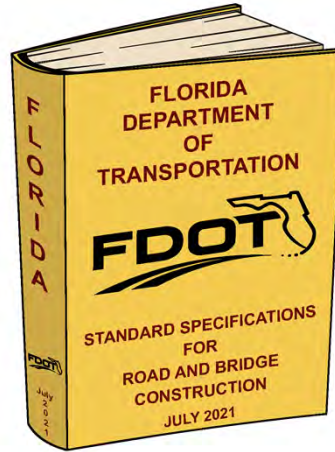


July 2021 Specification Revisions



Section 5

The changes are proposed by Scott Arnold from the Construction Office to clarify the shop drawing submittal and review requirements.

5-1.4 Shop Drawings:¶

→ → 5-1.4.1. Definitions: ~~In addition to the definitions below, also refer to Section 1, Definitions and Terms.~~¶

→ → → 1. Bracing: Temporary structural member(s) placed between beams, girders, piles, ~~precast~~ columns, etc. to provide stability during construction activities.¶

→ → → 2. Construction Affecting Public Safety: Construction that may jeopardize public safety such as structures ~~and construction operations~~ spanning ~~over or adjacent to~~ functioning vehicular roadways, ~~demolition of a continuous span structure while traffic is under any span,~~ pedestrian walkways, railroads, ~~navigation channels of navigable waterways and walls supporting fill sections or excavations~~ or other structure foundations located in ~~embankments~~; immediately adjacent to functioning roadways. ~~Construction Affecting Public Safety may also apply to the construction or demolition of a bridge with continuous beams or girders if traffic is being placed under one of the spans within the unit.~~ It does not apply to those areas of the site ~~under the Contractor's control and~~ outside the limits of normal public access. ~~Adjacent as used above applies to any project or property where normal construction operations could impact functioning vehicular roadways, pedestrian walkways, railroads, and navigable waterways.~~¶



SS0050104 CONTROL OF THE WORK

The proposed revisions will clarify shop drawing submittal and review requirements.

Extensive changes were made to Section 5-1 of the Standard Specifications, see accompanying Word documents. It was decided that we would not change terminology from "shop drawings" to "working drawings", proposed revisions now reflect this.

Section 5 Design Build

The changes are proposed by Scott Arnold from the Construction Office to clarify the shop drawing submittal and review requirements.

5-1.4 Shop Drawings:¶

→ → 5-1.4.1. Definitions: ~~In addition to the definitions below, also refer to Section 1, Definitions and Terms.~~¶

→ → → 1. Bracing: Temporary structural member(s) placed between beams, girders, piles, ~~precast~~ columns, etc. to provide stability during construction activities.¶

→ → → 2. Construction Affecting Public Safety: Construction that may jeopardize public safety such as structures ~~and construction operations~~ spanning ~~over or adjacent to~~ functioning vehicular roadways, ~~demolition of a continuous span structure while traffic is under any span,~~ pedestrian walkways, railroads, ~~navigation channels of navigable waterways and walls supporting fill sections or excavations~~ ~~or other structure foundations located in embankments~~; immediately adjacent to functioning roadways. ~~Construction Affecting Public Safety may also apply to the construction or demolition of a bridge with continuous beams or girders if traffic is being placed under one of the spans within the unit.~~ It does not apply to those areas of the site ~~under the Contractor's control and~~ outside the limits of normal public access. ~~Adjacent as used above applies to any project or property where normal construction operations could impact functioning vehicular roadways, pedestrian walkways, railroads, and navigable waterways.~~¶



SS0050104 CONTROL OF THE WORK DESIGN BUILD BOILER PLATE

The proposed revisions will clarify shop drawing submittal and review requirements. (See FHWA Memo for detailed changes)

Extensive changes to Section 5-1 of the Design-Build Specifications, see accompanying Word documents. It was decided that we would not change terminology from "shop drawings" to "working drawings", proposed revisions now reflect this.

Section 7

The changes are proposed by Derek Vollmer from the Traffic Engineering and Operation Office to include instructions for protecting all fiber optic cables.

LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC (REV 2-01-21)

SUBARTICLE 7-11.1 is deleted and the following substituted:

7-11.1 General: Preserve from damage all existing property within the project limits of or in any way affected by the Work, the removal or destruction of which is not specified in the Plans. This applies to, but is not limited to, public and private property, public and private utilities (except as modified by the provisions of 7-11.5), trees, shrubs, crops, sod, signs, monuments, fences, guardrail, pipe and underground structures, Intelligent Transportation Systems (ITS) facilities, traffic control signals and devices, highway lighting, and public highways (except natural wear and tear of highway resulting from legitimate use thereof by the Contractor).

Department owned underground facility locations shown in the Plans are approximate. Unless otherwise shown in the Plans, Department owned underground facilities will not be located by the Department nor through notification to "Sunshine 811". Locate all fiber optic cables. Provide a fiber optic cable locator in accordance with Section 633.



SS0071101 - LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC

Include instructions for protecting all fiber optic cables.

Section 7

The changes are proposed by Catherine Bradley from the Rail Office to remove Florida Gulf and Atlantic Railroad requirements.

LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC (REV 9-28-20)

SUBARTICLE 7-11.4.1.2 is deleted,

~~7-11.4.1.3 Florida Gulf and Atlantic Railroad (FGA): Contact FGA at 615-791-0630 in addition to the requirements in Section 7-11.4.1.~~

SUBARTICLE 7-11.4.2.4 is deleted and the following is substituted:

~~7-11.4.2.4 FGA: Complete the On-Track Contractor Roadway Worker Training Course for FGA Railroad. Contact FGA Railroad at 1-615-791-0630 for training information.~~

7-11.4.2.5 South Florida Rail Corridor (SFRC): Complete the On-Track Contractor Roadway Worker Training Course for South Florida Regional Transportation Authority (SFRTA) Railway. Contact SFRTA at 954-788-7920 for training information.



SP0071104 - LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC

These requirements are removed for Florida Gulf and Atlantic Railroad.

Section 8

The changes are proposed by Olivia Townsend from the Construction Office to update establish requirements for issuance of “Advisory Opinions” and for consistency with the Department's Three-Party Agreement.

8-3.7 Disputes Review Board: For this Contract, a Disputes Review Board (**Board**) will be established to assist in the resolution of disputes and claims arising out of the work on the Contract and will operate under the latest version of the Department's 'DRB Operation Procedures' posted online and be available for regular Board project meetings, virtual meetings and hearings.

8-3.7.1. Purpose: The Board will provide special expertise to assist in and facilitate the timely and equitable resolution of disputes and claims between the Department and the Contractor (**Parties**) in an effort to avoid construction delay and future claims.

It is not intended for the ~~Department or the Contractor~~ **Parties** to default on their normal responsibility to cooperatively and fairly settle their differences by indiscriminately assigning them to the Board. It is intended that the Board encourage the ~~Department and Contractor~~ **Parties** to resolve potential disputes or claims without resorting to this alternative resolution procedure.



SP0080307DRB PROSECUTION AND PROGRESS – PROSECUTION OF WORK – DISPUTE REVIEW BOARD.

Updated establish requirements for issuance of “Advisory Opinions” and for consistency with the Department's Three-Party Agreement.

Section 8

The changes are proposed by Olivia Townsend from the Construction Office to update the language to be consistent with the Department's Three-Party Agreement.

8-3.7 Regional Disputes Review Board: For this Contract, a Disputes Review Board (Board) will be available to assist in the resolution of disputes and claims arising out of the work on the Contract.

8-3.7.1 Purpose: The Board will provide special expertise to assist in and facilitate the timely and equitable resolution of disputes and claims between the Department and the Contractor (Parties) in an effort to avoid construction delay and future claims.

It is not intended that the Department or the Contractor Parties default on their normal responsibility to cooperatively and fairly settle their differences by indiscriminately assigning them to the Board. It is intended that the Board encourage the Department and Contractor Parties to resolve potential disputes or claims without resorting to this alternative resolution procedure.

8-3.7.2 Disputes Resolution: The Board will be used when normal dispute or claim resolution is not succeeding. It is a condition of this Contract that the Parties shall use the Board. Either Party may refer a dispute or claim to the Board for a disputes review hearing. Disputes and claims will be considered as quickly as possible, taking into consideration the particular circumstances and the time required to prepare detailed documentation. Steps may be omitted as agreed by the Parties and the time periods stated below may be shortened in order to hasten resolution.

If the Contractor objects to any decision, action or order of the Engineer, the Contractor may file a written protest with the Engineer, stating clearly and in detail the basis for the objection, within 15 calendar days after the event. The Engineer will consider the written protest and make his decision on the basis of the pertinent contract provisions, together with the facts and circumstances involved in the dispute or claim. The Engineer's decision will be furnished in writing to the Contractor within 15 calendar days after receipt of the Contractor's written protest. This decision will be final and conclusive on the subject, unless a written appeal to the Engineer is filed by the Contractor within 15 calendar days of receiving the decision.



SP0080307RDRB Prosecution and Progress - Prosecution of Work – Regional Dispute Review Board.

To update the language to be consistent with the Department's Three-Party Agreement.

Section 8

The changes are proposed by Latashi Kitchen from the State Construction Office to include existing language from the Department's Weather Letter.

The Department will grant time extensions, on a day for day basis, for delays caused by the effects of rains or other inclement weather conditions, related adverse soil conditions or suspension of operations as defined in 8-6.4 that prevent the Contractor from productively performing controlling items of work resulting in:

1. The Contractor being unable to work at least 50% of the normal work day on pre-determined controlling work items; or
2. The Contractor must make major repairs to work damaged by weather, provided that the damage is not attributable to the Contractor's failure to perform or neglect; and provided that the Contractor was unable to work at least 50% of the normal workday on pre-determined controlling work items.

When the Department grants a time extension due to rains or other inclement weather, the Contractor shall submit any objection to the additional time in writing within ten calendar days from receipt of written notice from the Engineer. Failure to submit a written appeal within ten calendar days from receipt of the written notice shall constitute a waiver of any and all rights to appeal the Department's decision at a later time.

No additional compensation will be made for delays caused by the effects of inclement weather.



SS0080703-PROSECUTION AND PROGRESS

Include existing language from the Department's Weather Letter.

Section 8

The changes are proposed by Ashley Anderson from the State Construction Office to update the Liquidate Damages rate per the Florida Statutes and include language to adjust the rate when all contract work is complete.

8-10.2 Amount of Liquidated Damages: Applicable liquidated damages are the sum of the daily rate of \$ [redacted] per Calendar Day assessed as projected lost toll revenues for failure to complete the Work within the Contract Time plus the amounts established in the following schedule:

Original Contract Amount	Daily Charge Per Calendar Day
\$50,000 and under.....	\$868,1015
Over \$50,000 but less than \$250,000.....	\$8824,045
\$250,000 but less than \$500,000.....	\$1,19770
\$500,000 but less than \$2,500,000.....	\$1,6940
\$2,500,000 but less than \$5,000,000.....	\$2,5792
\$5,000,000 but less than \$10,000,000.....	\$3,7856
\$10,000,000 but less than \$15,000,000.....	\$4,769344
\$15,000,000 but less than \$20,000,000.....	\$5,85574
\$20,000,000 and over.....	\$9,21410,207 plus 0.00005 of any amount over \$20 million (Round to nearest whole dollar)

The Engineer may approve adjustments to the liquidated damages amounts in accordance with the Construction Project Administration Manual (CPAM) provided all contract work is complete.



SP0081000 PROSECUTION AND PROGRESS – LIQUIDATED DAMAGED FOR FAILURE TO COMPLETE THE WORK

To update the Liquidate Damages rate per the Florida Statues and include language to adjust the rate when all contract work is complete.

Section 8

The changes are proposed by Ashley Anderson from the State Construction Office to update the Liquidate Damages rate per the Florida Statues and include language to adjust the rate when all contract work is complete.

8-10.2 Amount of Liquidated Damages: Applicable liquidated damages are the amounts established in the following schedule:

Original Contract Amount	Daily Charge Per Calendar Day
\$50,000 and under.....	\$868,015
Over \$50,000 but less than \$250,000.....	\$882,045
\$250,000 but less than \$500,000.....	\$1,197,70
\$500,000 but less than \$2,500,000.....	\$1,694,0
\$2,500,000 but less than \$5,000,000.....	\$2,579,2
\$5,000,000 but less than \$10,000,000.....	\$3,785,6
\$10,000,000 but less than \$15,000,000.....	\$4,769,44
\$15,000,000 but less than \$20,000,000.....	\$5,855,74
\$20,000,000 and over.....	\$9,214,10,203 plus 0.00005 of any amount over \$20 million (Round to nearest whole dollar)

The Engineer may approve adjustments to the liquidated damages amounts in accordance with the Construction Project Administration Manual (CPAM) provided all contract work is complete.



SS0081002 PROSECUTION AND PROGRESS

To update the Liquidate Damages rate per the Florida Statues and include language to adjust the rate when all contract work is complete.

Section 102

The changes are proposed by Melissa Hollis from the States Estimate Office to separate RPMs from 710-90 Final Surface Markings.

102-2 Materials.

Meet the following requirements:

Bituminous Adhesive	Section 970
Temporary Raised Pavement Markers	Section 990 970
Paint	Section 971
Removable Tape	Section 990
Glass Spl ^{Section 710}	Section 971
Temporary Traffic Control Device Materials	Section 990
Retroreflective and Nonreflective Sheeting for Temporary Traffic Control Devices	Section 994

SUBARTICLE 102-10.4 is ~~deleted~~ and the following substituted:

102-10.4 Temporary Raised Pavement Markers (RPMs): ~~Use Class B RPMs except for work that consists of ground-in-rumble-strips at centerline locations. For ground-in rumble strips at centerline locations, use temporary RPMs in accordance with Section 710. Provide only temporary RPMs listed on the API. Install all markers in accordance with the manufacturer's recommendations, the Standard Plans, and Section 706. After initial installation, replace broken or missing temporary RPMs in locations where more than three consecutive temporary RPMs are broken or missing at no expense to the Department.~~



SS1020200 Maintenance of Traffic.

