20241002 – October Specifications Committee Meeting

October Specifications Committee Meeting Agenda

Meeting Date

Wednesday, October 2, 2024 @ 9:00am

Meeting Location: Building 5, Conference Room 820, Technical Support Division Charleston, WV

Also meeting virtually via Google Meet video conference. E-mail distribution message includes instruction.

Approved Permanent Specification changes from last Committee meeting (08/07/24)

- **106.1-Source of Supply and Quality Requirements-**The revision adds reference to the MPs and federal guidelines.
- **109.20.1-Electronic Ticket Delivery-**Revisions adds precast concrete products, pipe, and reinforcing steel to subsection.
- **701.5-Rapid Hardening Hydraulic Cements-**The revision adds new subsection 701.5-Rapid Hardening Hydraulic Cement to the subsection.
- **720.3.2-Quality Assurance (QA) Testing-**The revision updates the turnaround time for testing and the removal of Schedule 3 paving.

Approved Project Specific Special Provisions (SP) from last Committee meeting (08/07/24)

- **SP-Civil Rights and Labor (CRL)**
- **SP406-High Friction Surface Treatment**
- **SP601-Structural Concrete**
- **SP701-Expansive Hydraulic Cement**

Items removed from Committee Agenda

- **None**

Old Business Items

SECTION	TITLE	DESCRIPTION
506	**506.3-Proportioning** A. Gillispie	**2nd time to Committee, discussed in August.** Specification Change to 506-Concrete Pavement Repair. The revision adds a continuous mobile volumetric mixer as an option in lieu of a batch plant. The specification is redline copy showing the revision.
514	**514.4-Testing** A. Thaxton	**2nd time to Committee, discussed in August.** Specification Change to 514-Roller Compacted Concrete. The revision updates AASHTO T23 to AASHTO R100. The specification is redline copy showing the revision.
603	**603.6.2.1-Class S-P Concrete Mix Design Testing.** A. Thaxton	**2nd time to Committee, discussed in August.** Specification Changes to 603-Prestressed Concrete Members. The revision replaces the Rapid Chloride Test with the Surface Resistivity Test. Updated per comments during the last meeting. The specification is redline copy showing the revision.

20241002 – October Specifications Committee Meeting

623	**623.2-Materials** K. Kukaua	**2nd time to Committee, discussed in August.** Specification Change to 623-Pneumatically Applied Mortar or Concrete (Shotcrete). Revision updates the Materials Table in 623.2 to reflect the fibers being used for shotcrete being added in section 715 Fibers for Portland Cement Concrete. The dosage at which they pass these requirements will be the dosage required for application in the field. Additionally revised in the table is the subsection for Curing Materials. The specification is redline copy showing the revision.
655	**SP655-Matting for Erosion Control** J. Bailey	**2nd time to Committee, discussed in August.** Project Specific Special Provision (SP) Matting for Erosion Control. This is an update to a previously approved special provision. The revision removes physical requirements such as consistency, Percentage Open Area (POA), and Unit Weight and Yield. The revision also adds acceptance from a manufacturer based on the test data of the product.
708	**708.3-Joint and Crack Sealant, Hot-Poured for Concrete and Asphalt Pavements** S. Jack	**2nd time to Committee, discussed in August.** Specification Change to 708-Joint Materials. The revision adds that hot-applied asphalt aggregate-filled materials shall be evaluated by AASHTO Product Evaluation and Audit Solutions and shall meet the requirements of ASTM D8260. The specification is redline copy showing the revision.
712	**712.4-Galvanized Steel Deep Beam Guardrail, Fasteners and Anchor Bolts** G. Hanna	**2nd time to Committee, discussed in August.** Specification Change to 712-Guardrail and Fence. This is an update to a previously approved specification. The revision adds the MP reference. The specification is redline copy showing the revision.
715	**715.3-Fibers for Portland Cement Concrete**	**2nd time to Committee, discussed in August.** Specification Change to 715-Miscellaneous Materials. The specification change included the removal of requiring hybrid fibers, the alteration of the minimum required fiber reinforced cement properties was changed. All the values listed under the minimum required fiber reinforced concrete properties are connected, the minimum 25% residual strength ratio is a function of the flexural strength

	K. Kukaua	and the EFS value. In order to obtain the specified ultimate flexural strength at peak stress, the equivalent flexural strength number needed to be increased. The specification is redline copy showing the revision.

New Business

SECTION	TITLE	DESCRIPTION
	SP Subcontractor Prompt Payment D. Ballard	**1st time to Committee.** Update to a previously approved Special Provision (SP) for Subcontractor Prompt Payment. These revisions are due to the implementation of the Civil Rights and Labor module within the AASHTOWare Project (AWP) system. Electronic documentation of subcontractor payments will be required to be completed by contractors and subcontractors in AWP, paper forms/submissions are being eliminated, and oversight of subcontractor payment is being transferred from the Districts to the Civil Rights Compliance Division. Other minor clarifying language changes were also made. The SP is redline copy showing the revision.
SP207	**SP207-Settlement Plates** A. Wentz	**1st time to Committee.** Update to a previously approved Project Specific Special Provision (SP) for Settlement Plates. Settlement plates are used to determine the magnitude and rate of settlement of embankments and subgrades. The reason for changes to this project specific special provision is to clarify the use of settlement plates as well as how they are to be installed and the frequencies with which they are to be monitored. The SP is redline copy showing the revision.
101	**101.2-Definitions** **307.2.4.1.1-For Compaction:** **401.6.1-Quality Control Testing**	**1st time to Committee.** Specification Change to Section 101 Definition Of Terms, Section 307-Crushed Aggregate Base Course, Section 401-Asphalt Base, Wearing, and Patching and Leveling Courses, 410-Asphalt Base and Wearing Courses, Percent Within Limits (PWL), Section 514-Roller Compacted Concrete, Section 626-Retaining Wall Systems,

20241002 – October Specifications Committee Meeting

	401.6.4.1-Density Testing:
	401.6.4.1.1-Gauge Comparison
	401.6.4.2-Lot-by-Lot Testing:
	401.6.4.3-Roller Pass Testing
	401.13.3-:
	
	410.6.1-Quailty Control Testing:
	
	514.4.2.3-Density Testing:
	
	626.5.3.4-Acceptance:
	
	716.5-Acceptance of Embankment and Subgrade:
	
	D. Brayack
		and Section 716-Embankment and Subgrade Material. The revision adds the definition for Moisture/Density Gauge resulting in the removal of the word "nuclear".
		
		1. **Section 101**
		   a. **101.2-Definitions:**
		2. **Section 307**
		   a. **307.2.4.1.1-For Compaction:**
		3. **Section 401**
		   a. **401.6.1-Quality Control Testing**
		   b. **401.6.4.1-Density Testing:**
		   c. **401.6.4.1.1-Gauge Comparison**
		   d. **401.6.4.2-Lot-by-Lot Testing:**
		   e. **401.6.4.3-Roller Pass Testing:**
		   f. **401.13.3-:**
		4. **Section 410**
		   a. **410.6.1-Quailty Control Testing:**
		5. **Section 514**
		   a. **514.4.2.3-Density Testing:**
		6. **Section 626**
		   a. **626.5.3.4-Acceptance:**
		7. **Section 715**
		   a. **716.5-Acceptance of Embankment and Subgrade:**
		
		The specification is redline copy showing the revision.

106	**106.3-Samples** D. Brayack	**1st time to Committee.** Specification Change to 106-Control of Materials. The revision gives reference to the MP and provides e-ticketing requirements for precast concrete products, pipe, and reinforcing steel. The specification is redline copy showing the revision.
420 405	**420.2.3-Asphalt Emulsion-CSS-1hM or CQS-1hM:** & 405.2.3 J. Adkins	**1st time to Committee.** Specification Change to 420- Single / Multiple Course Micro Surfacing. A typo in the title. A provisional update. *These will not be voted on. Just showing for awareness.* The specification is redline copy showing the revision.
601	**601.3-Proportioning** **601.4-Testing**	**1st time to Committee.** Specification Change to 601-Structurual Concrete. The Revision replaces the Rapid Chloride Permeability test with the Surface Resistivity test. It also includes price adjustments based upon the results.

Also a provisional update to 405.

20241002 – October Specifications Committee Meeting

	A. Thaxton	The specification is redline copy showing the revision.
604	**604.15-Pay Items** J. Adkins	**1st time to Committee.** Specification Change to 604-Pipe Culverts. Revision adds numerical value to Z2 Metal Corrugations column. The specification is redline copy showing the revision.
685	**685.1.3-Phase Three** **687.3.6-Shop Painting Metal Structures** **688.5.4-Surface Preparation.** C. Preston	**1st time to Committee.** Specification Change to Section 685-Bridge Cleaning, Section 687-Shop Painting Metal Structures, and Section 688-Field Painting of Metal Structures. The revision adds/references materials acceptance requirements for soluble salt removers. Any products meeting these requirements can be placed on the MCS&T APL for Soluble Salt Removers (688.002.003). 1. 685.1.3-Phase Three 2. 687.3.6-Shop Painting Metal Structures 3. 688.5.4-Surface Preparation The specification is redline copy showing the revision.

2024 Specifications Committee

The Specification Committee typically meet every other month; on the first Wednesday at 9:00am. 2024 meetings will be held in **February (2/7), April (4/3), June (6/12), August (8/7), October (10/2), and December (12/4).** *Calendar subject to change, updates will be given, as needed.*

Deadline for new items & updates to these provisions is November 4, 2024.

