet per second) perpendicular to the barrier, or weather conditions that cause a turbidity barrier to be ineffective, a turbidity barrier shall not be used.

Floatation shall be flexible, buoyant units contained in a floatation sleeve or collar attached to the curtain. Buoyancy provided by the floatation units shall be sufficient to support the required width of the curtain and maintain a freeboard of at least 3 inches above the water surface level, to a minimum of one foot above the bottom or a maximum ten foot depth at all stages of water levels. Load lines shall be fabricated into the top and bottom of the curtain. The top load line shall consist of woven webbing or vinyl-sheathed steel cable and shall have a minimum break-strength of 9,800 pounds. The bottom load line shall consist of a chain incorporated into the bottom hem of the curtain of sufficient weight to serve as ballast to hold the curtain in a vertical position. Additional anchorage shall be provided if necessary to top load lines. The load lines shall have suitable devices, which develop the full breaking strength for connecting to load lines in adjacent sections.

The Contractor shall submit Working Drawings to the Engineer for review in accordance with Section 105.

The curtain shall be placed at the locations shown on the Plans and in accordance with the approved Working Drawings. The Contractor shall maintain the turbidity curtain in order to ensure the continuous protection of the waterway.

The curtain shall extend the entire depth of the watercourse whenever the watercourse is not subject to tidal action or significant wind or wave action.

In tidal or wind-and-wave action situations, the curtain shall never touch the bottom. A minimum 1-foot gap shall be established between the weighted lower end of the skirt and the bottom at the mean low water.

Turbidity curtains installed in a navigable waterway shall be marked with lighted buoys that conform to U.S. Coast Guard regulations.

When the curtain is no longer required as determined by the Engineer, the curtain and related components shall be removed in such a manner as to minimize turbidity. The curtain and related components shall become the property of the Contractor and shall be removed from the project.

Section 303.06(e)8 - Temporary filter barriers is deleted.
Section 303.06(e)20 - Turbidity Curtain is replaced with the following:

Turbidity curtain will be measured in linear feet from edge of the curtain along the support cable. Turbidity curtain will be paid for at the contract unit price per linear foot for the type specified. This price shall include design details, furnishing, installing, maintaining, and removal of all materials necessary to complete the work.
FLAGGER SERVICE – The Contractor shall provide certified flaggers in sufficient numbers and locations as necessary for control and protection of vehicular and pedestrian traffic in accordance with the VWAPM, or as directed by the Engineer. Flaggers shall use sign paddles to regulate traffic in accordance with the VWAPM. Certified flaggers shall conform to Section 105.14 of the Specifications.

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

<table>
<thead>
<tr>
<th>Pay Item Pay</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flagger Service</td>
<td>Hour</td>
</tr>
</tbody>
</table>
I. GENERAL DESCRIPTION

This work shall consist of providing work zone traffic control management in strict compliance with the contract, plans, specifications, the Virginia Work Area Protection Manual and the Manual on Uniform Traffic Control Devices (MUTCD), including supervision of personnel and the installation, inspection, and maintenance of all traffic control devices on the project.

II. REQUIREMENTS

The Contractor shall assign a traffic control supervisor (TCS) to provide work zone traffic control management for the project. If the Contractor assigns more than one TCS to provide work zone traffic control management, a weekly schedule identifying who will be in charge of providing work zone traffic control management on a daily basis shall be submitted to the VDOT Area Construction Engineer by the Contractor.

The TCS shall have a set of traffic control plans and a copy of the edition of the Virginia Work Area Protection Manual specified on the plan sheet or in the contract readily available at all times.

A. Certification

Prior to commencing work requiring work zone traffic control management, the Contractor shall submit to the Area Construction Engineer a valid copy of the Traffic Control Supervisor certificate (wallet size card) issued by the American Traffic Safety Services Association (ATSSA), or another similarly accredited agency or firm approved by the Department.

The Department will accept the certification by ATSSA or any approved agency or firm only if all of the following minimum requirements are met:

1. Successful completion of an Intermediate or Advanced work zone traffic control training course approved by the Department.