Updated to separate RPMs from 710-90 Final Surface Markings. With improved CADD models, the quantity of RPMs can be separately quantified. Plan quantity measurement will minimize field adjustments to the quantity.

Section 102

The changes are proposed by Olivia Townsend from the Construction Office to support the changes made to the 102 series of the Standard Plans for FY21-22 and FDM. The updates also include current practice requirements for AFADs.

102-3.3.1 Traffic Pacing: In addition to dates and locations, include a pacing plan outlining the expected equipment and number of traffic control officers required, the proposed traffic pacing lengths and durations, the available existing egresses in the event of an emergency, and a contingency plan in the event of an equipment failure.

102-3.4 Pedestrian and Bicycle Accommodations: When an existing pedestrian or bicycle way is located within a traffic control work zone, accommodation must be maintained and provision for the disabled must be provided. Pedestrians are to be accommodated with a safe, accessible travel path around work sites separated from mainline traffic in compliance with the Americans with Disabilities Act (ADA) Standards for Transportation Facilities. Maintain existing or detour bicycle facilities satisfactorily throughout the project limits. Advanced notification of sidewalk closures and marked detours shall be provided by appropriate signs. Only approved pedestrian longitudinal channelizing devices may be used to delineate temporary traffic control zone pedestrian walkway. Existing businesses in work areas are to be provided with adequate entrances for vehicular and pedestrian traffic during business hours.



SS1020300 Maintenance of Traffic.

Updated to support the changes made to the 102 series of the Standard Plans for FY21-22 and FDM. The updates also include current practice requirements for AFADs.

Section 103

This change was proposed by Scott Arnold from the Construction Office to include floating platforms and to remove the use of barges and other items since they are excluded in the Specification.

TEMPORARY WORK STRUCTURES (REV 11-12-20)

SUBARTICLE 103-1.1 is deleted and the following substituted:

103-1.1 Scope of Work: Construct temporary work structures used solely to support construction equipment. Temporary structures include but are not limited to work bridges, elevated platforms, floating platforms, and rail systems. Items such as ~~barges, mats, or ties~~ such as falsework or scaffolding are not included in this Section. If a temporary structure type other than the structure type shown in the plans is chosen, assume responsibility for obtaining all necessary permit revisions and the Engineer's approval. Conform to any limitations contained in the plans and permits. Do not place embankment outside the limits shown in the plans. The cost of the embankment, placing, compaction, and removal will be included in the lump sum price for Temporary Work Structure.



SS1030101 TEMPORARY WORK STRUCTURES

Updated to include floating platforms and to remove the use of barges and other items since they are excluded in the Specification.

Section 105

- 1050404MM6.3 Volume 2 – Precast Concrete Drainage Structures
- 1050404MM8.1 Volume 2 – Precast Prestressed Concrete Products
- 1050404MM8.2 Volume 2 – Incidental Precast Concrete Products
- 1050404MM8.4 Volume 2 – Precast Prestressed Concrete Products using Self Consolidating Concrete
- 1050404MM8.6 Volume 2 – Flowing Concrete for Precast/Prestressed Concrete Products
- 1050404MM9.2 Volume 2 – Producers of Precast/Prestressed Concrete



1050404MM6.3V2 Contractor Quality Control General Requirements
Frank Thomas updated to include laboratory trial and production testing for ASTM concrete mix designs and requirements for QC staff to obtain the FRP Reinforcement Producer's notarized Material Certification in addition to the Certificate of Analysis.

1050404MM8.1V2 CONTRACTOR QUALITY CONTROL GENERAL REQUIREMENTS
Frank Thomas of SMO updated to include requirement for QC staff to obtain the FRP Reinforcement Producer's notarized Material Certification in addition to the Certificate of Analysis.

1050404MM8.2V2 CONTRACTOR QUALITY CONTROL GENERAL REQUIREMENTS
Frank Thomas of SMO updated to include requirement for QC staff to obtain the FRP Reinforcement Producer's notarized Material Certification in addition to the Certificate of Analysis.

1050404MM8.4V2 CONTRACTOR QUALITY CONTROL GENERAL REQUIREMENTS
Frank Thomas of SMO updated to adjust the ASTM C478 production testing requirements, since they are being clarified in MM 6.3.

1050404MM8.6V2 CONTRACTOR QUALITY CONTROL GENERAL REQUIREMENTS

Frank Thomas of SMO updated to adjust the ASTM C478 production testing requirements, since they are being clarified in MM 6.3.

1050404MM9.2V2 CONTRACTOR QUALITY CONTROL GENERAL REQUIREMENTS

Jose Armenteros updated to simplify the language related to sampling and testing process of concrete chlorides. Changes also include updating Appendix "A" to remove references to concrete total revolutions in concrete delivery ticket

Section 105

This change was proposed by Dino Jameson from the State Materials Office to include references to the density log book being updated in the Department's database.

105-8.2 Quality Control (QC) Manager: Designate a QC Manager who has full authority to act as the Contractor's agent to institute any and all actions necessary to administer, implement, monitor, and as necessary, adjust quality control processes to ensure compliance with the Contract Documents. The QC Manager must speak and understand English. The QC Manager must be on-site at the project on a daily basis or always available upon four hours' notice. Ensure that the QC Manager is qualified as such through the Construction Training and Qualification Program. The QC Manager and the Superintendent must not be the same individual.

Under the direction of the QC Manager, ~~and using Department's standard forms provided by the Engineer, summarize the daily QC activities including testing and material sampling. Since erasures are strictly prohibited on all reports and forms, use blue or colored ink. Do not use black ink. If manual corrections to original data are necessary, strike through, correct, and date the entry, including the initials of the person making the correction. Make copies of the completed forms available for the Department to review daily unless otherwise required in the Specifications. Ensure~~ ensure that the QC test data is entered into the Department's database on a daily basis. Use Department approved programs to generate the plots for the Earthwork Records System (ERS). Maintain all QC related reports and documentation for a period of three years



SS1050101 CONTRACTOR QUALITY CONTROL GENERAL REQUIREMENTS

To include references to the density log book being updated in the Department's database.

Section 105

This change was proposed by John Westphal from the Construction Office to include floating platforms and to remove the use of barges and other items since they are excluded in the Specification.

105-8.6.2 Concrete Field Inspector - Level 2: Ensure field inspectors responsible for the quality of concrete being placed on the following structure types are qualified CTQP Concrete Field Inspectors Level 2:

1. Moveable bridges
2. Bridges over a water opening of 1,000 feet or more
3. Bridges with a span of 190 feet or more
4. Cable supported or cable stayed bridges
5. Post-tensioned bridges
6. Steel girder or steel truss bridges
7. Multi-level roadways

With the exception of concrete traffic railing and bridge approach slab placements, a Level 2 Inspector must be present on the jobsite during all concrete placements. Prior to the placement of concrete, the inspector will inspect the element to be cast to ensure compliance with Contract Documents. A Level 2 Inspector's duties may include ensuring that concrete testing, inspection, and curing in the field are performed in accordance with the Contract Documents. The QC Inspector will inform the Verification Inspector of anticipated concrete placements and LOT sizes.



SS1050806 CONTRACTOR QUALITY CONTROL GENERAL REQUIREMENTS.

To remove the requirement for CTQP Concrete Field Inspector Level 2 on bridge approach slab concrete placements.

Section 107

This change was proposed by Melissa Hollis from the State Estimates Office to simplify the documentation and measurement of small mowing areas.

107-3 Method of Measurement.

~~For each litter removal cycle, the quantity to be paid will be the area, in acres, from which litter has been picked up, removed, and disposed, completed and accepted. The quantity will be determined by calculation using the lengths and widths based on the station to station dimensions shown in the plans.~~

~~For each mowing cycle, the quantity to be paid will be the area, in acres, of mowing, completed and accepted. The quantity will be determined by calculation using the lengths and widths based on the station to station dimensions shown in the plans.~~

The quantity to be paid will be the project area shown in the Contract Documents, in acres, for each litter removal or mowing cycle completed and accepted. No adjustments will be made to the project area quantity.

107-4 Basis of Payment.

~~For litter removal, price~~ Price and payment will be full compensation for all work specified in this section.

~~For mowing, price and payment will be full compensation for all work specified in this section.~~

No separate payment will be made for litter removal and mowing after final acceptance.

Payment will be made under:

- Item No. 107 - 1- Litter Removal - per acre.
- Item No. 107 - 2- Mowing - per acre



SS1070100 LITTER REMOVAL AND MOWING.

Updated to simplify the documentation and measurement of small mowing areas.

Section 110

This change was proposed by Jason Russell from the Construction Office to prevent conflict with 110 and 120-4.21 Standard clearing and grubbing includes the removal of asphalt and base, but in 120-4.2 the removal of base is not always necessary.

CLEARING AND GRUBBING (REV 12-08-20)

SUBARTICLE 110-2.1 is ~~deleted~~ and the following substituted:

110-2.1 Work Included: Completely remove and dispose of all buildings, timber, brush, trees, stumps, roots, rubbish, debris, existing flexible pavement and base, drainage structures, culverts, and pipes. Remove all other obstructions resting on or protruding through the surface of the existing ground and the surface of excavated areas.

Perform standard clearing and grubbing within the following areas:

1. All areas where excavation is to be done, including borrow pits, lateral ditches, right-of-way ditches, etc.
2. All areas where roadway embankments will be constructed, unless constructing over an existing road. If constructing over an existing road, remove asphalt and base in accordance with 120-4.2 and the Plans.
3. All areas where structures will be constructed, including pipe culverts and other pipe lines.



SS1100201 CLEARING AND GRUBBING.

To prevent conflict with 110 and 120-4.21 Standard clearing and grubbing includes the removal of asphalt and base, but in 120-4.2 the removal of base is not always necessary.

Section 120

This change was proposed by Jason Russell from the Construction Office to clearly define existing ground line and to clarify how the volume of excavation and embankment is calculated.

120-1.1 General: Excavate and construct embankments as required for the roadway, ditches, channel changes and borrow material. Use suitable excavated material or authorized borrow to prepare subgrades and foundations. Construct embankments in accordance with Standard Plans, Index 120-001. Compact and dress excavated areas and embankments.

Meet the requirements of Section 110 for excavation of material for clearing and grubbing and Section 125 for excavation and backfilling of structures and pipe. Material displaced by the storm sewer or drainage structure system is not included in the earthwork quantities shown in the Plans. The original ground line is defined as the contour of existing natural topography. The finished grading template is defined as the contour of the finished side slopes, unpaved shoulders, and the bottom of the roadway base or subbase, as applicable and shoulder base for flexible or rigid pavement.

SUBARTICLE 120-2.2.1 is deleted and the following substituted:

120-2.2.1 Roadway Excavation: Roadway excavation consists of the excavation and the utilization or disposal of all materials necessary for the construction of the roadway, ditches, channel changes, etc., except for removal of existing pavement as defined in Section 110, as may be specifically shown to be paid for separately and that portion of the lateral ditches within the limits of the roadway right-of-way as shown in the Plans.



SS1200101 CLEARING AND GRUBBING.

Updated to clearly define existing ground line and to clarify how the volume of excavation and embankment is calculated.

Section 125

This change was proposed by Jason Russell from the Construction Office to update references to the original ground surface to match the definition of the original ground line in Section 120. The updates also include clarifying the method of measurement.

125-5.1 General: Unless shown in the Plans, do not excavate outside of caissons, cribs, cofferdams, or sheet piling, and do not disturb the natural stream bed adjacent to the structure. If excavating or dredging at the site of the structure before sinking caissons, cribs, or cofferdams, complete the foundation and backfill all such excavations to the original ground surface line or other required elevation, with material satisfactory to the Engineer.

125-13 Method of Measurement.

When direct payment for excavation for structures is provided in the proposal, and such payment is on a unit basis, ~~such excavation will be measured in its original position by the cross-section calculation method or surface to surface calculation method to determine the amount of material. The cubic yard volume of excavation used as a~~ the basis of payment is the cubic yard volume of will then be that the material actually removed excavated below the original ground line or stream bed, but not including that shown in the Plans to be paid for either as regular excavation, subsoil excavation, lateral ditch excavation or channel excavation, or which is included in the item for grading, and except that no payment will be made for material removed in excavating for footings or foundations outside of an area which is bounded by vertical planes 12 inches outside of the limits of the footing and parallel thereto. For pipe trenches the width used to be in the calculation shall be the diameter of the pipe, plus 24 inches.



SS1250501 EXCAVATION FOR STRUCTURES AND PIPE.

To update references to the original ground surface to match the definition of the original ground line in Section 120. The updates also include clarifying the method of measurement.

Section 125

This change was proposed by Dino Jameson from the State Materials Office to include updating the density log book on the Department's database

EXCAVATION FOR STRUCTURES AND PIPE (REV 11-06-20)

SUBARTICLE 125-8.1.6.1 is deleted and the following substituted:

125-8.1.6.1 Thick Lift Requirements: The Contractor may elect to place material in thicker lifts of no more than 12 inches compacted thickness above the Soil Envelope if the embankment material is classified as Group 1 in the table below. If the embankment material is classified as Group 2 in the table below and the Contractor chooses to place material in thicker lifts of no more than 12 inches compacted thickness above the soil envelope then the Contractor must demonstrate with a successful test section that density can be achieved. Thick lift around structures is only allowed above the soil envelope of the connecting pipe. Notify the Engineer in writing prior to beginning construction of a test section. Construct a test section of the length of one LOT. Perform five quality control (QC) tests at random locations within the test section. All five tests must meet the density required by 125-9.2 and be verified by the Department. Identify the test section with the compaction effort and soil classification in the [Log Book Earthwork Records System \(ERS\) section of the Department's database](#). In case of a change in compaction effort or soil classification, construct a new test section. When a QC test fails the requirements of 125-9.2 or when the QC tests cannot be verified, construct a new test section. The Contractor may elect to place material in 6 inches compacted thickness at any time.