If you are the 'champion' of any specification changes and/or project specific special provisions currently in the Specification Committee, it is your responsibility to edit/update/modify them in a timely manner per comments and discussion in Spec Committee. *Failure to submit updates may result in removal of item and/or delays.*

Comments

Comments are requested for Specifications Changes and Project Specific Special Provisions as they help in the decision-making process. Please send comments by Friday prior to the meeting!

Please Send Comments to either: **Dee.L.Begley@wv.gov** or **Janie.M.Adkins@wv.gov**

File Format Structure and Progression of items thru Specifications Committee

The purpose of the below protocol is to provide guidance on the file structure of Proposed Specifications & Project Specific Provisions as they progress through Specifications Committee. This procedure would facilitate a means of tracking changes from meeting to meeting as the agenda & provisions are posted publicly online on the Spec Committee website.

20241002 – October Specifications Committee Meeting

TYPES OF PROVISIONS:

There are three standard types of provisions typically discussed in committee:

1. **Specification Changes** – These are permanent changes to the WVDOH Standard Specifications.
    - Unless inserted into a project proposal, these changes typically go into effect in January (of subsequent year) with the Supplemental Specifications
2. **Project Specific Special Provisions (SP)** – Are applied to specifically designated projects.
3. **Updates to previously approved SP** – Changes/edits/updated to SP that have been approved by spec committee.

NEW BUSINESS ITEMS:

New items should be setup & submitted in the following format along with a brief overview of the item or reason for the change:

1. **Specification Changes** – Show as red-line copy (see note)
2. **Project Specific Special Provisions (SP)** – Will be shown in all black.
3. **Updates to approved SP** – Shown as red-line copy.

NOTE: Red-line copy is a form of editing which indicates removal or addition of text. You can redline a Microsoft Word document by using the built-in "Track Changes" feature.

OLD BUSINESS ITEMS:

Updated provisions that were discussed at the last committee meeting should be setup in the following format:

- Redline copy from prior meeting would not be shown.
- Redline copy of new changes/updates (from previous meeting)

PROGRESSION OF ITEMS THRU COMMITTEE AND APPROVAL:

Depending on how important the project and/or comments/discussion of item at previous meeting, then several things can happen in no particular order.

- Few comments/discussion/minor changes…will recommend approval of item at next meeting.
- A lot of comments/discussion…will not recommend approval at next meeting; item will be updated and reviewed again at the next meeting.
- SPs in committee may be used in advertised project. Hope to work to address comments & finish approving at subsequent meeting.

2023 Standard Specification Roads and Bridges

Print Version:

WVDOH Employees-contact us or stop by Technical Support

Industry-We have an order form on our webpage here:

- https://transportation.wv.gov/highways/TechnicalSupport/specifications/Documents/SpecBookOrderForm_20230925.pdf

2024 Supplemental Specifications

The 2024 Supplemental is posted on our webpage.

- https://transportation.wv.gov/highways/TechnicalSupport/specifications/Pages/default.aspx

DRAFT

July 10, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SUPPLEMENTAL SPECIFICATION

FOR

SECTION 506
CONCRETE PAVEMENT REPAIR

506.3-PROPORTIONING:

ADD THE FOLLOWING TO THE END OF THE SUBSECTION:

Portland cement concrete for patching concrete pavement shall meet the requirements of Section 501, or Class B or Modified Class B as specified in Section 601, except that it shall be shown by compressive strength tests, in the approved mix design, that the concrete mix shall attain 2,000 psi prior to the time at which the pavement will be opened to traffic. Also, the maximum water-cement ratio (w/c) shall be 0.44, and an AASHTO number 8 (No. 8) coarse aggregate shall be required in Type II repairs with a depth of three (3) inches or less.

Type III repairs may be placed simultaneously with Type II repairs. When constructed in this manner, the same concrete mix shall be used in both repair types.

Prior to the start of work, the Contractor shall submit the mix proportions and recent compressive strength test data for the specified age at which the concrete is to be opened to traffic.

The Contractor may elect to use a mobile, continuous volumetric mixer in compliance with ASTM C685 at the patching location in lieu of a batch plant. A mobile, continuous volumetric mixer is defined as a truck mounted system where each component is automatically proportioned out for a selected batch size from on-board storage bins and automatically fed into a mixing unit to produce a mix complying with the requirements of 506.2. The unit shall be calibrated according to the manufacturer's recommendations by the Contractor in the presence of the Engineer before any placements are made on the project. Copies of all calibration form/calculations shall be submitted to the Engineer. A trial batch of at least 2 cubic yards shall be produced from the mobile, continuous volumetric mixer prior to placement of any patches on the project. Equip each truck with a ¼ cubic yard box constructed of suitable rigid materials for calibration purposes. The trial batch shall be accomplished by the Contractor under the observation of the Engineer. Trial batches will be sampled and tested by the Engineer. Trial batches will be sampled and tested by the Engineer to determine compliance with the specifications on the mix produced from the mobile, continuous volumetric mixer for slump, air content, and compressive strength.

DRAFT

June 26, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SUPPLEMENTAL SPECIFICATION

FOR

SECTION 514
ROLLER COMPACTED CONCRETE

514.4-TESTING:

514.4.1-Test Methods:

REMOVE AND ADD THE FOLLOWING TO THE TABLE:

Standard Practice for Molding Roller-Compacted Concrete in Cylinder Molds Using a Vibrating Hammer	ASTM C1435
Compressive Strength of Cylindrical Concrete Specimens	AASHTO T 22
Making and Curing of Concrete Specimens	~~AASHTO T 23~~ AASHTO R100
Obtaining and Testing Drilled Core Specimens	AASHTO T 24
Measuring Length of Drilled Concrete Cores	AASHTO T 148
Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying	ASTM C566
Moisture-Density Relations of Soils using a ~~4.54 kg (~~10 lb.~~)~~ Rammer and a ~~457 mm (~~18 inches~~)~~ Drop	AASHTO T 180

514.4.2-Contractor's Quality Control:

514.4.2.2-Testing for Opening Pavement to Traffic:

REMOVE AND ADD THE FOLLOWING TO THE FIRST PARAGRAPH OF THE SUBSECTION:

A minimum of three sets of compressive strength specimens shall be made for each day's paving operation. These compressive strength specimens shall be fabricated in accordance with ASTM C1435, and under the direct observation of the Engineer. A set of specimens consists of three cylinders. Field cure the specimens in accordance with ~~AASHTO T 23~~ AASHTO R100. Test one cylinder from each set of these cylinders for compressive strength in accordance with AASHTO T 22 at each of the following ages under the direct observation of the Engineer: 3 days, 5 days, and 7 days. The compressive strength of each set of cylinders shall be the average of the three specimens except that if

one specimen shows evidence of improper sampling, molding, or testing, it shall be discarded and the remaining two strengths averaged. Should more than one specimen representing a given test show definite defects due to improper sampling, molding, or testing, the entire test shall be discarded.

DRAFT

August 29, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SUPPLEMENTAL SPECIFICATION

FOR

SECTION 603
PRESTRESSED CONCRETE MEMBERS

603.6-CONCRETE:

603.6.2-Mix Design:

603.6.2.1-Class S-P Concrete Mix Design Testing:

REMOVE AND REPLACE THE FOLLOWING IN TABLE 603.6.2.1C:

TABLE 603.6.2.1C

Hardened Property Test	Total # Specimens	Specimen Size	Age at Testing	Magnitude of Loading	Approval Condition
Compressive Strength (AASHTO T 22)	7	4”x8” or 6”x12” cylinders	1 @ 24 ± 2 hrs. 1 @ 3days ± 2 hrs. 1 @ 7days ± 2 hrs. 1 @ 14days ± 2 hrs. 3 @ 28days ± 4 hrs.	Load Until Failure	per Design
Modulus of Elasticity[b] (ASTM C469)	7	6”x12” cylinders	1 @ 3days ± 2 hrs. 1 @ 7days ± 2 hrs. 1 @ 14days ± 2 hrs. 3 @ 28days ± 4 hrs.	40% of compressive strength (obtained above)	$\geq 57{,}000\sqrt{f'_c}$ [a]
Creep[b] (ASTM C512)	8 total (3 loaded, 3 remain unloaded, 2 tested for compressive strength)	6”x12” cylinders	72 ± 2 hours at age of initial loading	40% of compressive strength at time of loading	Creep Coefficient [c] ≤ 1.19 at 90 days [a]
Length Change (ASTM C157)	3	3”x3”x11” prisms	56 days	28-day cure per ASTM C157 then Air Storage for 28-days	≤ 0.0002 at 28 days of Air Storage [a]

TABLE 603.6.2.1C

Hardened Property Test	Total # Specimens	Specimen Size	Age at Testing	Magnitude of Loading	Approval Condition
~~Rapid Chloride~~ Concrete Surface Resistivity [b] ~~Permeability~~ (AASHTO T358 ~~AASHTO T 277~~)	3	4"x8~~2~~" ~~disc specimen~~ cylinders	~~56 days or~~ 28 days	~~60.0 ± 0.1 V~~	~~≤ 1500 coulombs (56 days) or ≤ 2000 coulombs (28 days)~~ > 30 kΩ-cm
Freeze-Thaw Resistance (ASTM C666-Procedure A)[b]	3	3"x4"x16" prisms	28 day cure prior to testing	300 cycles (0°F to 40°F)	Durability Factor ≥ 80

a. If the values obtained from testing the Class S-P mix do not meet the specified values in Table 603.6.2.1C, then the Fabricator's Engineer may submit calculations for prestress losses, camber, and long term deflections to the Division for review in accordance with Section 105.2.1.1, the Division Approval Method for shop drawings. If the Fabricator's calculations show that the values exceeding the specified values in Table 603.6.2.1C will not adversely affect the prestress losses, camber, and long term deflections, and the Division approves these calculations, then the Class S-P mix in question may be used to fabricate prestressed bridge members.

b. After the discontinuation of steam curing, test specimens shall be removed from the molds within 23.5 ± 0.5 hours and moist cured in the laboratory at a temperature between 73.5 ± 3.5 °F until the time of test. Freeze-Thaw Resistance testing shall begin when the specimens are at an age of 28 days.

c. The Creep Coefficient shall be defined as the Creep Strain at 90 days divided by the Initial Elastic Strain at the Time of Initial Loading. The Initial Elastic Strain shall be determined within 2 minutes after the application of the initial load.