2. Passing a written examination given by the agency or firm on the approved work zone traffic control training course.

3. A minimum of two years full-time field experience in work zone traffic control. The experience may be verified by the Department at its discretion.

The TCS certification shall be renewed every four years by the TCS taking and passing a recertification test. The recertification test shall be taken through ATSSA or an agency or firm approved by the Department. Recertification shall be done in the fourth year prior to the expiration date.
B. Duties

The TCS’s main responsibility shall be work zone traffic control management. The TCS may have other assigned duties on the project as approved in writing by the Area Construction Engineer. The following is a listing of the TCS’s primary duties:

1. The TCS(s) shall personally provide work zone traffic control management and supervision services at the project site.

2. The TCS(s) shall coordinate the training of flagging and signing personnel.

3. The TCS(s) shall supervise the flagging and signing personnel.

4. The TCS(s) shall coordinate all work zone traffic control operations for the duration of the contract, including those of subcontractors, utility companies, and suppliers, to ensure that all work zone traffic control is in place and fully operational prior to the commencement of any work.

The Department recognizes that the Contractor does not have direct control over the work zone traffic control operations of the utility companies. The coordination provided by the TCS when dealing with utility companies is for the purpose of coordinating concurrent utility work zone traffic control with any other construction/maintenance work zone traffic control to avoid conflicts.

5. The TCS(s) shall perform daily reviews of work zone traffic control when work activities are underway and document in the work zone traffic control daily diary activities taking place and any deviation from the traffic control plan, length and timing and mitigation of excessive traffic queues, and instances or conflicts or problems with the work zone traffic control and corrective actions taken. In addition, the TCS(s) shall perform weekly reviews of the work zone traffic control and document in detail using Forms TE-97001 and 97002. Every other detailed weekly review shall be performed during nighttime hours or as directed by the Area Construction Engineer.

The TCS shall inspect traffic control devices in use for compliance with the ATSSA Quality Standards for Work Zone Traffic Control Devices, the Road and Bridge Specifications, and the Virginia Work Area Protection Manual. The TCS shall provide for the immediate repair, cleaning, or replacement of traffic control devices not functioning as required to ensure the safety of the motorists and construction personnel.

The traffic control devices shall be inspected by the TCS during working and non-working hours on a schedule approved in writing by the Area Construction Engineer, but as a minimum at the beginning and end of each work day or night and once during non-working weekends and holidays, and daily on restricted days due to inclement weather or during any work shutdown. Traffic control devices in use longer than fourteen (14) days shall be inspected by the TCS at least once every other week during nighttime periods.

6. The TCS(s) shall prepare and submit statements concerning road closures, delays, and other project activities to the District Public Affairs office as required.

7. The TCS(s) shall be responsible for notifying the VDOT project Maintenance of
Traffic (MOT) Coordinator or designee, of all accidents related to the project traffic control. The time and date of notification shall be documented in the daily diary.

8. The TCS(s) assigned to the project shall attend the preconstruction conference and any other meeting which involves traffic control.

9. The TCS(s) shall be responsible for the maintenance, cleanliness, and replacement of traffic control devices of the existing traffic control plan during working and non-working hours.

C. Documentation - Traffic Control Diary

The TCS shall maintain a project work zone traffic control diary in a bound book. The Contractor shall provide a sufficient number of diaries for his or her use. The TCS shall keep the work zone traffic control diary current on a daily basis, and shall sign each daily entry. Entries shall be made in ink in a format approved by the Area Construction Engineer, and there shall be no erasures or white-outs. Incorrect entries shall be struck out and then replaced with the correct entry. Photographs may be used to supplement the written text.

The work zone traffic control diary shall, at all times, be available for inspection by the VDOT Maintenance of Traffic Coordinator and a copy of the diary shall be submitted to the MOT Coordinator on a weekly basis.

The work zone traffic control diary(s) shall become the property of the Department at the completion of the project. Failure to submit the diary shall result in the withholding of final payment until the diary(s) is submitted.