SS1250801 EXCAVATION FOR STRUCTURES AND PIPE.

Updated to include updating the density log book on the Department's database

Section 145

This change was proposed by Dino Jameson from the State Materials Office to include updating the density log book on the Department's database

145-6 Acceptance Program.

145-6.1 General Requirements: Meet the requirements of 120-10 except delete the requirements of 120-10.1.4.1, 120-10.1.6, and 120-10.2 and 120-10.3.

145-6.2 Maximum Density Determination: Determine the maximum QC density in accordance with FM 1-T180, ~~Method-D~~. When compacting A-3 or A-2-4 materials to meet the alternate acceptance criteria in 145-6.3.1.1, Ddetermine the maximum density in accordance with AASHTO FM 1-T099-Method-C. Perform gradation tests on the sample collected in accordance with AASHTO T27 and FM 1-T011.

145-6.3 Density Testing Requirements: Ensure compliance with the requirements of nuclear density testing in accordance with FM 1-T238. Determine the in-place moisture content for each density test. Use FM 5-507 (Determination of Moisture Content by Means of a Calcium Carbide Gas Pressure Moisture Tester), or FM 5-535 (Laboratory Determination of Moisture Content by Granular Soils by Use of a Microwave Oven) for moisture determination.

145-6.3.1 Acceptance Criteria: For select backfill, obtain a density in each LOT of at least 95% of the maximum density as determined by AASHTO FM 1-T180.

145-6.3.1.1 Optional Acceptance Criteria for A-3 and A-2-4 Materials: Obtain a minimum density of 100% of the maximum dry density as determined by AASHTO FM 1-T099. The combined width from both reinforced fill volume and retained fill material may be considered the same LOT if both volumes comprise the same material and both are compacted with the same procedure, lift thickness, equipment and compacting effort.



SS1450600 GEOSYNTHETIC REINFORCEMENT

Updated to include updating the density log book on the Department's database

Section 160

This change was proposed by Dino Jameson from the State Materials Office to include updating the density log book on the Department's database.

STABILIZING (REV 11-06-20)

SUBARTICLE 160-4.2 is ~~deleted~~ and the following substituted:

160-4.2 Mixing Depth Requirements: Report depth requirements in the Earthwork Records System (ERS) ~~section of the Department's database~~ measured to the nearest 0.25 inch. The difference between the individual measured depth thickness on the roadway and the plan target thickness must not exceed 2 inches. The difference between the LOT average (average of the three individual measured depth thickness) and the plan target thickness must not exceed 1 inch. No ~~undertolerance~~ of mixing depth is allowed.

As an exception to the above mixing requirements, where the subgrade is of rock, the Engineer may waive the mixing operations (and the work of stabilizing), and the Department will not pay for stabilization for such sections of the roadway.

Meet the required Plan mixing-depths by measuring from the proposed final grade line. Determine test locations, including stations and offsets, using the Random Number generator approved by the Department. Notify the Engineer a minimum of 24 hours before checking mixing depths. Record results on Department approved forms.



SS1600402 STABILIZING.

Updated to include updating the density log book on the Department's database.

Section 200

The changes are proposed by Dino Jameson from the State Materials Office to modify the density logbook to the Departments database.

The Engineer will base approval on results of a test section constructed using the Contractor's specified compaction effort. Notify the Engineer prior to beginning construction of a test section. Construct a test section of the length of one LOT. Perform five QC density tests at random locations within the test section. At each test site, test the bottom 6 inches in addition to the entire course thickness. All QC tests and a Department Verification test must meet the density required by 200-7.2.1. Identify the test section with the compaction effort and thickness in the Logbook Earthwork Records System (ERS) portion of the Department's database. Remove the materials above the bottom 6 inches, at no expense to the Department. The minimum density required on the thicker lift will be the average of the five results obtained on the thick lift in the passing test section. Maintain the exposed surface as close to "undisturbed" as possible; no further compaction will be permitted during the test preparation. If unable to achieve the required density, remove and replace or repair the test section to comply with the specifications at no additional expense to the Department. The Contractor may elect to place material in 6 inches compacted thickness at any time.



SS2000502 – ROCK BASE

References to the density logbook need to be updated to Department's database.

Section 234

The changes are proposed by Wayne Rilko from the State Materials Office to modify subarticle 234-7.1.3 as it conflicted with 234-8.1.1.

• **234-7-Construction Requirements.**¶

→ **234-7.1-General:** Meet the general construction requirements of Section 330, with the following modifications:¶

→ → **234-7.1.1-Temperature Limitations:** Spread the mixture only when the air temperature is at least 40°F. Do not place the material on frozen subgrade.¶

→ → **234-7.1.2-Tack Coat:** Unless otherwise authorized by the Engineer, apply a tack coat between successive layers of base material.¶

→ → **234-7.1.3-Thickness of Layers:** Construct each course in layers, ~~not to exceed 3 inches compacted thickness~~ such that the compacted thickness is in compliance with the layer thicknesses in 234-8.1.1 and spread rate tolerance in 234-8.2.¶



SS2340701 – SUPERPAVE ASPHALT BASE

-7.1.3 conflicts with -8.1.1.

-7.1.3 Thickness of Layers: Construct each course in layers such that the compacted thickness does not exceed the maximum layer thickness in 234-8.1.1.

Section 327

The changes are proposed by Rich Hewitt from the State Construction Office to allow milled surfaces to be open to traffic for up to three days provided the Contractor meets milled surface requirements in the Standard Specification.

327.3.1.1 Extended Time for Milled Surface Traffic: Upon approval of the Engineer, the time period for maintaining traffic on a milled surface may be extended up to 3 calendar days before paving is required, provided the Contractor can demonstrate the ability to produce a milled surface texture with continuous, longitudinal milling striations with no gaps in the longitudinal striations, and drop off conditions are not exceeded. Gaps in the milling striations and cases where gaps create a diagonal pattern or chevron appearance are to be milled

again such that continuous, longitudinal striations are achieved prior to allowing traffic on the milled surface. Photos of acceptable and unacceptable surface texture are located at:

<https://www.flot.gov/programmanagement/implemented/urinspecs/milling-patterns>

Maintain adequate drainage on the milled surface and at transitions between milled and non-milled surfaces on the same day as milling. At no cost to the Department, re-mill or pave any area the Engineer determines to have an unacceptable ride, does not provide adequate pavement structure, or does not provide adequate drainage.

If the Engineer determines the Contractor is unable to provide a milled surface meeting the Specification requirements above, at no cost to the Department, the Contractor will be required to pave all milled surfaces no later than the day after the surface was milled.



SS3270301 MILLING OF EXISTING ASPHALT PAVEMENT

Extended time for milled surfaces to be open to traffic if Contractor meets required conditions.

Section 330

The changes are proposed by Rich Hewitt from the State Construction Office to add speed tables and raised crosswalks to the straightedge testing exception areas in the Standard Specification.

HOT MIX ASPHALT - GENERAL CONSTRUCTION REQUIREMENTS (REV 10-5-20)

SUBARTICLE 330-9.4.5.2 is deleted and the following substituted:

330-9.4.5.2 Straightedge Exceptions: Straightedge testing will not be required in the following areas: shoulders, intersections, tapers, crossovers, sidewalks, shared use paths, parking lots, raised crosswalks, speed tables, and similar areas, or in the following areas when they are less than 250 feet in length: turn lanes, acceleration/deceleration lanes and side streets. The limits of the intersection will be from stop bar to stop bar for both the mainline and side streets.

As an exception, in the event the Engineer identifies an objectionable surface irregularity in the above areas, straightedge and address all deficiencies in



SS3300904 HOT MIX ASPHALT - GENERAL CONSTRUCTION REQUIREMENTS

Change made to add speed tables and raised crosswalks to the straightedge testing exception areas due to the large degree of handwork, as well as variable thickness paving. If Engineer finds an area to be objectionable, can still be tested where 3/8" is a deficiency.

Section 334

The changes are proposed by Wayne Rilko from the State Materials Office to update language, raise upper density limits in Tables 334-8 and 334-9, and delete sample sizes n-5 and n-6 in Table 334-10, in the Standard Specification.

SUPERPAVE ASPHALT CONCRETE (REV 10-28-20)

SUBARTICLE 334-5.1.2 is deleted and the following substituted:

334-5.1.2 Acceptance Testing Exceptions: When the total combined quantity of hot mix asphalt for the project, as indicated in the Plans for Type B-12.5, Type SP and Type FC mixtures only, is less than 2000 tons, the Engineer will accept the mix on the basis of visual inspection. The Engineer may require the Contractor to run process control tests for informational purposes, as defined in 334-4, or may run independent verification tests to determine the acceptability of the material.

Density testing for acceptance will not be performed on widening strips or shoulders with a width of 5 feet or less, open-graded friction courses, variable thickness overbuild courses, leveling courses, any SP-9.5 or SP-12.5 asphalt layer placed on subgrade with a layer thickness less than or equal to 3 inches, miscellaneous asphalt pavement, shared use paths, crossovers, gore areas, raised crosswalks, speed tables, or any course with a specified thickness less than 1 inch or a specified spread rate that converts to less than 1 inch as described in 334-1.4. Density testing for acceptance will not be performed on asphalt courses placed on bridge decks or approach slabs; compact these courses in static mode only per the requirements of 330-7.7. In addition, density testing for acceptance will not be performed on the following areas when they are less than 500 feet (continuous) in length: turning lanes, acceleration lanes, deceleration lanes, shoulders, parallel parking lanes, or ramps, or unsignalized side streets with less than four travel lanes and speed limits less than 25 mph. Do not perform density testing for acceptance in situations where the areas requiring density testing is less than 50 feet within a



SS3340501 SUPERPAVE ASPHALT CONCRETE

-5.1.2, added speed tables, raised cross walks and side streets. Table 334-8, raise the upper density limits. Table 334-9, raise the upper density limits. Table 334-10, delete sample size n=5 and n=6.

Section 337

The changes are proposed by Wayne Rilko from the State Materials Office to update language to increase hydrated lime and add liquid anti-strip to FC-5 in the Standard Specification.

ASPHALT CONCRETE FRICTION COURSES (REV 10-28-20)

SUBARTICLE 337-3.2.1.3 is deleted and the following substituted:

337-3.2.1.3 Hydrated Lime: Add the lime at a dosage rate of 1.0% by weight of the total dry aggregate to mixes containing granite or granitic gneiss from Georgia or Alabama. Add the lime at a dosage of 1.5% by weight of the total dry aggregate to mixes containing any amount of granite from Nova Scotia.

SUBARTICLE 337-3.2.1.4 is deleted and the following substituted:

337-3.2.1.4 Liquid Anti-Strip Additive: Use a liquid anti-strip additive at the approved dosage rate as indicated on the APL for all mixtures containing limestone aggregate.



SS3370302 ASPHALT CONCRETE FRICTION COURSES

Recently completed research indicates increased life spans for FC-5 granite aggregate mixtures when using hydrated lime and liquid anti-strip.

Added an additional 0.5% lime to FC-5 mixtures with Nova Scotia granite. Add liquid anti-strip to all FC-5 mixtures.

Section 346

The changes are proposed by Jose Armenteros from the State Materials Office to clarify language in Table 346-4, add colored concrete, modify maximum allowable transit time, and simplify language in the Standard Specification.

STRUCTURAL PORTLAND CEMENT CONCRETE (REV 46-3613-2-303.8.21)

SUBARTICLE 346-3.4.1 is deleted and the following substituted:

346-3.4 Durability for Concrete Construction:

346-3.4.1 Minimum Cementitious Materials Content: Ensure that the produced concrete meets the minimum amount of cementitious materials content in Table 346-4.

Concrete Application Class	Environmental Classification		
	Extremely Aggressive	Moderately Aggressive	Slightly Aggressive
I (Pavement), II and III (Seals)		470	
II (Bridge Deck), III, IV, IV (Drilled Shaft), V, VI (Special), VI and VII (Reinforced Concrete) ^{1,2}	600	550	510
Non-reinforced concrete		420	



SS3460304 STRUCTURAL PORTLAND CEMENT CONCRETE

Per Industry request, Table 346-4 language was clarified. Per DMRO request (1) colored concrete was added, (2) exceptions to the Maximum Allowable Transit Time were added (3) adding water to the concrete at the jobsite was clarified to avoid current misinterpretations.

Section 350

This change was proposed by Melissa Hollis from the State Estimates Office to address payment for curb joints in the Standard Specification.

CEMENT CONCRETE PAVEMENT
(REV 11-3-20)

- SUBARTICLE 350-20.2 is deleted and the following substituted:
 - **350-20.2 Joints and Cracks:** For cleaning and sealing joints in new or existing concrete pavement, the quantity to be paid will be the length in feet, as determined by field measurement along the joints. Payment for the joints between concrete pavement and curb will be made under Section 520.
 - For cleaning and sealing random cracks in existing concrete pavement, the quantity to be paid will be the length in feet, as determined by field measurement along the cracks.



SS3502002 CEMENT CONCRETE PAVEMENT

Change is to clarify no separate payment for curb joints.

Note: No separate payment is made for joint (shown on Standard Plans 520-001), either under Section 350 or 520.

Added text: No separate payment will be made for curb joints.

Section 425

The changes are proposed by Tim Holley from the Roadway Design Office to add concrete requirements for concrete aprons.