DRAFT

June 24, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SUPPLEMENTAL SPECIFICATIONS

FOR

SECTION 623
PNEUMATICALLY APPLIED MORTAR OR CONCRETE (SHOTCRETE)

623.2-MATERIALS:

DELETE THE FOLLOWING IN THE TABLE AND FOOTNOTES AND REPLACE WITH THE FOLLOWING:

MATERIAL	SUBSECTION OR STANDARD
Accelerating Admixtures	707.13
Air-Entraining Admixtures	707.1
Coarse Aggregate	703.1, 703.2
Curing Materials	~~7076.~~707.6-707.10
Fibers~~*~~	~~ASTM C1116~~715.3
Fine Aggregate	702.1
Portland Cement	701.1, 701.3
Supplementary Cementitious Materials**	707.4
Reinforcing Steel	709.1, 709.3, 709.4
Water	715.7
Water Reducing Admixtures	707.3
Water Reducing, Accelerating Admixtures	707.14
Water Reducing, Retarding Admixtures	707.2

~~*~~ ~~ASTM C1116, Type II or III. Provide a minimum dosage of 1.5 pounds per cubic yard. Use fibers that are a minimum of 1/2 inch length, monofilament or collated fibrillated microfibers.~~ The fibers selected for shotcrete shall be of suitable dimensions to not cause the clotting or clogging of concrete in the shotcrete delivery equipment. The contractor shall verify with the fiber manufacturer that their fiber selection is suitable for their equipment then submit this verification in writing to the Engineer.

** The use of a supplementary cementitious materials will not be permitted when a blended hydraulic cement is used.

DRAFT

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SPECIAL PROVISION

FOR

STATE PROJECT NUMBER: _____

FEDERAL PROJECT NUMBER: _____

SECTION 655
MATTING FOR EROSION CONTROL

655.1-DESCRIPTION:

ADD THE FOLLOWING SUBSECTION:

655.1.1-Tied Concrete Block Erosion Mat: This work shall consist of furnishing and placing the Tied Concrete Block Erosion Control Mat (TCBM) in accordance with this Special Provision and in reasonably close conformity with the lines, grades, design, and dimensions shown on the plans.

The TCBM shall be manufactured or field fabricated from integrally formed individual concrete blocks tied together with high strength geogrid or pre-approved cable system.

655.2-MATERIALS:

ADD THE FOLLOWING SUB-SECTIONS:

655.2.1-Panel: The concrete blocks, cables, geogrid, fittings and other applicable elements shall be manufactured or fabricated into mats.

655.2.2-Concrete Blocks: Concrete block shall be tapered, beveled, and interlocked. The blocks shall incorporate interlocking surfaces or connections that prevent lateral displacement of the blocks within the mats when they are lifted for placement. Blocks shall exhibit resistance to mild concentrations of acids, alkalis, and solvents.

All Concrete Mix Designs which will be used on products fabricated for the WVDOH must be submitted for review & approval, prior to the start of fabrication. Sampling and testing of component materials shall be done in accordance with MP 603.02.10.

Blocks shall be wet-cast and conform to the requirements of MP 604.02.40 and Table 655.2.2. Concrete cylinders shall be made for compressive strength testing with 6-inch by 12-inch or 4-inch by 8-inch molds. The cylinders are to be cured in the same area as the products

for which they represent (Field Cured as outlined in AASHTO T23) until tested to create a curing environment similar to the product that they represent. A compressive strength test shall consist of the average result of a set of cylinders, which is at least two cylinders.

A minimum of one set of compressive strength cylinders shall be fabricated for every 50 yd^3 of concrete that is produced, or once per half-day of production, whichever is less, to verify that the requirements of Table 655.2.2 are met. Both the form removal strength and the 28-day strength must be confirmed by a set of cylinders. Cylinders shall be the same size as those used in the initial approved mix design.

For conventional concrete, slump, temperature, and air content tests shall be conducted on the first batch of concrete each day and every time that cylinders are fabricated. For SCC mixes, spread, temperature, and air content tests shall be conducted on every batch. For all types of concrete, unit weight and yield tests shall be conducted on the first batch of concrete each day and thereafter as deemed necessary by Quality Control and Quality Assurance Personnel. The Fabricator shall perform an absorption test on one random block per five days of production in accordance with ASTM C642-13. After fabrication is completed and prior to shipment each mat shall be inspected to insure it meets all specification requirements and does not contain any defects, the Inspector will stamp the precast product invoice as accepted by MCS&T Division and provide a 7-digit Laboratory Reference Number for shipment.

TABLE 655.2.2
Physical Requirements

Minimum 28- day Compressive Strength (AASHTO T22 and T23)	Maximum Water Absorption after immersion and boiling (ASTM C642)	Air Content AASHTO T 152
4,000 psi (28 Mpa)	9.0%	7 ± 2%

*Acceptance may also be from a manufacturer based on the test data of the product.

655.2.3-Polypropylene Geogrid: The TCBM shall be constructed of a high strength, rough service, low elongating, and continuous filament polypropylene geogrid with an acrylic coating. Interlocking geogrid shall have the following physical properties:

Mass/Unit Area	ASTM D-5261 7.0 oz./yd2 (240 g/m2)
Aperture Size	ASTM D-5261 7.0 oz./yd2 (240 g/m2)
Wide Width Tensile Strength	Machine Direction (MD) ASTM D-6637 2,055 lb./ft. (30 kN/m)
	Cross Machine Direction (CMD) ASTM D-6637 2,055 lb./ft. (30 kN/m)
Elongation at Break	ASTM D-6637 6 % (6%)
Tensile Strength @ 2%	Machine Direction (MD) ASTM D-6637 822 lb./ft. (12 kN/m)
	Cross Machine Direction (CMD) ASTM D-6637 822 lb./ft. (12 kN/m)
Tensile Strength @ 5%	Machine Direction (MD) ASTM D-6637 1,640 lb./ft. (24 kN/m)
	Cross Machine Direction (CMD) ASTM D-6637 1,640 lb./ft. (24 kN/m)

Tensile Modulus @ 2%	Machine Direction (MD) ASTM D-6637 41,100 lb./ft. (600 kN/m)
	Cross Machine Direction (CMD) ASTM D-6637 41,100 lb./ft. (600 kN/m)
Tensile Modulus @ 5%	Machine Direction (MD) ASTM D-6637 32,900 lb./ft. (480 kN/m)
	Cross Machine Direction (CMD) ASTM D-6637 32,900 lb./ft. (480 kN/m)

655.2.4-Underlayment: The backing material shall be rolled up with the TCBM and shall include the minimum of a double-net excelsior (wood fiber) blanket so when the system is unrolled the backing becomes the underlayment to stabilize the soils and promote growth of vegetation, unless otherwise specified on the plans. Alternate underlayment options include permanent erosion control matting per 715.24.2 type A and engineering fabric for erosion control per 715.11.6.

655.2.5-Transportation, Handling, and Storage: Upon delivery to the project, the Contractor shall inspect the TCBM for type, size, quantity, quality, and condition, to ensure that the proper material has been delivered and no damage occurred during transportation. Defects or damage will be cause for rejection, and immediate steps shall be taken to replace, at no additional cost.

TCBM with excelsior fiber backing may be left exposed for up to 30 days. If exposure will exceed 30 days, the rolls must be tarped or otherwise covered to minimize UV exposure.

655.2.6-Visual Inspection: All units shall be free of defects that would interfere with the proper placing of the unit or impair the strength and permanence of the overall system.

Surface cracks incidental to the normal manufacture of concrete shall not be deemed grounds for rejection. Cracks exceeding 0.25 inches in width and/or 1.0 inch in depth shall be deemed grounds for rejection and unit replacement.

Surface chipping resulting from customary methods of manufacture, shipping, handling and installation shall not be grounds for rejection. Chipping resulting in a weight loss exceeding 15% of the average weight of a concrete unit shall be deemed grounds for rejection and unit replacement.

CONSTRUCTION METHODS

655.3-PLACING:

ADD THE FOLLOWING SUB-SECTIONS:

655.3.8-Tied Concrete Block Erosion Mat:

655.3.8.1-Subgrade Preparation: The prepared subgrade shall provide a firm, unyielding foundation for the mats. The subgrade shall be prepared as detailed on the plans. Subgrade surface shall be free of any debris, protrusions, rocks, sticks, roots or other hindrances which would result in an individual block being raised more than ¾" above the adjoining blocks. Undulations, rolls, knolls and rises in the subgrade to which the TCBM is able to contour over and maintain intimate contact with the subgrade will be allowed. Apply seed directly to the prepared soil prior to installation of mats. Use seed and/or topsoil per project specifications. Install mats to the line and grade shown on the plans and

according to the manufacturer's installation guidelines. The manufacturer or authorized representative will provide technical assistance during installation as needed.