D. Availability of TCS

Traffic control management shall be provided under the supervision and direction of the TCS on a 24-hour-per-day basis throughout the duration of the project. The TCS shall be available on every working day—on call at all times—and available upon the Area Construction Engineer’s request during normal working hours and during other than normal working hours in the case of emergency. The provisions for availability of the TCS shall also be met during times of partial or full project suspension. Contact telephone numbers for the TCS(s) shall be provided to Department project personnel, the Area Construction Engineer, the Residency Administrator, and the region Smart Traffic Center prior to the Contractor commencing work requiring work zone traffic control management.

E. Failure to Comply

The Area Construction Engineer may suspend all or part of the Contractor’s operation(s) for failure to comply with the approved “Traffic Control Plan” or failure to correct unsafe traffic conditions within 24 hours for critical items and 72 hours for non-critical items after such notification is given to the Contractor in writing.

In the event that the Contractor does not take appropriate action to bring the deficient work zone traffic control into compliance with the approved traffic control plan or fails to correct the unsafe traffic conditions, the Department may proceed with the corrective action using its own forces, equipment, and material to maintain the project and such costs, plus 25 percent for supervisory and administrative personnel, will be deducted from the money owed to the Contractor for the project.

The Contractor shall not be relieved of the responsibility to provide work zone traffic control safety to the traveling public when a project is under full or partial suspension. When a project is under suspension due to the Contractor’s failure to comply with this
section, or when the contract is under liquidated damages, the Contractor shall continue to provide work zone traffic control management and no additional measurement or payment will be made. If suspensions or partial suspensions are requested by the Contractor, the additional work zone traffic control management costs will be at the Contractor’s expense.

III. MEASUREMENT AND PAYMENT

Work Zone Traffic Control Management will be paid for at the contract lump sum price. This price shall be full compensation for furnishing 24 hour services as specified, including preparing and furnishing Work Zone Traffic Control diaries.

When work zone traffic control management is paid for by the lump sum, monthly partial payments for work zone traffic control management will be made on a pro rata basis for the estimate period being vouchered for payment.

In the event the contract time is authorized to be extended according to the provisions of Section 108.04 of the Specifications, the provisions of Section 104.02 of the Specifications will not apply. The payment for this item will be compensated on a daily basis by dividing the original lump sum bid amount by the number of calendar days in the original contract time and the resultant daily dollar value assigned to this item.

Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Zone Traffic Control Management</td>
<td>Lump Sum</td>
</tr>
</tbody>
</table>
I. Background

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

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

II. Requirements

1. **Time of Year Restriction.** No trees greater than or equal to 3 inches DBH shall be removed from DATE to DATE unless otherwise allowed by the Engineer as approved by the District Environmental Manager.

2. Unless other restrictions exist in the Contract prohibiting tree removal, the Contractor is allowed to proceed with tree removal operations outside of the Time of Year Restriction in accordance with Section 601 of the Specifications and within the established clearing limits as shown on the plans, and as directed by the Engineer.

3. **Notification and Cessation of Work**

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

III. Measurement and Payment

The cost of complying with this Specification shall be included in the contract unit price of other items.
SS520-002016-01

VIRGINIA DEPARTMENT OF TRANSPORTATION
2016 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS
SECTION 520 - WATER AND SANITARY SEWER FACILITIES

Section 520 - Water and Sanitary Sewer Facilities is amended as follows:

Section 520.01 - Description is amended to include the following:
If the utility owner’s specifications conflict with the Contract, the utility owners’ specifications shall govern in those areas.

Section 520.02(c) - Casing pipe is replaced with the following:
Casing pipe shall conform to Section 232.02 (c) 4.

Section 520.02(k) - Valves is replaced with the following:
Valves shall conform to AWWA C500, C504, C506, C507, C508, C509, or C515 for the types and features specified.

Section 520.02(r) - Flowable backfill is inserted as follows:
Flowable backfill shall conform to Section 249.

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 conforming to Section 509.

Section 520.03(b) - Excavation is amended to replace the fourth paragraph with the following:
When work is not in progress for any reason, lines shall be securely closed with a water-tight cap or plug to prevent water and debris from entering the lines.