▪ **425-2-Composition and Proportioning.**¶

→ **425-2.1-Concrete:** For inlets, manholes, and junction boxes, use Class II or IV concrete, as designated in the Plans and Standard Plans and as specified in Section 346. For **concrete aprons and yard drains**, use concrete as specified in Section 347.¶

→ **425-3.2-Gratings, Covers, and Frames:** Use gratings and frames fabricated from structural steel or cast iron as designated in the appropriate Standard Plans Index. When “Alt. G” grates are specified in the Plans, provide structural steel grates that are galvanized in accordance with the requirements of ASTM A123 **and hardware galvanized in accordance with the requirements of ASTM A153.**¶

→ → Use rigid frames and covers either 24 inches or 36 inches or optional three-piece adjustable frames and covers as indicated in Standard Plans, Index 425-001.¶

→ → For three-piece adjustable frames, the inner frame may include replaceable resilient seats to support the cover. In addition, the inner frame shall indicate it is adjustable, by clearly having the word “adjustable” imprinted into the exposed portion of the inner frame so “adjustable” is visible from the roadway after installation.¶



SS4250201 INLETS, MANHOLES, AND JUNCTION BOXES.

Requirements that were in the Standard Plans are being moved into the proper document with the update of the 425 Series Indexes.

Added concrete requirements for concrete aprons. Clarified that hardware is required to be galvanized along with grates when Alt. G is specified. Added payment information for Performance Turf. Added concrete apron to list of items paid for with the structure.

Section 450

The changes are proposed by Thomas Frank from the State Materials Office to adjust allowable stress in CFRP strands and additional editorial changes.

Decrease the force at the rate of 1% for each 10°F that the ambient temperature at time of stressing is above the expected concrete temperature at the time of placing. Do not allow the stress in the steel prestressing strand to exceed 80% of the specified tensile strength of the strand, after seating. Do not allow the stress in the CFRP prestressing strand to exceed ~~70~~65% of the specified tensile strength of the strand, after seating. During each tensioning operation, for the

- → → → → a. For beams without ~~debonded~~ strands, at least ~~3~~three calendar days prior to shipping but no later than 50 calendar days after ~~detensioning~~.
- → → → → b. For beams with ~~debonded~~ strands, at least 3 calendar days prior to shipping, or between 42~~5~~ and 50 calendar days after ~~detensioning~~, whichever occurs first. ~~If the beam requires shipment prior to 42 calendar days, at least three calendar days prior to shipping.~~



SS4500802 PRECAST PRESTRESSED CONCRETE CONSTRUCTION

Adjusted allowable stress in CFRP strand for consistency with AASHTO Guide Specifications and Structures Design Guidelines. Corrected typo regarding beam end epoxy application time frame. Minor editorial changes. Removed unnecessary space.

Section 455 – Design-Build

The changes are proposed by Juan Castellanos from the Construction Office to simplify the requirements for the CSL tomography analysis

→ → When a shaft contains four tubes, test every possible tube combination. For shafts with five or more tubes, test all pairs of adjacent tubes around the perimeter, and one-half of the remaining number of tube combinations, as chosen by the Engineer. Pull the probes simultaneously, starting from the bottoms of the tubes, over an electronic depth measuring device. Perform the CSL tests with the source and receiver probes in the same horizontal plane. Continuously record CSL signals at depth intervals of 2-1/2 inches or less from the bottom of the tubes to the top of each shaft. Remove all slack from the cables prior to pulling to provide accurate depth measurements in the CSL records. When the measurements indicate a 30% or greater reduction in velocity between one or more pairs ~~take one or two concrete cores to allow further evaluation and repair, or replace the shaft as directed by the Engineer. Determine the location of the concrete cores by performing 3D tomographic analysis using the CSL measurements. The core depths shall be at least 5 feet deeper than the bottom of the anomaly determined by the 3D tomography analysis or full depth if the anomaly is within 5 feet of the bottom of the shaft. The Engineer may accept a drilled shaft without rock cores if an EAR demonstrates that the anomaly does not affect the structural and the geotechnical axial capacity, the structural and geotechnical lateral stability, the settlement behavior of the shaft, and that the anomaly will not impact the durability of the foundation.~~ perform 3D tomography analysis as indicated below.¶



SP45500000DB STRUCTURES FOUNDATIONS (DESIGN BUILD)

To simplify the requirements for CSL “Ta- Ma -graphy” analysis.

Eliminate the offset measurements to perform 3D tomography for the purpose of selecting the core locations. Reduce from four to two offset CSL measurements for the purpose of performing 3D tomography to evaluate a Drilled Shaft repair.

Section 455

The changes are proposed by Juan Castellanos from the Construction Office to simplify the requirements for the CSL tomography analysis.

~~When repairs are done, perform CSL measurements in all tube pair combinations with the source and receiver running at the same horizontal plane at the vertical offsets of 45° degrees above and below. Perform all measurements including the offset measurements from the point where the higher probe is at least 5 feet below the lower limit of the repaired zone to the point where the lower probe is at least 5 feet above the upper limit of the repaired zone. Perform offset Offset measurements must be as follows: plus 45° degrees (source below receiver) and provide minus 45° degrees (source above receiver). Use the measurements of these two offsets in combination with the horizontal measurements to perform the 3D tomography. Provide the CSL measurements, CSL logs and 3D tomographic analysis at no additional cost to the Department.~~

~~→ → → After acceptance of production shafts by the Engineer, fill the tubes or core holes with a structural non-shrink grout in accordance with 455-17.6.1.~~

~~→ → → If the Contractor determines at any time during the non-destructive testing and evaluation of the drilled shaft that the drilled shaft should be replaced, no further testing or evaluation of that shaft is required.~~



SS4551706 STRUCTURES FOUNDATIONS

To simplify the requirements for CSL tomography analysis.

Eliminate the offset measurements to perform 3D (TA – Ma-graphy) tomography for the purpose of selecting the core locations. Reduce from four to two offset CSL measurements for the purpose of performing 3D tomography to evaluate a Drilled Shaft repair.

Section 462

The changes are proposed by Jacqueline Petrozzino-Roche from the Structures Design Office to modify the word “Alternately” to “Additionally” to clearly state the Department’s policy. Both the flow cone test and the wet density test are required when grout filler is used to fill post-tensioning tendon ducts

→ → → → → → b. ~~Alternately~~ **Additionally**, check grout fluidity using Wet Density method contained in Section 938. Density at discharge outlet must not be less than grout density at inlet. Continuously discharge grout until density requirements are met. Discard grout used for testing fluidity.¶



SS4620704 POST-TENSIONING

The change in language is needed to clearly state the Department's policy. Both the flow cone test and the Wet Density Test are required when grout filler is used to fill post-tensioning tendon ducts.

Change the word "Alternately" to "Additionally" in Section 462-7.4.1.5.3.2.b. Both the flow cone test and the Wet Density Test are required when grout filler is used to fill post-tensioning tendon ducts.

Section 475 – Design-Build SP

The changes are proposed Larry Ritchie from the State Construction Office to remove the existing Developmental Specification 457 and incorporate the language as a Design-Build Special Provision.

475-8 Traffic Control.

During remedial action operations, perform all signing and traffic control in accordance with the current edition of the Department's Design Standards, Traffic Control through Work Zones. Provide Maintenance of Traffic (MOT) during remedial work at no additional cost to the Department. For non-emergency remedial work, the Engineer must approve all lane closures and traffic control plans in advance and notification of lane closures shall be made to the Engineer ~~5 days~~ ~~48 hours~~ in advance. For emergency remedial work and if the Responsible Party requests it, the Department will provide temporary MOT until the Engineer approves the Responsible Party's Traffic Control Plan. If MOT is requested, the Responsible Party shall reimburse the Department for all temporary MOT costs. In addition, if the urgency of the remedial work is such that the Department must provide MOT immediately and without delay prior to contacting the



SP47500000DB VALUE ADDED BRIDGE COMPONENTS

Requesting to change Developmental Specification 475 to Special Provision 475 which can be added to Design Build Projects.

Section 520

This change was proposed by Melissa Hollis from the State Estimates Office to establish separate payment for joints at concrete pavement in the Standard Specification.

For concrete traffic separator of constant width, meeting the requirements of Standard Plans, Index 520-020, the quantity to be paid will be the plan quantity, in feet, measured along the center of its width, completed and accepted, including the length of the nose.

For concrete traffic separator of nonstandard or varying width, the quantity to be paid will be the plan quantity, in square yards, completed and accepted.

~~For curbs of any type next to concrete pavement, the curb-pavement joint quantity to be paid will be the plan quantity, in feet, measured along the face of the completed and accepted curb.~~

SUBARTICLE 520-12.3 is expanded by the following:

520-12.3 Payment Items: Payment will be made under:

Item No. 520- 1-	Concrete Curb and Gutter - per foot.
Item No. 520- 2-	Concrete Curb - per foot.
Item No. 520- 3-	Concrete Valley Gutter - per foot.
Item No. 520- 4-	Curb-Concrete Pavement Joint - per foot.
Item No. 520- 5-	Concrete Traffic Separator - per foot.
Item No. 520- 6-	Concrete Shoulder Gutter - per foot.
Item No. 520- 70-	Concrete Traffic Separator - per square yard.



SS5200602 CONCRETE GUTTER, CURB ELEMENTS, AND TRAFFIC SEPARATOR

Allows for separate payment for joint between curb and concrete pavement.

Per coordination with FTBA, work for joint at concrete pavement is different from Curb or Concrete Pavement-Concrete Pavement joints.

Section 522

This change was proposed by Dino Jameson from the State Materials Office to update density requirements for foundation materials in sidewalks and driveways to the Standard Specification.

• **522-2-Materials.**¶

→ Meet the requirements specified in 520-2 and the embankment utilization requirements of Standard Plans Index 120-001.¶

¶

•

ARTICLE 522-4 is deleted and the following substituted.¶

• **522-4-Foundation.**¶

→ Shape and compact the foundation materials to a firm, even surface, true to grade and cross-slope. Compact areas that have been excavated more than 6 inches below the bottom of the concrete, to a minimum of 95% of AASHTO T99 density. The area to be compacted includes the area directly under and 1 foot beyond each side of the sidewalk or driveway, when right-of-way allows. Shape and compact the foundation materials with suitable equipment to a firm, even surface, true to grade and cross-slope. Compact cut-and-fill areas within 1 foot beyond each side of the sidewalk or driveway, when right-of-way conditions allow. Meet the testing frequency and maximum lift thickness requirements of Section 120. Record density test results in the Earthwork Records System (ERS) section of the Department's database for the foundation material below the bottom of concrete for a minimum depth of 2 feet for fill areas, and 1 foot for cut areas, to a density not less than 95% of the maximum density as determined by FM-1-T099. Compact the material in the remaining fill areas to match the adjacent area density.¶



SS5220200 CONCRETE SIDEWALK AND DRIVEWAYS

Needs update to density requirements for foundation materials for sidewalks and driveways.

Only require density reported into the logbook for 2 ft beneath the sidewalk for fill areas and 1 foot for cut areas.

Section 522

The changes are proposed by Bobby Bull from the Roadway Design Office to clarify requirements for sidewalk cross slopes to meet ADA Standards in the Standard Specification.

CONCRETE SIDEWALK AND DRIVEWAYS (REV 11-3-20)

ARTICLE 522-7 is expanded by the following:

522-7 Finishing.

522-7.1 Screeding: Strike-off the concrete by means of a wood or metal screed, used perpendicular to the forms, to obtain the required grade and remove surplus water and laitance.

522-7.2 Surface Requirements: Imprint concrete as detailed in the Plans, otherwise provide a broom finish. Ensure that the surface variations are not more than 1/4 inch under a 10-foot straightedge or more than 1/8 inch on a 5-foot transverse section. Finish the outer edges of the concrete with an edging tool having a radius of 1/2 inch.

522-7.3 Sidewalk Cross Slope Requirements: Construct sidewalk with cross slope as shown in the Plans and Standard Plans. When a cross slope is specified, this cross slope is not to be exceeded. Sidewalks must have some cross slope, but no more than 2.0% in either the positive or negative direction after construction.



SS5220703 CONCRETE SIDEWALK AND DRIVEWAYS

New language will be added as 522.-7.3 stating the sidewalk slope requirements for when slopes are both specified and not specified in the plans.

Section 526

The changes are proposed by Tim Counts from the State Materials Office to include concrete pavers for local side streets and adjust pay item language in the Standard Specification.

526-2 Materials.

526-2.1 General: Architectural pavers shall meet the following requirements:

Proposed Use	ASTM C902 (Brick Paver)	ASTM C1272 (Brick Paver)	ASTM C936 (Concrete Paver)
Roadways Local Side Streets (< 35 mph Design Speed)	Do Not Use	X	Do Not Use X
Commercial Driveways	Do Not Use	X	X
Sidewalks and Medians	X	Do Not Use	X
Residential Driveways	X	Do Not Use	X

Ensure that the pavers are consistent in color, size, and appearance. Architectural paver type, pattern, shape and/or color will be in accordance with plan details, when specified.



SS5260201 ARCHITECTURAL PAVERS

Needed to include Concrete pavers for local side streets and adjust Pay Item language per Melissa Hollis.

Table 526-1 updated to include concrete pavers for use in local sides streets (Less than 35mph)

526-5 Pay items listed as Architectural Pavers only.

Section 536

The changes are proposed by Richard Stepp from the Roadway Design Office to update terminology and clarify the language.