655.3.8.2-Anchoring: The upstream end of the TCBM is to be embedded 18 inches to prevent undermining of the mat. This also provides anchorage when the mats are installed on steeper slopes. Edges exposed to concentrated flows, such as side channels, shall also be embedded 18 inches. Edges exposed to sheet flow shall have the row of blocks along that edge embedded into the soil.

In instances where the TCBM cannot be embedded into the soil, such as when it is placed on a rock foundation, mechanical anchorage may be required. The polypropylene grid cast into the concrete blocks shall be attached to the anchoring system as indicated on the Contract Drawings. An engineered anchoring system, such as a percussion anchor that loops around lengths of rebar placed over the grid and in between the blocks, may be used. The design and layout of the anchoring system shall be by the Engineer, or a party designated by the Engineer.

The site should allow for manipulation of the mat during installation to achieve proper positioning and placement through the use of standard construction equipment including, but not limited to; excavator, forklift, skid-steer, or other under supervision of approved manufacturer representative.

655.3.8.3-Panel Seaming: Panel seams (Channel and Slopes) perpendicular to the hydraulic flow must be overlapped. The downstream panel will be terminated and properly anchored according to Contract Drawings. The upstream panel will then overlap the downstream panel by 18 to 24 inches. If no hydraulic or overland flow is expected, butting the seams together is acceptable. A 4 foot section of erosion control matting is used with 2 foot being placed under the mats on each side of the seam.

655.7-PAY ITEMS:

ADD THE FOLLOWING ITEM TO THE TABLE:

ITEM	DESCRIPTION	UNIT
655002-002	Tied Concrete Block Mattress	Square Yard

DRAFT

June 18, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SUPPLEMENTAL SPECIFICATION

FOR

SECTION 708
JOINT MATERIALS

708.3-JOINT AND CRACK SEALANT, HOT-POURED FOR CONCRETE AND ASPHALT PAVEMENTS:

ADD THE FOLLOWING SENTENCE TO THE SUBSECTION:

This material shall meet the requirements of ASTM D6690 and shall be evaluated by AASHTO Product Evaluation and Audit Solutions. Unless otherwise specified, Type II sealant shall be used. Hot-applied asphalt aggregate-filled materials shall be evaluated by AASHTO Product Evaluation and Audit Solutions and shall meet the requirements of ASTM D8260.

DRAFT

~~April 5, 2023~~ July 2, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SUPPLEMENTAL SPECIFICATION

FOR

SECTION 712
GUARDRAIL AND FENCE

712.4-GALVANIZED STEEL DEEP BEAM GUARDRAIL, FASTENERS AND ANCHOR BOLTS:

ADD THE FOLLOWING SENTENCE TO THE END OF THE SUBSECTION:

Galvanized steel deep beam guardrail, fasteners and anchor bolts shall be evaluated by AASHTO Product Evaluation and Audit Solutions. The AASHTO Product Evaluation and Audit Solutions testing results shall meet the requirements of AASHTO M 180. The rail shall be Type II, Class A. Fabricators of guardrail who supply to WVDOH projects shall meet MP 712.04.50.

DRAFT

~~January 17, 2023~~ June 24, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SUPPLEMENTAL SPECIFICATION

FOR

SECTION 715
MISCELLANEOUS MATERIALS

DELETE SUBSECTION 715.3 AND REPLACE WITH THE FOLLOWING:

715.3-FIBERS FOR PORTLAND CEMENT CONCRETE:

Fibers for Portland cement concrete shall be pre-approved fibers from the WVDOH approved list of fibers for Portland cement concrete. ~~The requirements for shotcrete fibers are separate and are addressed in Section 623.2.~~ Product submittals shall include: a completed Form HL-468 (available on the WVDOH Materials Division Web Page), a copy of the technical data sheet, the current Material Safety Data Sheet (MSDS), and the independent ~~AAHSTO~~ AASHTO accredited laboratory testing data meeting the requirements of 715.3.3. Any incomplete submittals will not be evaluated for inclusion on the WVDOH approved list of fibers for Portland cement concrete.

715.3.1-Definitions:

Micro Fibers: Fibers with diameters less than 0.012 inch.

Macro Fibers: Fibers with diameters equal to or greater than 0.012 inch.

Equivalent Diameter: Diameter of a circle having an area equal to the average cross-sectional area of a fiber.

Balling: A 1-inch diameter or greater conglomerate of fibers at the point of placement.

Aspect Ratio: Length/Equivalent Diameter, Ratio.

Hybrid Fibers: The combination of macro and micro fibers in a mix design containing fibers for Portland cement concrete.

715.3.2-Materials: Fibers shall be synthetic Type III in accordance with ASTM C1116 and ASTM D7508. ~~Hybrid fibers shall be required for use in bridge decks.~~ Type II fibers may be used in shotcrete. The use of hybrid fibers shall be permitted.

715.3.3 Fibers for Post Crack Tensile and Flexural Capacity, and Plastic Shrinkage Cracking Control: Fibers shall meet the requirements of Table 715.3.3 unless solely intended for plastic shrinkage cracking control which shall only be required to meet the requirements of the crack reduction ratio of Table 715.3.3.

TABLE 715.3.3 Minimum Required Fiber-Reinforced Concrete Properties

Required Hardened Fiber-Reinforced Concrete Properties	**Specification**	**Requirement**
Equivalent Flexural Strength $f^{150}_{e\ 150}$, min. [a]	ASTM C1609 [b]	~~150~~ 160 psi.
~~Equivalent Flexural Strength Ratio $R^{150}_{T,150}$, min.~~ [a]	~~ASTM C1609~~ [b]	~~25%~~
Crack Reduction Ratio, (CRR), min. reduction	ASTM C1579	≥ 85%

[a] The specimens shall be tested when the concrete ultimate flexural strength at peak stress (f_p) is a minimum of 650 psi. For 6 inch by 6 inch by 20 inch beam containing fibers the maximum allowable net deflection value of L/150 of the 18 inch span length is 0.12 inches.

[b] ASTM C1609 will use roller supports that meet the requirements of ASTM C1812.

SECTION BREAK

NEW BUSINESS ITEMS

DRAFT

~~January 24, 2022~~ July 31, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SPECIAL PROVISION

FOR

STATE PROJECT NUMBER: _____

FEDERAL PROJECT NUMBER: _____

SUBCONTRACTOR PROMPT PAYMENT

1.0-GENERAL REQUIREMENTS:

Contractors shall pay subcontractors for work satisfactorily performed by the subcontractor within fourteen (14) calendar days of the Contractor's receipt of Division of ~~Highways (Division)~~ payment from the State for subcontracted work. Acceptance of the subcontracted work by the Department of Transportation/Division of Highways (Department) shall constitute satisfactory completion of subcontracted work. ~~Failure and penalties for noncompliance are detailed in Section 3 below.~~

Contractors must utilize the AASHTOWare Project™ Civil Rights & Labor (CRL) module to provide the Department proof of payment to all subcontractors by electronically entering all payments made for each estimate. The Contractor shall also require all subcontractors to review and endorse receipt of payments in CRL.

All subcontracting agreements made by the Contractor shall include this Special Provision. Refer to the Special Provision for Electronic Submission of Payrolls and Subcontractor Payment for information regarding CRL system requirements.

2.0-WITHHOLDING PAYMENT RESTRICTIONS:

~~The~~ Contractors may delay or postpone payment to a subcontractor for good cause. This may include, but shall not be limited to, failure by the subcontractor to pay for labor, supplies, or materials, or to provide any required documentation. Prior to any delay or postponement of payment, the Contractor shall provide written documentation to the Department's Civil Rights Compliance Division (Division) for approval. The Contractor shall also ~~provide written notification~~ notify the affected subcontractor of any such good cause ~~to the affected subcontractor at the same time~~ when it is submitted to the Division for approval. Only after written approval of the Division's acceptance of the Contractor's good cause, shall the Contractor be allowed to postpone or delay any payment.

If the subcontractor does not receive payment within ~~the required~~ fourteen (14) calendar days, the subcontractor shall give the Division written notice of non-payment ~~to the Engineer~~.

The notice shall include:

(a) ~~State~~ the name of the Prime Contractor, the project contract identification number, ~~and~~ the estimate number, and the quantity in dispute.
(b) ~~Provide~~ an itemized summary on which the quantity is based; and
(c) any additional information that may be relevant to the dispute concerning payment by the Prime Contractor.

3.0-PENALTIES FOR NON-COMPLIANCE:

~~Unless otherwise provided for by Section 2 above, the Contractor shall provide the Division proof of payment for subcontracted work on the *West Virginia Department of Transportation Certification of Subcontract Payments* form attached at the end of this provision separately for each Subcontractor. This documentation will be provided to the Division within two Estimates of the Progress Estimate in which there is subcontracted work performed and accepted by the Division.~~\

Failure by the Contractor to ~~produce documentation of prompt payment within the duration listed above~~ pay any subcontractor within fourteen (14) calendar days may result in the suspension of ~~the third and~~ any future progress estimates for payment to a Contractor by the ~~Division~~ Department until the Contractor can demonstrate that the issues preventing ~~submission of documentation~~ payment ~~has~~ have been resolved and that prompt payment for subcontracted work will be maintained throughout the remaining life of the contract.