Section 520.03(f)5 - PVC pipe is replaced with the following:
PVC pipe shall be joined by gasketed bell and socket joints in accordance with AWWA C-900 and AWWA C905.

Section 520.03(f)8 - PE pipe is replaced with the following:
PE pipe shall be joined in accordance with AWWA C-901, AWWA C906, and the manufacturer’s recommendation.

Section 520.03(g) - Plugs, Caps, Tees, and Bends is replaced with the following:
Plugs, Caps, Tees, and Bends: The Contractor shall anchor plugs, caps, tees, and bends with reaction backing if indicated in the Plans. Backing shall be concrete reaction blocks, metal reaction harnesses, or a combination thereof. Concrete shall be placed in accordance with Section 404 and cured in accordance with Section 316.04(j). Metal harness tie rods and clamps shall be of adequate strength to prevent movement and shall be galvanized or rustproofed by a means approved by the Engineer.

Section 520.04(a) - Water Mains and Appurtenances is renamed Force Main Sanitary Sewers, Water Mains, and Appurtenances and replaced with the following:

Force Main Sanitary Sewers, Water Mains, and Appurtenances: New force main sanitary sewers, water mains, and appurtenances shall be tested for leakage using the hydrostatic pressure test method in accordance with Section 4 of AWWA C600 and the following:

1. The duration of each test shall be at least 2 hours. Sections of main with concrete reaction backing shall not be tested until at least 5 days after the backing is placed. If the backing is constructed with high-early-strength concrete, the test may be performed 2 days after backing is placed.

2. Testing of tie-ins with existing mains shall be performed under the normal working pressure of the main involved. The Engineer will not allow visible leakage at these points during a period of at least 2 hours.

3. The hydrostatic test pressure shall be 150 pounds per square inch or 1.5 times the working pressure, whichever is greater, based on the elevation of the lowest point in the line or section under test and shall be corrected to the elevation of the test gage. The Contractor shall ascertain the specific working pressure of the force main sanitary sewer or water main from the utility owner. Leakage loss shall not exceed the allowable leakage \(L\) as determined by the following formula:

\[
L = SD\sqrt{P}/148,000
\]

Where:
- \(L\) = the allowable leakage in gallons per hour
- \(S\) = the length of pipe tested in feet
- \(D\) = the nominal inside diameter of the pipe in inches
- \(P\) = the average test pressure during the leakage test in pounds per square inch

Section 520.04(b)3 - Air test is replaced with the following:

Air test: In lieu of the infiltration or exfiltration test for leakage the Contractor may test the sewers by using low air pressures in accordance with ASTM F1417. The Contractor shall perform the low air pressure test in accordance with the following:

a. The Contractor shall eliminate discernable water leaks and remove debris after backfilling and prior to air testing. Tests shall be conducted from manhole to manhole or from manhole to terminus. No personnel shall be allowed in manholes once testing has begun.

b. The Contractor shall provide securely braced test plugs at each manhole and a suitable means of determining the depth of the ground water level above the inverts immediately before testing.
c. The Contractor shall slowly add air to the portion of the pipe being tested until the internal air pressure is at a test pressure of 4 pounds per square inch above the invert or ground water table, whichever is greater, or until the pressure is equal to the hydraulic gradient, whichever is greater. If the test plug shows leakage, as determined by the Engineer, the Contractor shall relieve the pressure for at least 2 minutes. The Contractor shall then disconnect the hose and compressor. If the pressure decreases to 3.5 pounds per square inch, the Contractor shall record the amount of time required for the pressure to drop from 3.5 to 2.5 pounds per square inch. The minimum allowable holding times will be as specified herein. The Engineer will not accept pipes that fail to maintain minimum holding times required by ASTM F1417. Any repairs, replacement, and retesting as specified by the Engineer shall be performed at the Contractor's expense.