→ ~~536-3.14: Approach Terminal Assemblies:~~ Install approach terminal assemblies as specified in the Plans and APL drawings and in accordance with the geometry and adjacent grading of the Standard Plans. The APL number must be permanently marked on each assembly at a readily visible location using legible lettering at least 3/4" inch in height.¶

→ → If the Plans call for a ~~"flared"~~ approach terminal assembly and do not identify the specific system to be used, the contractor has the option to construct any Department-approved ~~"flared"~~ approach terminal assembly identified on the APL ~~that meets the applicable test criteria~~, subject to the conditions identified in the Plans or the APL drawings.¶

→ → Likewise, if the Plans call for a ~~"parallel"~~ approach terminal assembly and do not identify the specific system to be used, the contractor has the option to construct any Department-approved ~~"parallel"~~ terminal assembly identified on the APL, subject to the conditions identified in the Plans or the APL drawings.¶

→ ~~536-6.5: Bridge Anchorage Assembly/Approach Transition Connection to Rigid Barrier:~~ Price and payment will include all costs for furnishing and installing all hardware for approach ~~or trailing~~ transition connections to rigid barrier per the Standard Plans that are in addition to the cost of items included in 536-6.1. This includes costs for the concrete ~~transition block or alignment curb and its transition~~ where shown in the Standard Plans and barrier delineators for existing post and beam bridge railings. ~~This item applies for connections to concrete barrier, concrete pier protection barrier, and concrete or metal bridge traffic railing, including three-beam retrofits.¶~~



SS5360314 GUARDRAIL

"Flared" Approach Terminals are no longer used per MASH policy (RDB 18-02); The old term "Bridge Anchorage Assembly" is now phased out and new "Transition Connection to Rigid Barrier" received clarifications for inclusions and now includes trailing end connections.

"Flared" approach terminal terms removed; "Bridge Anchorage Assembly" term removed. "Transition Connection to Rigid Barrier" received clarifications for inclusions. Removed "Trailing End Transition Connection" from inclusion with Guardrail Pay Item.

Section 548

The changes are proposed by Dino Jameson from the State Materials Office to update language referencing the Materials Manual in the Standard Specification.

Identify the test wall with the required percent compaction effort and thickness in the ~~Logbook~~ Earthwork Records System (ERS) portion of the Department's database. If the thick lift density does not meet or exceed the thick lift density results during the test wall, perform dig-down density tests to verify the density of the bottom 6 inches of the lift. The Contractor may elect to place material in 6 inches compacted thickness at any time. Once approved, a change in the source of backfill material will require the construction of a new test wall. Do not change the compaction effort once the test wall is approved. The Engineer will periodically verify the density of the bottom 6 inches during thick lift operations. If unable to achieve the required density, remove and replace or repair the test wall to comply with the specifications at no additional expense to the Department. The Engineer may terminate the use of thick lift construction and instruct the Contractor to revert to the 6 inches maximum lift thickness if the Contractor fails to achieve satisfactory results or meet the requirements of this Section.



SS5480805 RETAINING WALL SYSTEMS

References to the density logbook need to be updated to Department's database.

Section 611

The changes are proposed by Derek Vollmer from the Traffic Engineering and Operations Office to add final acceptance requirements and field acceptance requirements for Intelligent Transportation System (ITS) Devices.

SUBARTICLE 611-2.2 is expanded by the following:

611-2.2.1 Traffic Control Signal and Device Installation: Submit Form 750-010-02, Submittal Data – Traffic Control Equipment for each cabinet location to the Engineer. The Engineer will make the final inspection with a Contractor's representative and a representative of the agency designated to accept maintenance responsibility. The Engineer will submit the approved form to the District Traffic Operations Engineer and place a hard copy in the cabinet at each location. Transfer warranties and guarantees on equipment to the Department in accordance with Section 608. For traffic signal installations, submit form 700-010-22, Final Acceptance of Traffic Signal Installation(s), and Transfer of Maintenance, to the Engineer.

611-2.2.2 Intelligent Transportation System Device Installation: The Engineer will make the final inspection with a Contractor's representative and a representative of the agency designated to accept maintenance responsibility. Transfer warranties and guarantees on equipment to the Department in accordance with Section 608. Final Acceptance of ITS installation is contingent on successfully completing the ITS Acceptance Test section.



SS6110202 ACCEPTANCE PROCEDURES FOR TRAFFIC CONTROL SIGNALS, DEVICES, AND INTELLIGENT TRANSPORTATION SYSTEM DEVICES. (FINAL REVISION)

Added "Intelligent Transportation System Devices" to Section 611 title. Add a separate subarticle 611-2.2.2 for ITS device's final acceptance and 611-4.2 for ITS devices field acceptance. Add ITSFM deliverables description in 611-2.3.1 and new subarticles 611-8, 611-9.

A new pay item was also established in the Standard Specification. Please note this proposal is associated with proposed revisions 7000419, 6600202, 6820104, and 6480104.

Section 620

The changes are proposed by Derek Vollmer from the Traffic Engineering and Operations Office to move the materials section to Section 996 in Division III.

GROUNDING AND LIGHTNING PROTECTION (REV 211-15-210)

SUBARTICLE 620-2.7 is deleted and the following substituted:

620-2.7 Surge Protective Devices (SPDs): ~~Provide SPDs to protect electronics from lightning, transient voltage surges, and induced current.~~

Install SPDs on all power, data, video and any other conductive circuit. SPD requirements for lighting must meet the minimum requirements of Section 992 and the Standard Plans. Use SPDs that meet the requirements of Section 996 and are listed on the Department's Approved Product List (APL) SPDs for traffic control devices, including intelligent transportation system (ITS) equipment, must be listed on the Department's Approved Product List (APL).

Provide primary and secondary surge protection on AC power at traffic control device field sites.



SS6200207 GROUNDING AND LIGHTNING PROTECTION

The materials subarticles (620-2.7, 620-2.7.1, 620-2.7.2, 620-2.7.3, 620-2.7.4, 620-2.7.5) have been moved Section 996 in Division III. The materials article in this section has been moved from Section 620 in Division II to Section 996 in Division III.

Section 630

The changes are proposed by Derek Vollmer from the Traffic Engineering and Operations Office to include intermediate, rigid, and schedule 80 for above ground communication and electrical application. Clarified intermediate metal conduit as being galvanized as well as termination points for local wire.

Use only intermediate galvanized metal conduit, rigid galvanized metal conduit, rigid aluminum conduit or PVC coated intermediate metal conduit for above-ground electrical power service installations and rigid galvanized metal conduit or rigid aluminum conduit for underground electrical power service installations. Meet the requirements of Section 562 for coating all field cut and threaded galvanized pipe.

Use Schedule 80 PVC or fiberglass reinforced epoxy conduit in or on structural elements.

For non-structure, above ground ITS communication and electrical conduit, use intermediate galvanized metal conduit, rigid galvanized metal conduit, or Schedule 80 PVC conduit.

Use HDPE with an SDR number less than or equal to 13.5, Schedule 80 HDPE, Schedule 40 HDPE, Schedule 80 PVC, or Schedule 40 PVC for underground installations of electrical conduit in earth for ITS electrical applications.

Use HDPE with an SDR number less than or equal to 11, Schedule 80 PVC or Schedule 40 PVC for underground installations in earth or concrete for ITS and traffic control signal applications, except, use only HDPE with an SDR number less than or equal to 11 for blown fiber optic cable installations on limited access facilities.

Use HDPE with an SDR number less than or equal to 13.5, Schedule 80 PVC, or Schedule 40 PVC for underground installations of electrical conduit in earth for lighting applications and landscape irrigation applications.



SS630301 CONDUIT

Added intermediate, rigid, and sch 80 for above ground communication and electrical application. Electrical conduit must be UL listed. Added HDPE, sch 80, and sch 40 for electrical conduit. Clarified intermediate metal conduit as being galvanized. Clarified termination points for locate wire.

660-3.1: Added "galvanized". Added above ground and under ground conduit for electrical applications. 660-3.7: Added "galvanized". 660-3.9: Clarified locate wire termination.

Section 633

The changes are proposed by Derek Vollmer from the Traffic Engineering and Operations Office to update the fiber optic cable characteristics, performance requirements, connector types, fiber optic jumper description, splice installation, splice testing, and fiber optic cable testing. This proposed spec change is conjunction with Section 7 and 711.

Geometry	
Cladding Diameter:	125 μ m, \pm 0.7 μ m
Core-to-Cladding Concentricity:	\leq 0.5 μ m
Cladding Noncircularity:	\leq 0.7%
Mode Field Diameter: 1,550 nm:	10.4 μ m, \pm 0.5 μ m
Coating Diameter:	245 μ m, \pm 5 μ m
Colored Fiber Nominal Diameter:	250 μ m \pm 15 μ m
Optical	
Cabled Fiber Attenuation: 1,310 nm, \leq 0.354 dB/km; 1,550 nm, \leq 0.254 dB/km	
Point Discontinuity: 1,310 nm, \leq 0.05 dB/km; 1,550 nm, \leq 0.05 dB/km	
Cable Cutoff Wavelength (λ_{cutoff}):	\leq 1,260 nm.
Total Dispersion: 1,550 625 nm \leq 18 25 ps/(nm•km)	
Macrobend Attenuation: Turns - 100; Outer diameter (OD) of the mandrel - 560 mm, \pm 2 mm:	\leq 0.045 dB at 1,550 nm
Cabled Polarization Mode Dispersion (PMD ₀):	\leq 0.045 ps/ \sqrt km



SS6330201 COMMUNICATION CABLE

Updated the fiber optic cable characteristics, performance requirements, connector types, fiber optic jumper description, splice installation, splice testing, fiber optic cable testing. Add fiber optic cable locator subarticle, measurement, pay item.

633-2.1.1.1:table;633-2.1.1.4:strength member;633-2.1.1.6:sheath removal;633-2.1.1.9.1:temperature;633-2.1.3:connector type;633-2.1.4:connector type;633-2.1.5:jumper cable;633-3.1.5:splice connection;633-3.1.8:Fiber results format;633-5:locator;633-7.

Section 635

The changes are proposed by Derek Vollmer from the Traffic Engineering and Operations to move the material language to Division III Section 996.

PULL, SPLICE, AND JUNCTION BOXES (REV ~~211-14-210~~)

SUBARTICLE 635-2.2.1 is deleted and the following substituted:

635-2.2 Pull and Splice Boxes:

~~635-2.2.1 General: Manufacturers of concrete pull and splice boxes and covers seeking inclusion on the APL shall meet the requirements of Section 105 and this Section and be listed on the Department's Production Facility Listing.~~

~~Use only boxes that meet the requirements of Section 996 and are listed on the Department's Approved Product List (APL).~~ Ensure box bodies and covers are free of flaws such as cracks, sharp, broken, or uneven edges, and voids.

Ensure in-ground boxes have an open bottom design.



SS6350202 PULL, SPLICE, AND JUNCTION BOXES

The materials subarticles in this section has been moved Section 996 in Division III. Metal junction boxes should be grounded to address shock hazards. Subarticles 635-2.2.1 through 635-2.2.5 in Division II has been moved to Article 996-5 in Division III. In 635-3.1, added a sentence for grounding metal junction boxes.

Section 641

The changes are proposed by Derek Vollmer from the Traffic Engineering and Operations Office to remove the following material and installation language from Division II to Section 996 in Division III.

PRESTRESSED CONCRETE POLES (REV 2/13-24-210)

SUBARTICLE 641-2.2 is deleted and the following substituted:

641-2.2 Camera Lowering Device: Use lowering devices that meet the requirements of Section 996 and are listed on the Department's Approved Product List (APL). Personnel must use the lowering device with manufacturer name or trademark, model or part number, date of manufacture, and serial number.

The lowering device must provide the electrical connection between the control cabinet and the equipment installed on the lowering device without reducing the function or effectiveness of the equipment. The lowering device system support arms must be capable of withstanding service tension and their tips to 1 kip minimum.

The lowering device must include a disconnect unit and power, data, and video cables (as applicable) for connecting equipment to a dished support arm, pole attachment provision, a rotatable pole-top station, and a pole-top junction box, unless otherwise shown in the plans.

All external components are to be made of corrosion-resistant materials that are powder coated, galvanized, or otherwise protected from the environment. All finished coatings must have a smooth finish free from cracks, holes, blisters, and other flaws. All other finished finishes must be corrosion resistant stainless steel or aluminum. All pulleys used in the lowering device and portable lowering tool must have sealed, self-lubricated or oil-tight bearings, or sealed bronze bearings.

Provide a minimum of 100 feet of composite power and signal cable provided in the lowering device or the factory unless otherwise shown in the Plans. Splices will not be allowed.

Use only lowering devices designed to withstand the design wind speeds defined in the Department's Structures Manual.



SS6410202 PRESTRESSED CONCRETE POLES

For clarity between materials and installation methods in the SSRBC, the materials subarticles (641-2.2, 641-2.2.1, 641-2.2.2, 641-2.2.3, 641-2.2.4, 641-2.2.6) in Division II will be moved to a new article in Division III. Subarticles 641-2.2.1 through 641-2.2.6 in Division II has been moved to Article 996-6 in Division III.

Section 646

The changes are proposed by Jason Russell from the State Construction Office to include painted aluminum poles, pedestals, and posts to the warranty.

ALUMINUM POLES, PEDESTALS, AND POSTS (REV 12-10-20)

ARTICLE 646-1 is deleted and the following substituted:

646-1 Description.

The work in this Section consists of furnishing and installing aluminum poles, pedestals, and posts at the locations shown in the Plans and in accordance with the details shown in the Plans and Standard Plans, subject to a five-year warranty period as defined herein. The warranty period will apply only when aluminum poles, pedestals, and posts are painted as called for in the Contract Documents. An aluminum pedestal consists of a pole and a transformer base.



SS6460100 ALUMINUM POLES, PEDESTALS, AND POSTS

Changes needed to include painted aluminum light poles, pedestals, and posts to the warranty program. Add warranty and qualification language for painted aluminum poles, pedestals, and posts.

Section 649

The changes are proposed by Jason Russell from the State Construction Office to modify the name of the Prequalified Fabricators List that include aluminum products.