~~In addition to the above~~Additionally, continued failure to ~~promptly~~ pay subcontractors promptly may result in a contractor's disqualification ~~of a contractor~~ as non-responsible or such other penalty as the ~~Division~~ Department ~~determines is~~ deems appropriate. ~~All subcontracting agreements made by the contractor as provided in Subsection 108.1 shall include this special provision as incorporated in the contract.~~

4.0-RESOLUTION OF DISPUTES:

When the steps from ~~step two above~~ Section 2.0 result in a dispute between the Contractor and subcontractor, the procedure for resolving the dispute is as follows:

(a) ~~—~~The Division will verbally contact the Contractor within 48 hours to ascertain whether the amount withheld is ~~an~~ undisputed ~~amount~~.
(b) If the Division determines that ~~a~~ part or all of the amount withheld is ~~an~~ undisputed ~~amount~~, ~~the Division~~ it will instruct the Contractor to pay the subcontractor the undisputed amount within three (3) calendar days. The instructions will be confirmed in writing.
(c) The Division will verbally communicate ~~to the subcontractor~~ the ~~results of the~~ discussion results with the Contractor to the subcontractor and confirm the results in writing.
(d) If the Contractor fails to pay the subcontractor the undisputed amount within ~~the specified~~ three (3) calendar days, the subcontractor may report the non-payment in writing to the Division.

Upon ~~receipt of~~ receiving notification of non-payment ~~from the subcontractor~~, the Division will schedule a meeting with the Contractor, the subcontractor, the District Construction Engineer, the Regional Construction Engineer, and the Project Supervisor to verify and discuss the ~~nonpayment~~ issue. Representatives from the Federal Highway Administration and the Department's Contract Administration Division may also be included. This meeting will be held at ~~the Division Office~~ a location determined by the

Division no later than ten (10) calendar days after receiving notice ~~from the subcontractor~~ of non-payment.

(e) ~~Invited to this meeting will be the Contractor, the subcontractor, the District Construction Engineer, FHWA Area Person, DOH Regional Construction Engineer, and the Engineer.~~ The purpose of this meeting ~~will be~~ is to establish why payment was not made to the subcontractor in the required ~~time~~ period. If it is determined that the Contractor is delinquent in payment to the subcontractor, further progress payments ~~to the Contractor~~ may be withheld until the subcontractor is paid.

5.0-LEGAL RELATIONS AND PROGRESS:

If the payment is not made to the subcontractor within seven (7) calendar days after the Division determines that the Contractor is delinquent in paying the subcontractor and the ~~next~~ subsequent progress payment becomes due, the progress payment will not be processed, and a second meeting will be held at ~~the District Office~~ a location determined by the Division to address the dispute. ~~The second~~ This meeting will held ~~not~~ no later than five (5) calendar days after the close of the seven (7) day~~s period~~.

If the results of this second meeting reveal that payment to the subcontractor continues to be delinquent, the ~~Division~~ Department may order a suspension of work based ~~upon~~ on the failure of the Contractor's failure to carry out the provisions of the contract or may allow work to continue and withhold future progress payments as stated above.

The Contractor shall notify the ~~Engineer~~ Division when payment has been made to the subcontractor. The ~~Engineer~~ Division will verify the payment with the subcontractor to ensure payment was received.

Nothing in this provision will prevent the subcontractor from pursuing a claim with the surety under the Contractor's payment bond at any time.

DRAFT

~~January 24, 2022~~ July 31, 2024

~~WEST VIRGINIA DEPARTMENT OF TRANSPORTATION~~
~~CERTIFICATION OF SUBCONTRACTOR PAYMENTS~~

~~Federal Project No:~~ _____ ~~Prime Contractor:~~ _____ ~~Payment No.~~ _____

~~State Project No:~~ _____ ~~Subcontractor:~~ _____ ~~Estimate No.~~ _____

~~Tier Subcontractor:~~ _____

~~This payment is a:~~ ☐ ~~Partial Payment~~ ☐ ~~Final Payment~~

~~The undersigned Prime Contractor hereby certifies that payment was made as detailed below: (Attach more sheets, if necessary)~~

			~~Quantity Accepted and Paid~~		
~~Bid Item No.~~	~~Bid Item~~	~~Item Unit~~	~~This Estimate~~	~~Previous Est.~~	~~Total to Date~~
		~~**TOTALS**~~			

☐ ~~Approved Contract Adjustment (quantity)~~ _____

~~This certification is made under Federal and State laws concerning false statement. Supporting documentation for this payment is subject to audit and should be retained for a minimum of three (3) years from project acceptance date. In the event the subcontractor was not paid in accordance with affidavits submitted by the Prime Contractor, all documentation supporting the contractor's position should be submitted.~~

~~I declare under penalty of perjury, and any other applicable state or federal laws, that the statements made on this document are true and complete to the best of my knowledge, and that all subcontractors have been paid within fourteen (14) days after receiving payment for the work performed as described above.~~

~~Payment to the Prime Contractor for the above listed items was received on (date)~~ _____. ~~Check ID#~~_____

_____ _____

~~Prime Contractor~~ ~~Date~~ ~~Witness Signature~~ ~~Date~~

~~Prime Contractor: You must submit this form to the District Headquarters and to the Civil Rights Compliance Division – DBE Section at dot.eeo@wv.gov within five (5) business days of payments to all subcontractors for each payment every time.~~

DRAFT

~~August 18, 2021~~ August 22, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

PROJECT SPECIFIC SPECIAL PROVISION

FOR

STATE PROJECT NUMBER: _____

FEDERAL PROJECT NUMBER: _____

SECTION 207
EXCAVATION AND EMBANKMENT

207.1-DESCRIPTION:

ADD THE FOLLOWING:

207.1.1-Settlement Plate: The work specified in this section consists of the fabrication, installation, protection and maintenance of settlement plates in accordance with these Special Provisions, the details shown on the plans and as directed by the Engineer. The Contractor shall be responsible for the fabrication, installation, protection and maintenance of settlement plates.

The system of settlement plates is designed to enable the Engineer to observe and determine the magnitude and rate of embankment or subgrade settlement. The determination of the time at which the necessary consolidation has taken place and the embankment or subgrade may be released for additional lifts of fill or the next stages of construction will be determined by the Engineer on the basis of the data obtained from the combined settlement monitoring instrumentation.

207.2-MATERIALS:

ADD THE FOLLOWING:

207.2.3-Settlement Plate: The settlement plate assembly shall be constructed in accordance with the plate and stem options as shown on Settlement Plate Detail in the Bridge Plans. All iron pipe and fittings shall be fabricated from standard weight stock; all PVC pipe and fittings shall be Schedule 40; the sizes shall be as shown on Settlement Plate sheet in the Bridge Plans. Materials will be accepted on the basis of a visual inspection.

207.2.3.1-Installation and Monitoring: The settlement plates shall be installed after completion of clearing and grubbing below but prior to placing embankment and/or surcharge fill. The settlement plates shall be installed by the Contractor.

~~The settlement plate locations are presented in the following table:~~

~~Settlement Plate #~~	~~Roadway Station~~	~~Offset (ft)~~
~~SP-1~~	~~220+80~~	~~20'LT~~
~~SP-2~~	~~220+80~~	~~CL~~
~~SP-3~~	~~220+80~~	~~20' RT~~

An excavation slightly larger than the settlement plate shall be made to an elevation established by the Engineer. The excavation shall form a pit having a minimum depth of twelve (12) inches with a level bottom.

The plate shall be placed in the pit with one section of marker pipe attached. The attached marker pipe shall be five (5~~.0~~) feet in length as shown in Settlement Plate Detail in the Bridge Plans. The plate shall have full bearing and the marker pipe plumb before proceeding with the stem assembly. When realignment of the plate and marker pipe is necessary, the plate and pipe shall be removed and the pit bottom reshaped for proper alignment.

With plate and marker pipe in place, wrap the lower six (6) inches of marker pipe with oakum; slip one section of casing pipe over the marker pipe; and, lower the casing to uniformly encase the oakum seal while seating the casing on the plate as shown in Settlement Plate Detail in the Bridge Plans.

With marker pipe and casing centered with respect to each other and maintained in a vertical position, the pit shall be backfilled in layers by hand and thoroughly compacted by hand. Prior to backfilling the pit, the elevation of the top of the plate shall be determined. A maximum of one foot of soil cover can be placed to stabilize the settlement plates.

Each section of PVC casing shall be capped until the next section is added. The settlement plate stem shall be flagged and protected from construction vehicles and equipment. If the settlement plate assembly is disturbed, it shall be replaced in kind within 24 hours, unless otherwise directed by the Engineer.

The embankment or surcharge material in the immediate vicinity of the settlement plate stem shall be placed and compacted in accordance with the requirements of the Specifications, or as directed by the Engineer. Embankment or surcharge material within three (3) feet of the stem shall be placed and compacted by hand with non-impact, light vibratory plate compactors.

When surface of the embankment or surcharge reaches a level approximately two (2) feet below the top of the stem section in place, the next section of marker pipe and casing shall be installed, the casing shall be capped, and the stem flagged for protection. Added sections shall be five (5) feet in length.

As the height of the embankment or surcharge material increases, this procedure shall be repeated until the embankment and/or surcharge material placement is completed.

Settlement plate assemblies constructed within permanent embankment material shall remain in place and become the property of the West Virginia Division of Highways. Settlement plate assemblies constructed within temporary surcharge shall be removed as specified in project plans.