If low air pressure tests are used, the manholes shall be tested by exfiltration. Inflatable stoppers shall be used to plug all lines into and out of the manhole being tested. The stoppers shall be positioned in the lines far enough from the manhole to ensure testing of those portions of the lines not air tested. The manhole shall then be filled with water to the top and a 12-hour soaking period shall be allowed prior to test measurement. The manhole shall be refilled to a mark, and at the end of 1 hour, the amount of leakage shall be measured. Leakage shall not exceed 1/2 gallon per hour. If the manhole fails to comply with the test requirements, the Contractor shall repair leaks at the Contractor’s expense. The test shall then be repeated until satisfactory results are obtained.

**Section 520.04(c) - Force Main Sanitary Sewers** is deleted.

**Section 520.04(d) - Offsets of Existing Pipe** is redesignated (c).

**Section 520.06 - Measurement and Payment** is amended to replace the second paragraph with the following:

*Water mains, water service lines, sanitary sewer pipe, and sanitary sewer force mains* will be measured in linear feet of pipe through all valves and fittings, complete-in-place, and will be paid for at the Contract linear foot price. This price shall include excavating when not a specific pay item for the utility in question; testing; disinfecting; backfilling; compacting; dewatering; disposing of surplus and unsuitable material; sheeting and shoring; furnishing and installing bedding material; furnishing and installing pipe; connecting to existing lines or manholes; fittings less than 16 inches in diameter; reaction blocking; concrete anchor block; watertight welds; restrained joints; abandoning or removing lines, manholes, and other appurtenances; and restoring property. Furnishing and installing Class A3 concrete or flowable backfill in abandoned 8 inch or larger lines will be measured and paid for separately. Pipe of one size, except for cast iron and ductile iron pipe, shall be combined into one contract item for the respective size of water main and sanitary sewer pipe. The salvage value of abandoned materials shall accrue to the Contractor and shall be reflected in the price bid for the respective replacement facility.

**Section 520.06 - Measurement and Payment** is amended to replace the thirteenth paragraph with the following:

*Bends, plugs or caps, reducers, solid sleeves, and branches* (tees, wyes, and crosses), only 16 inches in diameter and larger, will be measured in units of each and will be paid for at the Contract each price. This price shall include furnishing and installing pipe fittings, restrained joints, excavating, reaction blocking, testing, backfilling, sheeting and shoring, watertight welds, abandoning or removing existing lines as noted on the plans, and restoring property.
Section 520.06 - Measurement and Payment is amended by inserting the following after the fifteenth paragraph:

Concrete will be measured in cubic yards and 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 in cubic yards and will be paid for at the Contract cubic yard price. This price shall include furnishing and placing of backfill material and furnishing and installing plugs.

Section 520.06 - Measurement and Payment is amended by revising the Pay Item Table as follows:

The following pay items are inserted:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid Sleeve (Size)</td>
<td>Each</td>
</tr>
<tr>
<td>Solid sleeve-force main (Size)</td>
<td>Each</td>
</tr>
<tr>
<td>Concrete (Class) Cubic</td>
<td>Yard</td>
</tr>
<tr>
<td>Flowable Backfill Cubic</td>
<td>Yard</td>
</tr>
</tbody>
</table>
cn704-000100-00

SWEEPING PRIOR TO PAVEMENT MARKING — No earlier than 7 days after completion of surface treatment the Contractor shall sweep the roadway surface prior to installation of permanent pavement markings. Permanent pavement markings shall be installed within 30 calendar days after completion of surface treatment placement. The cost of sweeping the roadway prior to installing pavement marking shall be included in the price bid for pavement marking.
cn704-000110-00

COVERING CLEANING AND INSPECTING EXISTING RAISED PAVEMENT MARKERS — The Contractor shall cover all existing raised pavement markers with a non-stick covering. The Contractor shall ensure that no resurfacing material, duct tape, or adhesive comes into contact with the retroreflector. The covering shall extend to include an area of 12 inches in front and in back of the casting, and the entire width of the casting. After completion of the resurfacing operation, the covering shall be removed. If the existing raised pavement marker retroreflectors are dirtied during paving operations (including dirtying from adhesive residue), they shall be fully cleaned or replaced by the Contractor to ensure minimum retroreflectivity as defined in Section 235 of the Specifications. Any raised markers (including retroreflectors and/or castings) damaged by the Contractor’s operations shall be replaced by the Contractor and properly disposed of at no expense to the Department. Replacement castings shall not be placed in the same location as the existing castings. The void left by the dislodged casting shall be repaired according to the Specifications, and the replacement raised pavement marker properly installed in a new location at least 3 inches from the repair. The covering, cleaning, and inspection of the raised markers will not be measured for payment. All cost for performing this work shall be included in the price bid for other items of work.
SECTION 704—PAVEMENT MARKINGS AND MARKERS