GALVANIZED STEEL POLES, MAST ARMS, AND MONOTUBE ASSEMBLIES (REV 11-12-20)

SUBARTICLE 649-4.3.1 is deleted and the following substituted:

649-4.3 Painting:
649-4.3.1 General: When required by the Contract Documents, provide painted poles, mast arms and monotube assemblies. Provide products from a fabricator on the Department's list of [Prequalified Painted Galvanized Steel and Aluminum Products Fabricators List](#). Provide products that will meet specification requirements throughout the warranty period. Meet the color requirement as specified in the Contract Documents. Provide the Engineer with two metal sample coupons, a minimum of 2 inches by 4 inches, painted concurrently and with the same paint as was used on the first lot of any poles, mast arms and monotube assemblies delivered to the jobsite. Submit sample coupons and manufacturer product data sheets to the Engineer along with the delivery of the first shipment of any painted poles, mast arms or monotube assemblies delivered to the jobsite. At the time of their delivery, the sample coupons described in this paragraph shall match the color of the poles, mast arms and monotube assemblies to within 1ΔE when measured as specified in 975-4. The Engineer will perform a visual color comparison between the delivered products and sample coupons. The Engineer may evaluate and document any color difference by measuring as specified in 975-4. If the delivered sample coupons exhibit a difference in color from the poles, mast arms and monotube assemblies greater than 1ΔE then the sample coupons will be considered unacceptable and no payment shall be made for the materials which the sample coupons represent. Those materials shall not be accepted by the Department until acceptable representative sample coupons in accordance with the requirements of this Section have been submitted to the Engineer.



SS6490403 GALVANIZED STEEL POLES, MAST ARMS, AND MONOTUBE ASSEMBLIES

Minor nomenclature change for consistency with the SCO website, other specifications, documents, and forms. Minor name change to the Prequalified Fabricators List to include aluminum products.

Section 654

The changes are proposed by Derek Vollmer from the Traffic Engineering and Operations Office to clarify passive detection allowed for actuation.

MIDBLOCK CROSSWALK ENHANCEMENT ASSEMBLIES (REV 11-12-20)

SUBARTICLE 654-2.1 is deleted and the following substituted:

654-2.1 In-Roadway Light Assemblies: In-roadway light assemblies must meet the physical and operational requirements of the latest edition of the MUTCD, Chapter 4N.

~~In-roadway light assemblies shall be normally dark, initiate operation only upon pedestrian actuation via a pedestrian pushbutton. In-roadway light assemblies can include a passive detector in addition to a pedestrian pushbutton. In-roadway light assemblies must be normally dark and initiate operation upon pedestrian actuation via a pedestrian pushbutton or a passive detector. The In-roadway light assembly will cease operation at a predetermined time after the pedestrian actuation, or with passive detection after.~~ ~~If a passive detector is used, the In-roadway light assembly may cease operation after~~ the pedestrian clears the crosswalk. The duration of the predetermined period shall be programmable and capable of matching the pedestrian clearance time for pedestrian signals as determined by MUTCD procedures. The timer that controls flashing must automatically reset each time a pedestrian call is received.

In-roadway light assemblies must have a minimum luminance of 101 candelas and a minimum viewing angle of 20 degrees.



SS6540201 MIDBLOCK CROSSWALK ENHANCEMENT ASSEMBLIES

The passive detection is another way to activate the In-Roadway Light Assemblies and Rectangular Rapid Flashing Beacons (RRFB). The stated RRFB flashing pattern should be implemented for all deployments. The new sign is being referenced.

In 654-2.1 and 654-2.2.3 clarify passive detection allowed for actuation. In 654-2.2.2, added "No other flash patterns shall be selectable via hardware or software". In 654-2.2.3 added reference to sign FTP-68C-21. 654-6, added midblock crosswalk to pay item name.

Section 660

The changes are proposed by Derek Vollmer from the Traffic Engineering and Operations Office to distinguish the presence detection and introduce new pay items between both functions. The proposed spec change is in accordance with Section 611.

VEHICLE DETECTION SYSTEM (REV 11-12-20)

SUBARTICLE 660-2.2.2.2 is deleted and the following substituted:

660-2.2.2.2 Video: A video vehicle detection system (VVDS) uses one or more cameras recommended by the manufacturer or an integrated thermal sensor and video analytics hardware and software to detect vehicle presence, provide a detection output, and generate volume, occupancy, and speed data.

SUBARTICLE 660-2.2.2.3 is deleted and the following substituted:

660-2.2.2.3 Microwave: A microwave vehicle detection system (MVDS) transmits, receives, and analyzes a FCC-certified, low-power microwave radar signal to detect vehicle presence, provide a detection output, and generate volume, occupancy, and speed data.

SUBARTICLE 660-4.2.2 is deleted and the following substituted:

660-4.2.2 Field Acceptance Testing: Vehicle detection data must be collected and field acceptance testing is required for all systems to be installed in accordance with 660-2.2.2.2 and 660-2.2.2.3. Compare sample data collected from the detection system with ground truth data collected by human observations. For site acceptance testing, compare sample ground truth data for each site for a minimum of five minutes during a peak period and for a minimum of one hour during off-peak periods. Perform site acceptance testing for the proposed detection system. Conduct field acceptance testing in accordance with Section 611.



SS6600202 VEHICLE DETECTION SYSTEM

Video detectors and microwave detectors have two separate functions, providing presence detection as well as volume, occupancy, speed (VOS) detection. Two different types of detectors provide the two different functions. To help differentiate between the two function types, additional pay items are introduced. Also, link field testing to Section 611.

In 660-2.2.2.2 and 660-2.2.2.3, to distinguish between the presence detection and VOS detection, replace "and" with "or". Introduce Pay Items 660-9 and 660-9 to distinguish between both functions. In 660-4.2.2, add reference to Section 611.

Section 682

The changes are proposed by Derek Vollmer from the Traffic Engineering and Operations Office to provide guidance on field acceptance testing with Section 611.

VIDEO EQUIPMENT (REV 11-12-20)

SUBARTICLE 682-1.4 is deleted and the following substituted:

682-1.4 Field Acceptance Testing.

~~Develop and submit a field acceptance test (FAT) plan to the Engineer for review and approval. The test plan must demonstrate all functional requirements specified for the device or system under test. Perform the FAT on the equipment covered in Article 682-1. The Engineer reserves the right to witness all tests. Conduct field acceptance testing in accordance with Section 611.~~

Perform local field ~~inspection~~^{operational tests} at each local CCTV field sites to verify and confirm the following:

1. Physical construction has been completed as specified in the Plans and all existing and proposed lanes are clearly visible with no line of site obstructions.
2. The quality and tightness of ground and surge protector connections.
3. Proper voltages for all power supplies and related power circuits.
4. All connections, including correct installation of communication and power cables.

~~5. Video signal from the camera is present and of consistent quality at all connection points between the camera, the cabinet, and any video devices therein.~~

~~6. The communication link between the cabinet and the camera is functioning properly by performing PTZ and focus in all directions and executing a minimum of three other unique programming commands.~~



SS6820104 VIDEO EQUIPMENT

The Subarticle 611-4.2 offers guidance on the field acceptance testing as well as referencing the FDOT Form 750-040-08, CCTV Standalone Test Plan. In 682-1.4, the field acceptance testing shall be performed in accordance with 611.

Section 684

The changes are proposed by Derek Vollmer from Traffic Engineering and Operations Office to provide guidance on field acceptance testing in accordance to Section 611.

NETWORK DEVICES (REV 11-12-20)

SUBARTICLE 684-1.4 is deleted and the following substituted:

684-1.4 Field Acceptance Testing: ~~Develop and submit a field acceptance test (FAT) plan to the Engineer for review and approval. The Engineer reserves the right to witness all FATs. Conduct field acceptance testing in accordance Section 611.~~

Once the MFES has been installed, conduct local ~~FAT~~ field inspection at the MFES field site according to the approved test plan. Perform the following:

1. Verify that physical construction has been completed as detailed in the Plans.
2. Inspect the quality and tightness of ground and surge protector connections.
3. Verify proper voltages for all power supplies and related power circuits.
4. Connect devices to the power sources.
5. Verify all connections, including correct installation of communication and power cables.

~~6. Verify configuration of the MFES Internet Protocol (IP) addresses and subnetwork mask.~~

~~7. Verify the network connection to the MFES through ping and SSH sessions from a remote personal computer (PC).~~

~~8. Perform testing on minimum routing time/capacity.~~



SS6840104 NETWORK DEVICES

The subarticle 611-4.2 offers guidance on the field acceptance testing as well as referencing the FDOT Form 750-040-07, MFES Standalone Test Plan. In 684-1.4, the field acceptance testing shall be performed in accordance with 611.

Section 700

The changes are proposed by Dana Knox from the Roadway Traffic Engineering and Operations Office to add language for the in-street R1-6a sign to the Standard Specification.

SUBARTICLE 700-1.2.3 is deleted and the following substituted:

700-1.2.3 Static Sign Assembly Requirements: All sign panels shall be aluminum unless otherwise shown in the Plans. See 700-7 for In-Street sign requirements. Sheets and plates for sign panels shall meet the requirements of ASTM B209, Aluminum Association Alloy 6061-T6, 5154-H38 or 5052-H38. Sign panels for single column ground mounted signs shall utilize aluminum plate with a minimum thickness of 0.08 inches. All other sign panels shall utilize aluminum plate with a minimum thickness of 0.125 inches. All panels shall have rounded corners. For flip up signs, the continuous hinge shall be stainless steel ANSI grade 316.

SUBARTICLE 700-1.2.4 is deleted and the following substituted:

700-1.2.4 Retroreflective Sign Sheeting: Use signs that meet the material and process requirements of Section 994.
Use Type XI sheeting for all regulatory, warning, and overhead signs unless otherwise specified. The R1-1, R1-2, R5-1 and R5-1a signs must use a sheeting system that includes a colorless film overlay.
Type XI sheeting shall also be used for all limited access advance exit and exit guide signs.
Use Type IV fluorescent yellow-green fluorescent sheeting for the following signs:



SS7000102 HIGHWAY SIGNING

Added language for the in-street R1-6a sign.

Section 700

The changes are proposed by Derek Vollmer from the Traffic Engineering and Operations Office to add new interfaces to connect with electronic sign controllers and update language in the Standard Specification.

SUBARTICLE 700-4.19 is deleted and the following substituted:

700-4.19 Installed Site Tests: ~~Conduct an approved, stand-alone equipment installation test at the field site. Test all stand-alone (i.e., non-network) functions of the field equipment using equipment installed as detailed in the Plans and as approved by the Engineer. Complete approved data forms and turn them over to the Engineer for review and as a basis for rejection or acceptance. Provide a minimum notice of 30 calendar days prior to all tests to permit the Engineer or their representative to observe each test. If any unit fails to pass its stand-alone test, correct the unit or substitute another unit in its place, then repeat the test. If a unit has been modified as a result of a stand-alone test failure, prepare a report describing the nature of the failure and the corrective action taken and submit it to the Engineer prior to re-testing the unit. If a failure pattern develops, the Engineer may direct that design and construction modifications be made to all units without additional cost to the Department or an extension of the Contract Time. Conduct Intelligent Transportation System Device Installation testing in accordance with Section 611.~~



SS7000419 – HIGHWAY SIGNING

Electronic display sign vendors have requested additional types of interfaces to connect to the sign controller. Testing will be done in accordance with the new language in Section 611. Operational and Acceptance Testing will be removed.

Section 701

The changes are proposed by Olivia Townsend from the State Construction Office to update language to plan quantity in the Standard Specification.

701-10.9 Submittals-Method of Measurement.

701-9.1 Submittal Instructions: Prepare a certification of quantities, using the Department's current approved form, for each project in the Contract. Submit the certification of quantities and daily worksheets to the Engineer. The Department will not pay for any disputed items until the Engineer approves the certification of quantities.

701-9.2 Contractor's Certification of Quantities: Request payment by submitting a certification of quantities no later than Twelve O'clock noon Monday after the estimate cut-off date or as directed by the Engineer, based on the amount of work done or completed. Ensure the certification of quantities consists of the following:

1- Contract Number, FPID Number, Certification Number, Certification Date and the period that the certification represents.

2- The basis for arriving at the amount of the progress certification, less payments previously made and less any amount previously retained or withheld. The basis will include a detailed breakdown shown on the certification of items of payment.

701-9.1 Profiled Thermoplastic Markings: The quantities of 6 inch solid and 10'-30' skip lines to be paid will be the plan quantity length, authorized and acceptably applied, under this Section will be paid as follows:

1- The length, in gross miles, subject to 9-1.3.2. The gross mile measurement will be taken as the distance from the beginning of the profiled thermoplastic line to the end of the profiled thermoplastic line and will include the unmarked gaps for skip lines. The gross mile will not include designated unmarked lengths at intersections, turn lanes, etc., of 6-inch solid and 10'-30' skip lines.

701-9.2 Removal of Existing Thermoplastic Markings: The quantity to be paid for



SS7010900 PROFILED THERMOPLASTIC PAVEMENT MARKINGS

The language needed to be updated from certified quantity to plan quantity for applied profiled thermoplastic markings.

Deleted Article 701-9 and updated method of measurement (710-10) to plan quantity for Profiled Thermoplastic Markings.

Section 704

The changes were proposed by Gevin McDaniel from the Roadway Design Office to use the same product as the Managed Laned Markers for permanent channelizing devices on Arterials and Collectors. The colors for them tubular markers will be the same as the lane line that they supplement.

- SECTION 704
TUBULAR MARKERS
- 704-1 Description
 - Furnish and install tubular markers at the locations called for in the Standard Plans or in the Plans.
- 704-2 Materials
 - Meet the following requirements:
 - Durable Tubular Markers → Section 291*
 - Standard Tubular Markers → Section 291*
 - 704-2.1 Product Acceptance on the Project: Use tubular markers listed on the Department's Approved Product List (APL).
- 704-3 Installation Requirements
 - Install tubular markers in accordance with the manufacturer's installation instructions posted on the APL. Use the same color as the pavement marking being emphasized.
- 704-4 Method of Measurement
 - The quantity to be paid will be the number of tubular markers furnished, installed, and accepted.
- 704-5 Basis of Payment
 - Prices and payments will be full compensation for work specified in this Section, including the cost of labor, materials, and incidental items required to complete the work.
 - Payment will be made under.