The Contractor will obtain and record all measurements and elevations necessary for the accurate determinations of settlement data following construction of the embankment or surcharge. Elevations shall be surveyed ~~once a week for a minimum of two (2) months after completion of fill placement~~at frequencies as directed in project plans. The surveying must be performed by leveling methods using instruments and methods to yield a vertical accuracy of plus or minus 0.002 feet. Establish a benchmark on stable ground that is not subject to settlement and is located away from any earthwork/construction activities. The settlement data should be provided to the ~~engineer~~ Engineer to evaluate when foundation construction can proceed. It is expected that construction of the abutment foundations can proceed once it is determined that the rate of settlement is less than 1/10 of an inch per week for at least two (2) consecutive weeks at each settlement plate location.

207.2.3.2-Protection and Maintenance: The settlement plate stem shall remain in a vertical position at all times during the life of ~~this Contract~~the required monitoring period. The Contractor shall operate his equipment in a manner to insure that settlement plate assemblies are not damaged or displaced laterally. Each assembly shall be clearly marked and flagged as approved by the Engineer and protective barricades shall be erected around each assembly. Stems deviating from a vertical position, becoming uncoupled or broken shall be repaired or replaced by the Contractor, as directed by the Engineer, at the Contractor's expense.

The Contractor will not be held responsible for repair or replacement of any settlement plate assembly which is made inoperable as a result of instability of the embankment caused by factors, which in the opinion of the Engineer, are beyond the control of the Contractor.

207.15-METHOD OF MEASUREMENT:

ADD THE FOLLOWING:

The quantity of work done will be the actual number of "Settlement Plate Assemblies", installed and maintained in a satisfactory operating condition until final acceptance of the project.

207.16-BASIS OF PAYMENT:

ADD THE FOLLOWING:

The quantities, determined as provided above, will be made at the contract price for ~~for~~ each assembly, which price and payment shall be full compensation for furnishing all material, labor and equipment for proper installation of the assembly, for protecting the assembly, for repair and replacing damaged assemblies and for all other work and incidentals necessary to complete the work.

207.17-PAY ITEM:

ADD THE FOLLOWING:

ITEM	DESCRIPTION	UNIT
207035-001	Settlement Plate Assembly	Each

DRAFT

August 29, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SUPPLEMENTAL SPECIFICATION

FOR

SECTION 101
DEFINITION OF TERMS

101.2-DEFINITIONS:

ADD THE FOLLOWING AS A NEW DEFINITION:

Moisture/Density Gauge-A Division approved device for testing the density and/or the moisture content of in-place material. The approval of these devices are described in MP 717.04.22.

DRAFT

August 29, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SUPPLEMENTAL SPECIFICATION

FOR

SECTION 307
CRUSHED AGGREGATE BASE COURSE

307.2-MATERIALS:

307.2.4-Acceptance Procedure:

307.2.4.1-Acceptance Plan:

307.2.4.1.1-For Compaction:

REMOVE THE FOLLOWING FROM THE FIRST PARAGRAPH OF THE SUBSECTION:

> Acceptance for compaction shall be on a lot by lot basis. A lot shall consist of a single layer of not more than 2,000 linear feet per width being placed. A lot shall be divided into five approximately equal sized sublots. One ~~nuclear~~ moisture and density measurement in accordance with applicable portions of Section 717 shall be made at a random location within each of the five sublots. The random locations shall be determined in accordance with MP 712.21.26. If the result of five density tests on a lot indicates that at least 80 percent (80%) of the material, in accordance with subsection 106.3.1 (West Virginia AP-A), has been compacted to the specified target percentage of dry density, the lot will be accepted. If less than 80 percent (80%) has been compacted to the specified target percentage of dry density, no additional material shall be placed on that layer until it has been reworked to meet the specified requirements. Reworking and retesting shall be at the expense of the Contractor. When the Division performs the testing in the evaluation of reworked lots, the testing will be at the expense of the Contractor at the unit cost specified in subsection 109.2.2.

DRAFT

September 5, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SUPPLEMENTAL SPECIFICATION

FOR

SECTION 401
ASPHALT BASE, WEARING, AND
PATCHING AND LEVELING COURSES

401.6-CONTRACTORS QUALITY CONTROL:

401.6.1-Quality Control Testing:

DELETE THE FOLLOWING IN THE SECOND PARAGRAPGH OF THE SUBSECTION:

The Contractor shall maintain necessary equipment and qualified personnel including at least one certified Asphalt Field and Compaction Technician at each project during paving operations. Additionally, a certified Asphalt Field and Compaction Technician with certification to perform ~~nuclear~~ density testing of asphalt pavements shall perform all testing necessary to assure compaction of the asphalt meets specification requirements.

401.6.4-Compaction:

401.6.4.1-Density Testing:

REMOVE AND ADD THE FOLLOWING TO THE SUBSECTION:

~~All~~ Gauge standardization and ~~procedures,~~ calibration ~~procedures and all Density testing conducted~~ shall be in accordance with the manufacturer's recommendations~~AASHTO T355 – Standard Method of Test for In-Place Density of Asphalt Mixtures by Nuclear Methods~~. Standard counts shall be within ± 2% for density and ± 4% for moisture from the manufacturer's standard counts. Density tests ~~Testing~~ shall be 1-minute tests conducted in the backscatter position ~~and follow AASHTO T355 with the exception that no gauge rotation will be required. All gauge tests shall be conducted~~ with the source end of the gauge in the direction of paving. The Gauges used for both QC and QA, shall ~~also~~ have a gauge comparison ~~tested~~ as prescribed in section 401.6.4.1.

401.6.4-Compaction:

401.6.4.1-Density Testing:

401.6.4.1.1-Gauge Comparison:

DELETE THE FOLLOWING IN THE FIRST PARAGRAPGH OF THE SUBSECTION:

For purposes of an accurate comparison, ~~nuclear~~ gauges used for QC and QA shall be compared using the following procedure. If an alternate gauge is brought to the project, repeat the following procedure. Note, this process is required for informational purposes however density readings for Acceptance testing will not be adjusted to compensate for any differences in readings between gauges. The gauge used for the Contractor's quality control testing shall be compared with the gauge used for the Division's verification testing at the same locations.

401.6.4-Compaction:

401.6.4.2-Lot-by-Lot Testing:

DELETE AND ADD THE FOLLOWING IN THE FIRST PARAGRAPGH OF THE SUBSECTION:

Density of the traveled lanes, shoulders, and Longitudinal Joint will be accepted in the field on a lot-by-lot basis. Lots will be established cumulatively and will be specific for each JMF. A normal lot size shall not exceed 1000 linear feet of paving, unless operational conditions or project size dictates otherwise. Each lot shall consist of five equal sublots. A standard sublot shall be 200 linear feet. Sublots shall be tested with randomly located ~~nuclear~~ density tests.

401.6.4-Compaction:

401.6.4.3-Roller Pass Testing:

DELETE AND ADD THE FOLLOWING TO THE SUBSECTION:

A Roller Pass Control Section shall be completed on a daily basis, when roadway conditions change where they would affect the compaction effort, or when the Engineer determines the current roller pass is unsatisfactory. A roller pass shall be established prior to the mat reaching the temperature specified in section 401.10.4.

If a project does not meet the criteria in section 401.6.4, testing for compaction shall be in accordance with the roller pass test method described in Section 401.6.4.2.

In addition, areas of trench paving, pavement widening, and pavement repairs shall be tested in accordance with the roller pass test method or to the satisfaction of the Engineer. A roller pass shall be conducted in the following manor:

1. The Roller Pass Control Section shall be conducted 100 feet beyond the initial transverse construction joint. If an additional roller pass is required by the Engineer conduct it immediately.
2. Apply four passes with the breakdown roller (a pass shall be defined as the entire roller traversing a spot on the pavement) to the roadway, then conduct two randomly located ~~nuclear~~ density test~~s~~ing within the section; record the results, the average, and the mat temperature at each test location.

3. Apply an additional two passes and repeat the ~~nuclear~~ density testing in the same locations; record the results, the average, and the mat temperature at each test location.
4. Repeat step 3 until one or more of the following conditions occur: (a) less than 5 kg/m^3 increase occurs between the average of two sets of readings, (b) the density of the material exceeds 97.0% Gmm, (c) one of the two test location "breaks over" (i.e. shows a decrease in density) after exceeding 92.0% of Gmm, or (d) the temperature of the mat has fallen below 175 °F.
5. Compute the Percent of Gmm using the average of the two readings and record on the worksheet.

If the mat begins to show signs of distress (such as excessive surface aggregate breakdown~~age~~ or mat cracking) before reaching 175 °F, then discontinue rolling and record the number of roller passes completed before the stress signs occurred. If a tender mix, as defined in Section 3.3, is encountered the Contractor may be allowed to continue rolling at lower temperatures if it can be demonstrated that additional densification can be achieved at a lower temperature without causing any pavement distress. Once ~~-~~the ~~-~~control section is completed, the density shall be equal to or greater than 92.0% of Gmm. If the density does not meet 92% of Gmm, repeat the procedure above immediately. If after two control sections the density still does not meet 92% of Gmm, the contractor shall apply the number of passes associated with the highest percent density, with a minimum of 8 passes, unless the Engineer determines more appropriate means. To help with this decision, an evaluation may be made of the existing pavement condition and any density test results obtained prior to construction of the test section will be reviewed.

If the density within the control section meets 92% of Gmm, conduct a proving section in the proceeding 1000 feet. Within the proving section, apply the established number of passes and conduct five randomly located ~~nuclear~~ density tests. The average of these five tests shall exceed a minimum density of 92% Gmm and be within ± 50.0 kg/m^3 of the average wet density determined in the Roller Ppass Ceontrol Ssection. If this is not achieved a new Rroller Ppass Control Ssection shall be conducted.

All data shall be submitted the Engineer on associated rRoller pass forms.