Section 704.02(a) Pavement Markings is amended to add the following:
The sizes and shapes of symbols and characters shall match the size and shape specified in the Standard Drawings or elsewhere in the Contract. Hand-drawn or “stick” symbols or characters will not be allowed.

Section 704.02(e) Flexible Temporary Pavement Markers (FTPMs) is inserted as follows:
Flexible Temporary Pavement Markers (FTPM’s) shall conform to Section 235 of the Specifications. 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 Materials Division’s Approved Products List No. 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 third and fourth paragraphs with the following:
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 prior to 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 existing markers shall be replaced with new markers with the same retroreflector colors (front and back) unless otherwise directed in the Contract or by the Engineer.

When FTPM’s are used to simulate temporary edgelines, then FTPM’s shall be spaced every 20 feet and shall match the color of the line markings being simulated.
FTPM’s 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 FTPM’s
with protective covering shall be installed prior to 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 FTPM’s prior to leaving the work site. Failure to remove such covering shall result in the non-payment for that portion type (skip or solid) of temporary pavement marking. For plant mix operations, the appropriate FTPM’s 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 FTPM’s until the permanent pavement markings are installed. Damaged or missing FTPM’s shall be replaced within 24 hours of discovery at the Contractor’s expense with new FTPM’s 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 FTPM’s may be damaged or missing on any measured 100-foot segment of simulated solid line.

Once applied, FTPM’s will be considered for a single use. If a FTPM requires replacement, it shall be properly disposed of and replaced with a new FTPM at no additional cost to the Department. FTPM’s may remain in place, undamaged, after installation for up to 14 consecutive days. When FTPM’s are applied prior to final surface placement (such as with surface treatment, slurry seal, or latex emulsion operations) this 14 -consecutive-day time limit shall begin at the time of actual installation of the FTPM’s, not at the time of surface placement. The Engineer may approve an extension of the 14 days if all damaged FTPM’s are replaced and the remaining FTPM’s are maintained.

FTPM’s shall be removed and properly disposed of when permanent pavement markings are installed. Used FTPM’s 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)1 Snow-Plowable Raised Pavement Markers is amended to insert the following:

All SRPMs on plant mix surfaces shall be installed within 30 calendar days after the end of the last workday (final surface) of continuous paving on that section of roadway.

All SRPMs 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.

Replacement of existing retroreflector lenses shall be in accordance with the manufacturer’s installation instructions. If the new retroreflectors are dirtied or damaged during installation they shall be replaced at no additional cost to the Department. Properly dispose of the existing retroreflectors in accordance with Section 106.04.

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.
- 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.

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

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Maximum allowable duration for unmarked roads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interstates and other freeways (limited access roads) posted at 55 MPH or greater (including interstate/freeway ramps)</td>
<td>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. Contractor shall install FTPMs on top of all SRPMs in each lane and gore area with protective covering prior to latex placement in accordance with SP. For covering Cleaning and Inspecting Existing Raised Pavement Markers.</td>
</tr>
</tbody>
</table>

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.
For 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.

If 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.

If 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 nonfreeway 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.

If 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.

On 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.