SS7040000 TUBULAR MARKERS

This Specification change is in line with moving the needle on the vital few by providing a more visible and durable product as a channelizing device to improve the safety of bicyclists and pedestrians on arterials and collectors. Until now, this product has been used on Managed Lane to preclude lane changing. The durability, visibility and larger diameter of these products are desired. The increased durability will also benefit the department and improved safety by not having to be replaced as often. The reduction in MOT operations for replacement drastically improved safety on our roadways.

These products have a slightly higher initial cost over “high performance delineators”; however, the long-term savings in maintenance greatly outweighs the increased initial cost. As stated above, the fewer MOT operations improve safety, mobility, and further reduce costs. There is no change to consultant fees.

Section 706

This change was proposed by Melissa Hollis from the State Estimates Office to separate RPMs from 710-90 Final Surface measurement in the Standard Specification.

706-2 Materials.

- Use only Class B markers, ~~except as follows: unless otherwise shown in the Plans.~~
- ~~For center line rumble strip installations where RPMs are in conflict with the grinding, install Class D RPMs with the first application of standard paint. Remove Class D RPMs prior to grinding, then install Class B RPMs in an unground area after grinding.~~
- ~~Install Class F RPMs only when shown in the plans.~~
- Meet the requirements of Section 970.
- **706-2.1 Product Acceptance on the Project:** Use only RPMs and bituminous adhesive that are listed on the Department's Approved Product List (APL). For Class F RPMs, provide a warranty assigned to the Department in accordance with Section 970.



SS7060200 – RAISED PAVEMENT MARKERS AND BITUMINOUS ADHESIVE

This change was proposed to separate RPMs from 710-90 Final Surface Markings. With improved CADD models, the quantity of RPMs can be separately quantified. Plan quantity measurement will minimize field adjustments to the quantity.

Please note there are two other proposed revisions associated to this revision, 1020200, and 7100200.

Section 709

The changes are proposed by Olivia Townsend from the State Construction Office to update language to plan quantity in the Standard Specification.

ARTICLE 709-9 is deleted and the following substituted:

709-10.9 Submittals, Method of Measurement.

~~709 9.1 Submittal Instructions: Prepare a certification of quantities, using the Department's current approved form, for each project in the Contract. Submit the certification of quantities and duly worksheets to the Engineer. The Department will not pay for any disputed items until the Engineer approves the certification of quantities.~~

~~709 9.2 Contractor's Certification of Quantities: Request payment by submitting a certification of quantities no later than Twelve O'clock noon Monday after the estimate cut-off date or as directed by the Engineer, based on the amount of work done or completed. Ensure the certification of quantities consists of the following:~~

~~1. Contract Number, FPID Number, Certification Number, Certification Date and the period that the certification represents;~~

~~2. The basis for arriving at the amount of the progress certification, less payments previously made and less any amount previously retained or withheld. The basis will include a detailed breakdown provided on the certification of items of payment.~~

~~709 9.1 Two Reactive Components Markings: The quantity of solid, 10'-30' skip, and 3'-9' dotted, 6'-10' dotted, 2'-2' dotted, and 2'-4' dotted lines to be paid will be the plan quantity length, in gross miles, subject to 9-1.3.2, authorized and acceptably applied, under this Section will be paid as follows:~~



SS7090900 TWO REACTIVE COMPONENTS PAVEMENT MARKINGS.

The language needed to be updated from certified quantity to plan quantity for two reactive component markings.

Deleted Article 709-9 and 709-11 and updated method of measurement and basis of payment to plan quantity for two reactive component markings.

Section 710

This change was proposed by Melissa Hollis from the State Estimates Office to separate RPMs from 710-90 Final Surface measurement in the Standard Specification. The change also affects Sections 102 and 706.

ARTICLE 710-2 is deleted and the following substituted:

710-2 Materials.

Use only materials listed on the Department's Approved Product List (APL) meeting the following requirements:

~~Materials for Raised Pavement Markings (RPMs) and Glitters~~
~~Adhesive.....Section 970~~
Standard Paint..... 971-1 and 971-3
Durable Paint..... 971-1 and 971-4
Glass Spheres..... 971-1 and 971-2

The Engineer will take random samples of all material in accordance with the Department's Sampling, Testing and Reporting Guide schedule.



SS7100200 PAINTED PAVEMENT MARKINGS

This change was proposed to separate RPMs from 710-90 Final Surface Markings. With improved CADD models, the quantity of RPMs can be separately quantified. Plan quantity measurement will minimize field adjustments to the quantity.

Section 711

The changes are proposed by Olivia Townsend from the State Construction Office to update language to plan quantity in the Standard Specification.

THERMOPLASTIC PAVEMENT MARKINGS (REV 11-4-210)

ARTICLE 711-9 is deleted and the following

711-10.9 Submittals, Method of Measurement.

711-9.1 Submittal Instructions: Prepare a certification of quantities, using the Department's current approved form, for each project in the Contract. Submit the certification of quantities and daily worksheets to the Engineer. The Department will not pay for any disputed items until the Engineer approves the certification of quantities.

Thermoplastic Pavement Markings: The plan quantity, the certified quantities authorized and acceptably applied and subject to 9-1.3.2, under this Section will be paid as follows:

1. The length, in gross miles, of solid, 10'-30' skip, 3'-9' dotted, 6'-10' dotted, 2'-2' dotted, and 2'-4' dotted lines.
2. The length, in linear feet, of transverse lines, diagonal lines, chevrons, and parking spaces, special emphasis crosswalk markings, and railroad dynamic envelope markings.
3. The number of pavement messages, symbols, and arrows. Each arrow is paid as a complete marking, regardless of the number of "points" or directions.



SS7110900 THERMOPLASTIC PAVEMENT MARKINGS

The language needed to be updated from certified quantity to plan quantity for thermoplastic pavement markings.

Deleted Article 711-9 and updated method of measurement and basis of payment to plan quantity for thermoplastic pavement markings.

Section 713

The changes are proposed by Olivia Townsend from the State Construction Office to update language to plan quantity in the Standard Specification.

PERMANENT TAPE PAVEMENT MARKINGS (REV 11-43-210)

ARTICLE 713-9 is deleted and the following substituted:

713-9 Submittals, Method of Measurement.

713-9.1 Submittal Instructions Permanent Tape Markings: Prepare a certification of quantities, using the Department's current approved form, for each project in the Contract. Submit the certification of quantities and daily worksheets to the Engineer. The Department will not pay for any disputed items until the Engineer approves the verification of quantities. The quantities of 6 inch solid, 10'-30' skip, and 3'-9' dotted lines to be paid will be the plan quantity length, in gross miles, subject to 9-1.3.2.

The gross mile measurement will be taken as the distance from the beginning of the permanent tape line to the end of the permanent tape line and will include the unmarked gaps for skip and dotted lines. The gross mile measurement will not include designated unmarked lengths at intersections, turn lanes, etc.

713-9.2 Contractor's Certification of Quantities Removal of Existing Markings: Request payment by submitting a certification of quantities no later than Twelve O'clock noon Monday after the estimate cut-off date or as directed by the Engineer, based on the amount of



SS7130900 PERMANENT TAPE PAVEMENT MARKINGS

The language needed to be updated from certified quantity to plan quantity for permanent tape markings.

Deleted Article 713-9 and updated method of measurement and basis of payment to plan quantity for permanent tape markings.

Section 715

The changes are proposed by Jason Russell from the State Construction Office to include paint requirements for conventional light pole assemblies to Section 715.

715-2 Painting:

715-2.1 General: When required by the Contract Documents, provide painted conventional light pole assemblies. Provide products that will meet specification requirements throughout the warranty period. Meet the color requirement as specified in the Contract Documents. Provide the Engineer with two metal sample coupons, a minimum of 2 inches by 4 inches, painted concurrently and with the same paint as was used on the first lot of any conventional aluminum light pole assemblies delivered to the jobsite. Submit sample coupons and manufacturer product data sheets to the Engineer along with the delivery of the first shipment of any painted conventional aluminum light pole assemblies delivered to the jobsite. At the time of their delivery, the sample coupons described in this paragraph must match the color of the conventional light pole assemblies to within 1ΔE measured as specified in 975-4. If the delivered sample coupons exhibit a difference in color from the conventional light pole assemblies greater than 1ΔE then the sample coupons will be considered unacceptable and no payment shall be made for the materials which the sample coupons represent. Those materials shall not be accepted by the Department until acceptable representative sample coupons in accordance with the requirements of this Section have been submitted to the Engineer.

715-2.2 Responsible Party Warranty: When the Contract Documents call for painted conventional light pole assemblies, the Contractor shall designate a responsible party to accept responsibility. The responsible party designated by the Contractor must execute and submit to the Department a form, provided by the Department, prior to the first delivery to the jobsite of any painted conventional light pole assemblies stipulating that the responsible party accepts responsibility for ensuring the coating system adhesion and color retention requirements as specified in 975-4 are met for a period of five years after final acceptance in accordance with 5-11. The responsible party shall also bear the continued responsibility for performing all remedial work associated with repairs of any adhesion or color retention failure as defined in Section 975, as to which notice was provided to the responsible party within the five year warranty period. Failure to timely designate the responsible party will result in the Contractor being the responsible party unless otherwise agreed to in writing by the Department. The responsible party



SS7150000 HIGHWAY LIGHTING SYSTEM

Due to internal review comments on the revisions to 646 and 649. Additional language had to be included into 715 for clarification of the paint requirements for conventional light assemblies.

Add language to include paint requirements for conventional light pole assemblies.

Section 902

The changes are proposed by Harvey (Dale) DeFord from the State Materials Office to add lightweight fine aggregate for internal curing to the Standard Specification.

FINE AGGREGATE (REV 11-5-20)

ARTICLE 902-7 is deleted and the following substituted:

902-7 Exceptions, Additions and Restrictions. Lightweight Fine Aggregate for Internal Curing.

~~Other specification modifications, based on material usage may be found in the appropriate sections of the Specifications. Fine lightweight aggregate suitable for internal curing shall meet the requirements of ASTM C1761.~~

SECTION 902 is expanded by the following:

902-78 Exceptions, Additions and Restrictions.



SS9020700 FINE AGGREGATE

Lightweight fine aggregate has been added for internal curing to the standard specification.

Section 916

The changes are proposed by Wayne Rilko from the State Materials Office to clarify Table 916-1 in the Standard Specification.

Pressure Aging Vessel Residue (AASHTO R 28-12 (2016))		
Dynamic Shear Rheometer, AASHTO T 315-19	$G^* \sin \delta$, 10 rad/sec.	Maximum 5,000 kPa ^(a) Maximum 6,000 kPa^(b)
Creep Stiffness, AASHTO T 313-19	S (Stiffness), @ 60 sec. m-value, @ 60 sec.	Maximum 300 MPa Minimum 0.300
ΔT_c , ASTM D7643-16	20 hours PAV aging S (Stiffness), @ 60 sec. m-value, @ 60 sec.	$\Delta T_c \geq -5.0^\circ\text{C}$

(a) Binders with values higher than 3 Pa/s should be used with caution and only after consulting with the supplier as to any special handling procedures, including pumping capabilities.
 (b) Dynamic Shear Rheometer (AASHTO T 315-19) shall be performed on original binders for the purposes of QC testing only. The original binder $G^* \sin \delta$ shall be performed at grade temperature. Grade temperature for High Polymer binder is 70°C.
 (c) The original binder phase angle (AASHTO T 315-19) shall be performed at grade temperature.
 (d) AASHTO T 313-19 and AASHTO T 350-19 will be performed at a 2-mm gap for PG 76-22 (ARB).
 (e) All binders with a high temperature designation >67 will be tested at 67°C. PG 78-22 (PMA) and PG 76-22 (ARB) shall pass a "V" grade per AASHTO M 1332-19.
 (f) A maximum Jnr diff = 75% does not apply for any Jnr value ≤ 0.50 kPa-I.
 (g) For all ~~PG grades of~~ PG 67 or higher, perform the PAV residue testing at 20.5°C with a maximum of 5,000 kPa.
 (h) For all ~~PG grades of~~ PG 78 or higher, perform the PAV residue testing at 20.5°C with a maximum of 6,000 kPa.



SS9160203 BITUMINOUS MATERIALS

Table 916-1, needed clarification.

Section 929

The changes are proposed by Tim Counts from the State Materials Office to update and clarify language regarding slag, calcined clay, ground glass, and metakaolin in the Standard Specification.

SUPPLEMENTARY CEMENTITIOUS MATERIALS (REV 10 29 20)

ARTICLE 929-1 is expanded by the following:

929-1 General.

Supplementary cementitious materials (SCMs) shall conform to the requirements of this Section. SCMs shall be used in concrete mix designs in accordance with Section 346.

Fly ash, slag cement, and ultra-fine fly ash shall not be used in conjunction with Type IP or Type IS cements.

Repulable bags may be accepted by the Engineer, provided a successful demonstration by the producer has indicated complete degradation of the repulable bags during the mixing operation and before the mix is discharged.

The Engineer may require additional testing beyond the requirements of this Section prior to the acceptance of any SCM sources.

929-1.1 Definitions.



SS9290100 SUPPLEMENTARY CEMENTITIOUS MATERIALS

Requirements for slag have been updated. Submittal requirements for calcined clay and ground glass have been clarified. Metakaolin submittal requirements have been relaxed.

Section 948

The changes are proposed by Jason Russell from the State Construction Office to clarify and/or delete references to the term “liner” in all repair methods in the Standard Specification.