401.13-BASIS OF PAYMENT:

401.13.3-:

DELETE AND ADD THE FOLLOWING TO THE TABLE:

TABLE 401.13.3A

Adjustment of Contract Price for Pavement Mat Density	
Percent of Density	Percent of Contract Price to be Paid
Greater than 97 %	Note 1
93% to 97%	100
92%	99
88% to 91%	= 99 – 4*(92% - Percent density)
Less than 88%	= 834 – 10*(88% - Percent density) Note 2

DRAFT

August 29, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SUPPLEMENTAL SPECIFICATION

FOR

SECTION 410
ASPHALT BASE AND WEARING COURSES, PERCENT WITH LIMITS (PWL)

410.6-CONTRACTORS QUALITY CONTROL:

410.6.1-Quality Control Testing:

DELETE AND REMOVE THE FOLLOWING FROM THE SECOND PARAGRAPH OF THE SUBSECTION:

> The Contractor shall maintain necessary equipment and qualified personnel including at least one certified Asphalt Field and Compaction Technician at each project during paving operations. Additionally, a certified Asphalt Field and Compaction Technician with certification to perform ~~nuclear~~ density testing of asphalt pavements shall perform all testing necessary to assure compaction of the asphalt meets specification requirements.

DRAFT

August 29, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SUPPLEMENTAL SPECIFICATION

FOR

SECTION 514
ROLLER COMPACTED CONCRETE

514.4-TESTING:

514.4.1-Test Methods:

514.4.2.3-Density Testing:

REMOVE AND ADD THE FOLLOWING TO THE FIRST PARAGRAPH OF THE SUBSECTION:

Field density tests for quality control shall be performed by the contractor as soon as possible, but no later than 30 minutes after the completion of the rolling. The in-place density and moisture content shall be determined using a properly maintained ~~nuclear~~ moisture/~~-~~density gauge in accordance with the applicable provisions of MP 717.04.21. All testing shall be performed in direct transmission mode. Only wet density is used for evaluation.

DRAFT

August 29, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SUPPLEMENTAL SPECIFICATION

FOR

SECTION 626
RETAINING WALL SYSTEMS

626.5-MATERIALS:

626.5.3-Select Granular Backfill:

626.5.3.4-Acceptance:

REMOVE THE FOLLOWING FROM THE SECOND PARAGRAPH OF THE SUBSECTION:

Acceptance for compaction shall be on a lot-by-lot basis. A lot shall be divided into five approximately equal sized sub-lots. A sub-lot shall consist of the quantity of material to backfill a single lift for 100 feet of wall and at least one test per lift. One ~~nuclear~~ moisture and density measurement shall be made at a random location within each of the five sub-lots; random locations shall be determined in accordance with MP 712.21.26. For material having 40% or more retained on the ¾ inch (75mm) sieve, MP 700.00.24 shall be used to determine the target maximum dry density. For material having less than 40% retained on the ¾ inch (75 mm) sieve, the target dry density shall be the maximum dry density as determined by the AASHTO T-99 five point laboratory proctor performed on the material in accordance with section 626.5.3.1 (B). The moisture content of the material shall be maintained at a level sufficient to facilitate compaction. For applications where spread footings are used to support a bridge or other structural loads, the target percentage of dry density shall be 100% for other applications the target percentage of dry density shall be 95%. If the results of five density tests on a Lot indicates that at least 80% of the material, in accordance with 106.3.1 (West Virginia AP-A), has been compacted to the specified target percentage of dry density, the Lot will be accepted. If less than 80 % has been compacted to the specified target percentage of dry density and/or the moisture content is outside the tolerance range, no additional material shall be placed until the Lot has been reworked to meet the specified requirements. Reworking and retesting shall be at the expense of the Contractor. When the Division performs the testing in the evaluation of reworked Lots, the testing will be at the expense of the Contractor at the unit cost specified in subsection 109.2.2.

DRAFT

August 29, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SUPPLEMENTAL SPECIFICATION

FOR

SECTION 716
EMBANKMENT AND SUBGRADE MATERIAL

716.5-ACCEPTANCE OF EMBANKMENT AND SUBGRADE:

REMOVE THE FOLLOWING FROM THE FIRST PARAGRAPH OF THE SUBSECTION:

The density of the embankment and subgrade will be accepted by the Division on a lot to lot basis provided the lot conforms to the specifications. A lot shall contain five approximately equal sublots. A sublot shall consist of not more than 2,500 cu. yd. for embankment and 400 linear feet per working width for subgrade. The Contractor's quality control testing shall include one ~~nuclear~~ moisture and density measurement made at a random location within each of the sublots. Each lot shall be presented to the Engineer for acceptance. When a lot consists of more than one lift, the Contractor's quality control testing shall normally include testing on each lift. Testing for density shall be in accordance with subsections 716.3.2.1, or 716.3.2.2, whichever is applicable. The random locations shall be determined in accordance with MP 712.21.26. The Contractor's quality control testing will be evaluated for each lot and acceptance of the lot may be based either upon the Contractor's quality control testing or by independent testing performed by the Division. The acceptance decision will be made as soon as practicable after the Contractor has informed the Engineer that the lot is ready for acceptance.

DRAFT

July 29, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SUPPLEMENTAL SPECIFICATION

FOR

SECTION 106
CONTROL OF MATERIALS

106.3-SAMPLES:

REMOVE AND ADD THE FOLLOWING TO THE FOURTH PARAGRAPH AND ADD THE FOLLOWING SUBSECTION AFTER THE FOURTH PARAGRAPH:

The Contractor may submit for acceptance, materials that appear on the Division Approved Source/Product ~~Lising~~ Listing (APL). These submissions shall include a clear and legible invoice from the manufacturer and contain the product's approved lab number. Products that are not on the approved product list may be used on projects as long as these products meet the requirements for that material. Prospective new products for the approved product list shall follow the guidelines of MP 106.00.02 and MP 106.00.03.

Acceptance of materials via the APL shall be in accordance with MP 106.00.05. APL acceptance documentation shall include an E-ticketing for the following materials: all precast concrete products, all pipe, and all reinforcing steel. These E-tickets shall follow all guidelines established in Section 109.20.

August 27, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SUPPLEMENTAL SPECIFICATION

FOR

SECTION 405 & 420
PROVISIONAL UPDATES

405.2-MATERIALS:

REMOVE AND REPLACE THE FOLLOWING IN THE SUBSECTION:

405.2.3-Application Rate Design: The contractor shall perform a Chip Seal Design according to AASHTO ~~PP 82~~ R 102 and submit to the Engineer at least one week prior to starting work.

420.2-MATERIALS:

REMOVE THE FOLLOWING FROM THE TITLE IN 420.2.3:

420.2.3-Asphalt Emulsion ~~CSS-1hM or CQS-1hM~~:

DRAFT

September 4, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SUPPLEMENTAL SPECIFICATION

FOR

SECTION 601
STRUCTURAL CONCRETE

601.3-PROPORTIONING:

REMOVE AND ADD THE FOLLOWING CONTENTS TO SUBSECTION 601.3:

The proportions for any concrete designated as modified shall be submitted by the Contractor to the Engineer for approval. The Design 28 Day Compressive Strength shall be as shown in the plans. The contractor's mix design shall utilize Table 601.3.1, except the Target Cement Factor may be revised to obtain the modified strength.

Establishment of mixture proportions shall be coordinated with the manufacturer of the silica fume admixture.

Design mixture testing for Class H concrete shall be in accordance with MP 711.03.23 and shall include air content, slump, compressive strength, and ~~rapid chloride permeability tests. For establishment of mixture proportions, rapid chloride permeability tests shall be made on representative samples prepared and tested in accordance with AASHTO T 277. The rapid chloride permeability test specimens shall be tested at an age of 90 days (or at any time prior to 90 days), and the results of this test shall not exceed 750 coulombs. Specimens shall be moist cured for 56 days prior to the start of specimen preparation unless specimens are to be tested prior to 56 days, in which case the specimens shall be moist cured until the time of test. The 28-day compressive strength of the test mix that satisfies the 750 coulomb threshold shall be used as the basis for acceptance of Class H concrete per Section 601.4.5.~~ , surface resistivity test. For establishment of mixture proportions, surface resistivity tests shall be conducted on representative samples prepared and tested in accordance with AASHTO T 358. The specimens shall be moist cured then tested at an age of 28 days, and the result shall be equal to or greater than 30 kΩ-cm. The cost of all test mix requirements shall be considered incidental to the cost of Class H concrete.

~~For establishment of mixture proportions, as an alternative to the curing methods for rapid chloride permeability testing outlined in the previous paragraph, specimens may be moist cured for 7 days in accordance with ASTM C192, then cured for 21 days in lime-saturated water at 100.0 ± 3.5 °F, then tested at an age of 28 days. This method of curing shall be noted as the accelerated RCPT curing method.~~

The dosage rate in lbs./cy of fibers for any application shall be the manufacturer's recommendation to meet the requirements of 715.3. The dosage rate shall not be less than the submitted rate used for product approval which can be found in the approved products list. The

dosage rate shall not exceed 5.0 lbs./cy, unless the manufacturer can demonstrate, through a field demonstration, that the concrete mixture will be workable and fiber balling is not a problem.