Temporary Pavement Markings

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

### Section 704.03(g) Temporary Pavement Markings

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:

<table>
<thead>
<tr>
<th></th>
<th>Milled Surface</th>
<th>Intermediate Lifts or Final Surface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness</td>
<td>15 mils</td>
<td>8 to 10 mils¹</td>
</tr>
<tr>
<td>Glass Bead Application Rate</td>
<td>6 lbs. of glass beads per gallon of material</td>
<td>3 lbs. of glass beads per gallon for 8 to 10 mils and 6 lbs. per gallon for 11 to 15 mils</td>
</tr>
<tr>
<td>Long Line Width</td>
<td>Same width as the permanent markings</td>
<td>75% of the permanent marking width</td>
</tr>
<tr>
<td>Skip Line Pattern</td>
<td>10-foot line segments / 30-foot gaps (approx.)</td>
<td>8-foot line segments / 32-foot gaps (approx.)</td>
</tr>
</tbody>
</table>

¹Type A paint at approximately 15 mils thickness with 6 lbs. of glass beads per gallon will be permitted for the temporary lane line markings provided that the Type A is worn down to no more than 10 mils thickness prior to 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.

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.

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 reaplication 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.

The Contractor may employ approved methods of drying the pavement surface that will not damage the pavement. Methods that may damage the pavement, such as “torching” of the pavement, will not be allowed. Any drying of pavement will be at no extra cost to the Department. While in place, temporary pavement markings sizes, shapes and retroreflectivity 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 prior to the installation of permanent markings, the tape shall be removed and new Type D-removable tape, or Type A-temporary paint shall be reapplied, at no additional cost to the Department.

If Type A temporary paint does not meet the requirements of Section 512 prior to 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 pavement markings are not located directly underneath the location where the permanent markings are to be installed, they shall be 100% eradicated in accordance with Section 512 prior to 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 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:

The contractor shall evaluate the pavement surface between 14 and 18 days after the end of the last workday of continuous paving on that section of roadway. If that evaluation ascertains that the pavement surface meets the markings manufacturer’s requirements for application of permanent markings, the texture is weathered-in on the edges, and the temporary marking is worn down to 10 mils or less, then the Engineer shall be notified that the surface meets the markings manufacturer’s specifications. The permanent markings shall be installed between 14 days and 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 or 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 linear feet and paid for at the contract linear 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: The Schedule of Items may contain permanent pavement marking bid items designated as “Bonus” in addition to the regular permanent pavement marking bid items. This “Bonus” designation indicates an adjustment of 1.25 to be made to the regular Contract unit bid price for the designated item in accordance with Section 102.05 which is to be paid to the Contractor if the following conditions are met:

- **Plant Mix**: Pavement markings (not including Type B, Class VI) are correctly installed on Plant Mix surfaces within 14 days or less after the last day of paving.
- **Non-Plant Mix**: Pavement markings (not including Type B, Class VI) are correctly installed on Non-Plant Mix surfaces within 28 days or less after the last day of paving.

The Engineer will not consider an extension in the time limit for payment at the adjusted price due to weather or any other conditions that would prohibit installation of the permanent markings within the “Bonus” time frame.

Temporary pavement line markings will be measured in linear feet and paid for at the Contract linear 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.

In the event the Contractor uses FTPM’s in lieu of Type A-temporary paint to simulate a longitudinal line marking as allowed herein, the Contractor will be paid at the linear foot pay unit for the length of simulated line marking at the Type A-temporary paint unit price. That measurement shall represent all FTPM’s required for that simulated line marking. This cost shall include furnishing, installing and maintaining the FTPM’s, 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.

**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.

**Pavement Marker Retroreflector Replacement** will be measured in units of each and paid for at the contract each price for the type specified. This price shall include furnishing retroreflectors, removal and disposal of the existing retroreflector, cleaning of the existing casting, adhesive, installation of the new retroreflector, quality control tests, daily log, and manufacturer’s warranty.

Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item Pay</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Type or class) Temporary pavement line marking (width)</td>
<td>Linear foot</td>
</tr>
<tr>
<td>Temporary pavement message (word) marking (size character, type or class material)</td>
<td>Each</td>
</tr>
<tr>
<td>Temporary pavement symbol marking (Symbol, Type or class material)</td>
<td>Each</td>
</tr>
<tr>
<td>Pavement marker retroreflector replacement (Type)</td>
<td>Each</td>
</tr>
</tbody>
</table>