601.4-TESTING:

601.4.1-Sampling and Testing Methods:

DELETE AND ADD THE FOLLOWING TO THE TABLE IN 601.4.1:

Sampling fresh concrete	AASHTO R 60
Sampling aggregate	MP 700.00.06
Sieve analysis of fine and coarse aggregates	AASHTO T 27 and AASHTO T 11
Slump of portland cement concrete	AASHTO T 119 Note 1
Air content of freshly mixed concrete	AASHTO T 152 AASHTO T 196
Unit weight/Yield of concrete	AASHTO T 121
Standard Practice for Making and Curing Concrete Test Specimens in the Field	AASHTO R 100 with MP 601.04.20
Compressive strength of cylindrical concrete specimens	AASHTO T 22
Total moisture content of aggregate by drying	AASHTO T 255
Predicting potential strength of portland cement concrete	MP 711.03.31
Determination of Ā of total solids in concrete	MP 601.03.51
Determination of free moisture in fine aggregate using 20 gram or 26 gram A “Speedy Moisture Tester”	MP 702.00.20
Surface Resistivity Test ~~Rapid Chloride Permeability Test~~	AASHTO T 358~~AASHTO T 277~~

Note 1 When testing concrete produced by volumetric batching and continuous mixing, the consistency testing shall be delayed for approximately three to five minutes after mixing.

601.4.2-Contractor's Quality Control:

ADD THE FOLLOWING SENTENCE TO THE END OF THE FOURTH PARAGRAPH IN SUBSECTION 601.4.2:

Any Agency or Laboratory which tests Contractor Quality Control concrete compressive strength specimens, that may be used for acceptance by the Division, shall be evaluated by the Cement and Concrete Reference Laboratory (CCRL) and certified by the Division as meeting all the requirements of ASTM C1077 pertaining to testing concrete cylinders, as outlined in Section 4.2 of MP 601.03.50. In addition any laboratory conducting concrete surface resistivity testing must be evaluated by CCRL for AASHTO T358.

REMOVE AND REPLACE THE TITLE AND ADD THE FOLLOWING IN

SUBSECTION 601.4.5:

601.4.5-Tests for ~~Permeability~~ Surface Resistivity Acceptance of Class H Concrete:

~~The Contractor shall be required to compare the compressive strength test results obtained in Section 601.4.4, for Class H concrete, to the compressive strength of the approved test mix per Section 601.3.~~

~~The Contractor shall also be required to fabricate six (6) rapid chloride permeability~~test ~~specimens in accordance with AASHTO T 277 every time that a set of compressive strength specimens for Class H concrete is fabricated. Chloride Permeability of the in-place concrete shall be considered acceptable if the 28-day compressive strengths obtained in Section 601.4.4 are greater than eighty percent (80%) of the 28-day compressive strength of the approved test mix. Concrete represented by compressive strengths below eighty percent (80%) of the 28-day compressive strength of the approved test mix may be removed and replaced by the Contractor. If the Contractor elects to leave the material in place, it will be evaluated as to adequacy for the use intended. All concrete evaluated as unsatisfactory for the use intended shall be removed and replaced or otherwise corrected by and at the expense of the Contractor as required in Section 105.3.~~

~~The Contractor shall also be required to fabricate six rapid chloride permeability test specimens in accordance with AASHTO T 277 every time that a set of compressive strength specimens is fabricated. These test specimens shall be moist cured until as close to the time of test as possible. If the 28-day compressive strength of the in-place concrete (obtained in Section 601.4.4) is less than or equal to eighty percent (80%) of the compressive strength of the approved test mix, these rapid chloride permeability test specimens shall be tested in accordance with AASHTO T 277, otherwise testing of these specimens is not required. When testing of these specimens is required, two test specimens shall be tested at each of the following ages: 35, 56, and 90 days.~~

~~These test results shall be used by the Engineer as the basis for evaluation as to the adequacy of the material for the use intended.~~

The Contractor shall also be required to fabricate three surface resistivity test specimens in accordance with AASHTO T 358 every time that a set of compressive strength specimens for Class H is fabricated. These test specimens shall be moist cured until as close to the time of test as possible, and they shall be tested at an age of 28-days. These test results shall be used by the Engineer as the basis for evaluation as to the adequacy of the material for the use intended. The minimum surface resistivity test result for full payment shall be 30 kΩ-cm. Table 601.4.05 specifies the penalty structure for payment of material that has a surface resistivity test result lower than 30 kΩ-cm.

Table 601.4.5

Resistivity Result (kΩ-cm)	Percent of Unit Bid Price Paid
>25-29	90%
>20-25	70%
>15-20	50%
≤15	Remove & Replace

DRAFT

July 29, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SUPPLEMENTAL SPECIFICATION

FOR

SECTION 604
PIPE CULVERTS

604.15-PAY ITEMS:

ADD THE FOLLOWING TO THE TABLE BELOW:

Y	Mil Thickness	
	Steel	Aluminum
A	64	60
B	79	75
C	109	105
D	138	135
E	168	164
F	188	---
G	218	---
H	249	---
J	4 Bolts/Ft 280	--
K	6 Bolts/Ft 280	100
L	8 Bolts/Ft 280	125
M	313	150
N	375	185
P	---	200
Q	---	225
R	---	250

Z	Metal Corrugations	Pipe Class
1	1½"x ¼"	---
2	2 ⅔" x ½"	---
3	3" x 1"	---
5	5" x 1"	---
6	6" x 2"	---
7	7½" x ¾" x ¾"	---
I or 1	---	I
II or 2	---	II
III or 3	---	III
IV or 4	---	IV
V or 5	---	V

X	Concrete Pipe
H	Horizontal Elliptical
V	Vertical Elliptical

DRAFT

July 18, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SUPPLEMENTAL SPECIFICATION

FOR

SECTION 685
BRIDGE CLEANING

685.1-DESCRIPTON:

685.1.3-Phase Three:

ADD THE FOLLOWING TO THE SUBSECTION:

This phase shall consist of washing with a mixture of low pressure water and a solution of a commercial brand soluble salt remover, any areas as noted in the plans. This washing shall be accomplished with a low pressure washer at a minimum pressure of 3000 PSI and a maximum pressure of 4500 PSI, at the nozzle end with the nozzle 4" to 8" from the surface. Remove all surface abnormalities such as rust scale, peeling paint, or blistered paint that would prevent the soluble salt remover from coming into contact with the salt contamination. Typically, low pressure water washing is not capable of removing intact coating material. The nozzle type shall be a rotary nozzle. The contractor shall follow the Manufacturer's recommendations or specifications for method and rate of application of the soluble salt remover. Water shall be from an approved source of drinking water, and the soluble salt remover shall be chosen from West Virginia Division of Highways Approved Source List.

The soluble salt remover shall be acidic, biodegradable, non-toxic, non-corrosive, and contain no VOCs. It shall have a pH value of 3.3 (± 0.2) and after application, it will not interfere with primer adhesion.

The contractor is to place special emphasis on the top surface of all flanges, connection plates, bearings, and excessively rusty or pitted areas. Any areas of the structure that exhibit mineral deposits of black iron oxide called "black rust" after any abrasive blasting shall be considered contaminated with chlorides and will need an additional washing with the soluble salt remover solution and another abrasive blasting.

DRAFT

July 18, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SUPPLEMENTAL SPECIFICATION

FOR

SECTION 687
SHOP PAINTING METAL STRUCTURES

687.3-PAINT APPLICATION REQUIREMENTS:

687.3.6-Handling Coated Steel:

REMOVE AND ADD THE FOLLOWING TO THE SUBSECTION:

Extreme care shall be exercised when handling the steel in the shop, during shipping, erection, and subsequent construction of the bridge. Painted steel shall not be moved or handled until sufficient cure time has elapsed to insure no damage is done to the fresh coating. The steel shall be insulated from the binding chains by softeners. Hooks and slings used to hoist steel shall be padded. To prevent damage to the coating, diaphragms and similar pieces shall be spaced in such a way that no rubbing will occur during shipment. Upon arrival at the project site, if weather conditions were such that deicing materials from the roadway were thrown onto the steel during shipment, the contractor shall be responsible for washing the entire surface of the steel with low-pressure water to remove chloride contamination. This also includes unpainted portions of weathering steel. Water shall be from an approved source of drinking water. The water is to be applied at minimum pressure of 3000 PSI to a maximum of 4500 PSI at the nozzle end, with the nozzle held at a distance of 4" to 8" from the surface. After the low-pressure wash, a minimum of one area on each piece is to be tested for chloride contamination. The testing shall be by the CHLOR*TEST (chloride test kit) method. The maximum chloride contamination shall be 5 micrograms/cm^2. If the degree of contamination is above the maximum level, the steel is to be re-washed, using a mixture of low-pressure water and a solution of a commercial brand of soluble salt remover, followed by additional testing for chloride contamination. The Soluble Salt Remover shall be ~~CHLOR*RID or equal~~ Approved Source List. The soluble salt remover shall meet the requirements in section 685.1.3. The steel to be washed shall not be erected until it has been washed, tested and accepted. The testing also includes unpainted portions of weathering steel.

DRAFT

September 18, 2024

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SUPPLEMENTAL SPECIFICATION

FOR

SECTION 688
FIELD PAINTING OF METAL STRUCTURES

688.5-FIELD PAINTING OF SHOP PRIME-COATED STEEL:

688.5.4-Surface Preparation:

ADD THE FOLLOWING TO THE SUBSECTION:

Prior to field coats, surface contamination such as rust, dirt, mud, oil, concrete, loose zinc, salts, or other foreign matter shall be removed. The shop primed structural steel shall be pressure washed, with a soluble salt remover from the division's approved product list, at 2000 – 3000 psi. The soluble salt remover shall meet the requirements in section 685.1.3. Touch up of the primer shall be in accordance with section 688.2.3.3.