OPTIONAL DRAINAGE PRODUCTS AND LINER REPAIR SYSTEMS (REV 11-12-20)

SECTION 948 is deleted and the following substituted:

SECTION 948 OPTIONAL DRAINAGE PRODUCTS AND LINER REPAIR SYSTEMS

948.1 Polyvinyl Chloride (PVC) Pipe, or Acrylonitrile-Butadiene-Styrene (ABS) Plastics Pipe.

948.1.1 For Bridge Drains: PVC pipe shall conform to the requirements of ASTM D1785, for Type I, Grade I, Schedule 80 PVC pipe with a minimum polymer cell classification of 12454 per ASTM D1784 and a minimum of 1.5% by weight of titanium dioxide for UV protection.

948.1.2 Pressure Pipe: Pressure pipe for direct burial under pavement shall conform to the requirements of ASTM D1785, for Type I, Grade I, Schedule 40, for sizes up to and



SS9480000 OPTIONAL DRAINAGE PRODUCTS AND LINER REPAIR SYSTEMS

The word ‘liner’ was removed from the specification to clarify that all repairs do not include liner systems.

Section 955

The changes are proposed by Tim McCullough from the State Materials Office to implement the requirements for treatment of timber, verify certifications when arrived on job-site or in the Department's database.

TIMBER TREATMENT (INCLUDING TREATING MATERIALS) (REV 10-20-20)

SECTION 955 is deleted and the following substituted:

955-1 General.

The work specified in this Section is the treating of structural timber, timber piling and timber posts, bracing and railing. The method of treatment and determination of assay results for all such timber materials shall be in accordance with ~~AASHTO M 113~~ or American Wood Protection Association (AWPA) Use Category System (UCS) - U1, with the exceptions and additions as specified herein. Use approved producers listed on the Department's Production Facility Listing for timber components located in <https://mac.flot.gov/sitereports>. Producers seeking inclusion shall meet the requirements of Section 105.

955-2 Preservative.

955-2.1 Salt or Brackish Water Use: The treating of Southern Yellow Pine (SYP) lumber or timber for use in salt or brackish water environments shall be done with Chlorinated Copper-Arsenate (CCA) in accordance with AWPA U1. Guardrail Post, Fence Post, Bracing and Railing on Pedestrian Bridges, Buildings, and Rest Areas in Above Ground, Ground Contact, Fresh Water Immersion Applications (Pedestrian Use): Provide guardrail post, fence post, bracing and railing in accordance with Table 955-1. Approved producers should provide a certification showing the treatment and assay results with every shipment.



SS9550000 TIMBER TREATMENT (INCLUDING TREATING MATERIALS)

The existing language relied on several offices having the most up to date timber specifications to be able to verify certifications when they arrived on a job-site, or when verifying certifications in the Department's database (MAC). The proposed language allows anybody within the Department to easily describe the FDOT requirements to a customer, a potential manufacturer and avoid any project related disputes related to Specifications.

The requirements for the treatment of timber have been written into a table format, replacing a reference to an external document. The titles of several sections were rewritten to target the selection of timber treatment based on the design and application. The document has already been reviewed by the Treated Wood Council.

Section 965

The changes are proposed by Jason Russell from the State Construction Office to include paint requirements for aluminum light poles, pedestals, and posts.

GENERAL PROVISIONS FOR ALUMINUM ITEMS (INCLUDING WELDING) (REV 11-10-20)

SECTION 965 is expanded by the following new Article:

965-5 Paint for Poles, Pedestals, and Posts

Paint systems used on aluminum poles, pedestals, and posts shall meet the color requirements as specified in the Contract Documents. All paint systems shall possess physical properties and handling characteristics that are compatible with the application requirements of Section 646. Materials shall be specifically intended for use over aluminum. Paint systems shall exhibit no loss of adhesion or total color difference (ΔE^*_{ab}) greater than 8.0 units for five years after final acceptance as specified in 5-11. An aluminum pole, pedestal, post, or sign panel that exhibits a cumulative surface area of delamination in excess of 50 square inches will constitute an adhesion failure. Delamination shall be defined as any area of exposed metal surface subsequent to hand tool cleaning. A ΔE^*_{ab} value exceeding 8.0 units per the International Commission on Illumination L*a*b* 1976 (CIE LAB) space and color difference formula, measured in accordance with ASTM D2244, will constitute a color retention failure.

The Department will measure and enter in the Department's database the CIE LAB color chromaticity coordinates for the color of the top coat of sample compons provided as required by 646-2.7 using a BYK-Gardner Handicolor colorimeter using D65 illuminant and 2-degree geometry settings. The Department-measured CIE LAB chromaticity coordinates shall define the initial color and will be used for resolution of color retention failures and the resolution of color retention disputes.



SS9650500 GENERAL PROVISIONS FOR ALUMINUM ITEAMS (INCLUDING WELDING)

Changes needed to include paint requirements for aluminum light poles, pedestals, and posts. Add language to include paint requirements for aluminum light poles, pedestals, and posts.

Section 967

The changes are proposed by Tim McCullough from the State Materials Office to eliminate confusion on the order of delivery and ability to verify material prior to installation.

COMPONENTS FOR GUARDRAIL (REV 13-14 22-210)

SECTION 967 is deleted and the following substituted:

967-1 ~~General Description.~~

This section covers the material and fabrication requirements for guardrail components. ~~All timber and steel components supplied under this Specification shall be from producers currently on the Department's Production Facility Listing. Producers seeking inclusion on the Department's Production Facility Listing must meet the requirements of Section 105.~~

967-2 ~~Timber Posts and Timber Offset Blocks Materials.~~

~~All timber and steel components supplied under this Specification shall be from producers currently on the Department's Production Facility Listing. Producers seeking inclusion on the Department's Production Facility Listing must meet the requirements of Section 105.~~

~~967-2.1 Timber: Timber products must have a minimum stress grade of 1200 psi and meet the material requirements of Section 954. Timber is to be dressed on four sides (S4S) and treated in accordance with the post requirements in Section 955. Timber posts and offset blocks shall be shaped and drilled prior to wood treatment. Posts shall not vary more than 1 inch and offset blocks shall not vary more than 0.25 inches from the specified dimensions shown in the Standard Plans.~~



SS9670000 COMPONENTS FOR GUARDRAIL

The language in the specifications relied on the contractor and manufacturer to deliver material that met the AASHTO and ASTM Specifications. However, upon the launch of the MAC system, it was clear not all material incorporated into the job met AASHTO requirements or could be verified to be from an approved manufacturer. The changes attempt to eliminate confusion on what to order, deliver and ability to verify material prior to installation.

Put the material requirements for guardrail into a table format for easy and quick reference by the manufacturer and Material reviewers. Moved APL items to the front of the specification so they are not hidden behind table. Clarified that all guardrail needs to be stamped, meet AASHTO and Buy America requirements.

Section 971

This change was proposed by Kenneth Bergum from the State Materials Office to update the AASHTO and ASTM requirements.

Property	Test Method	Specification
Roundness*	AASHTO PP R 498	Min. 70% by weight
Roundness**	AASHTO PP R 498	Min. 80% by weight
Refractive Index**	Becke Line Method (25±.5C)	1.3 minimum
Refractive Index**	Becke Line Method (25±.5C)	1.9 minimum

*Type 1, 4 and 5 beads
**High Index beads

Sieve Size	Percent by Mass Passing Designated Sieve (AASHTO PP R 498)				
	Grading Designation				
	Type 1 (AASHTO)	Type 3 (FP 96)	Type 4 (FP 96)	Type 5 (FP 96)	High Index
No. 8	100	100	100	100	100
No. 10	100	100	100	95-100	100
No. 12	100	100	95-100	80-95	100
No. 14	100	95-100	80-95	10-40	100
No. 16	100	80-95	10-40	0-5	100
No. 18	100	10-40	0-5	0-2	100
No. 20	95-100	0-5	0-2	0	95-100
No. 25	100	0-2	0	0	100
No. 30	75-95	0	0	0	55-85
No. 40	100	0	0	0	15-45



SS9710202 PAVEMENT MARKING MATERIALS

Both external references have been updated. AASHTO PP 74 has been withdrawn and replaced with AASHTO R 98. ASTM D969 has been replaced with ASTM D868.

In the tables in 971-2.2 replace AASHTO PP 74 with AASHTO R 98. In the tables in 971-3.3 and 971-4.3 replace ASTM D969 with ASTM D868.

Section 975

The changes are proposed by Jason Russell from the State Construction Office to include painting requirements to aluminum light poles, pedestals, and posts.

STRUCTURAL COATING MATERIALS (REV 12-8-20)

ARTICLE 975-4 is deleted and the following substituted:

975-4 Paint for ~~Galvanized Steel~~ Strain Poles, Mast Arms, ~~and~~ Monotube Assemblies, ~~Conventional Light Pole Assemblies, and Aluminum Poles, Pedestals, and Posts.~~

Paint systems ~~used on strain poles, mast arms, and monotube assemblies and conventional light pole assemblies~~ shall meet the color requirements as specified in the Contract Documents. All paint systems shall possess physical properties and handling characteristics that are compatible with the application requirements of Section 649 ~~for galvanized steel and Section 646 and 715 for aluminum~~. Materials shall be specifically intended for use over galvanized steel ~~or aluminum, as appropriate~~. Paint systems shall exhibit no loss of adhesion or total color difference (ΔE^*_{ab}) greater than 8.0 units for five years after final acceptance as specified in 5-11 ~~of aluminum light poles, mast arms, and monotube assemblies that exhibit a cumulative surface area of delamination in excess of 100 square inches will constitute an adhesion failure. Delamination shall be defined as any area of exposed metal surface subsequent to hand tool cleaning in accordance with SSPC-SP2. A ΔE^*_{ab} value exceeding 8.0 units per the International Commission on Illumination L*a*b* 1976 (CIELAB) space and color difference formula, measured in accordance with ASTM D2244, will constitute a color retention failure.~~

The Department will measure and enter in the Department's database the CIELAB color chromaticity coordinates for the color of the top coat of sample coupons provided as required by 649-4.3 using a BYK-Gardner Handicolor colorimeter using D65 illuminant and 2-degree geometry settings. The Department-measured CIELAB chromaticity coordinates shall define the initial color and will be used for resolution of color retention failures and the resolution of color retention disputes.



SS9750400 STRUCTURAL COATING MATERIAL

Aluminum light poles, pedestals and posts are being added to the paint subarticle. Language to include the painting requirement to aluminum light poles, pedestals, and posts.

Section 976

The changes are proposed by Sarah Smith from the Program Management Office to move all material requirements to Division III from Section 523 and 527. Additional product types for newly constructed and existing surfaces have included in the specification.

~~SECTION 976~~ ~~SURFACE TREATMENTS~~

~~976-1-Description~~

~~→ This section specifies the material requirements for detectable warnings and patterned pavement and shall be one of the products included in the APL as specified in Section 6.~~

~~976-2-Detectable Warnings~~

~~→ **976-2.1-Performance Requirements:** Provide detectable warnings that meet the following minimum material property requirements when tested in accordance with this Section and the following Table 976-1.~~



SS9760000 SURFACE TREATMENTS

New Spec Language.

Section will cover material requirement for detectable warnings and patterned pavement.

Section 985

The changes are proposed by Jason Russell from the State Construction Office to allow natural fibers for erosion control applications to facilitate turf growth.

*** GEOSYNTHETIC MATERIALS***

(REV 10-5-20)*

SUBARTICLE 985-4.1.2 is deleted and the following substituted:

→ → **985-4.1.2 Erosion Control:** ~~Materials may contain natural fibers added to acceptable plastic erosion mats for the sole purpose of facilitating turf growth. However, materials used for erosion control applications must be tested without any natural fiber components~~ in accordance with and meet the physical requirements in 985-2.2, Table 985-4.

Type	Description
E-1	Staked Silt Fence
E-2	Wind Screen
E-3	Plastic Erosion Mat (Turf Reinforcement Mat) (Type 1)
E-4	Plastic Erosion Mat (Turf Reinforcement Mat) (Type 2)
E-5	Plastic Erosion Mat (Turf Reinforcement Mat) (Type 3)



SS9850401 GEOSYNTHETIC MATERIALS

The current language precludes the use of natural fibers in all geosynthetic material. Language added to allow natural fibers for some erosion control applications to facilitate turf growth.

Language added include the use of natural fibers to erosion control mats for turf growth.

Section 990

The changes are proposed by Olivia Townsend from the State Construction Office to modify the language in support of the changes made to the 102 series of the Standard Plans for the FY21-22 and the FDM.

TEMPORARY TRAFFIC CONTROL DEVICE MATERIALS (REV 11-12-20)

SUBARTICLE 990-2.1.1 is deleted and the following substituted:

990-2.1.1 Bands for Temporary Tubular Markers, Vertical Panels, Barricades, ~~Vehicular Longitudinal Channelizing Devices~~ and other Devices: Bands for temporary tubular markers, vertical panels, barricades, ~~vehicular longitudinal channelizing devices~~ and other devices shall meet the requirements of ASTM D4956 for Type III or higher retroreflective sheeting materials identified in Section 994.

SUBARTICLE 990-13.2 is deleted and the following substituted:

990-13.2 Product Application: Manufacturers seeking inclusion of channelizing devices on the APL shall submit the following:

1. For Cones, Drums, and Temporary Tubular Markers:
 - a. Photographs
 - b. Drawings of sufficient detail to distinguish between similar devices
 - c. Manufacturer self-certification of MASH compliant
2. For Barricades and Vertical Panels:
 - a. Installation instructions
 - b. Photographs
 - c. Drawings (may be included in installation instructions) of sufficient detail to distinguish between similar devices
 - d. Any field assembly details and technical information necessary for proper application and installation
 - e. Crash testing reports demonstrating the device meets MASH TL-3
 - f. All relevant FHWA Eligibility Letters



SS9900201 TEMPORARY TRAFFIC CONTROL DEVICE MATERIALS

The language needs to be changed in support of changes made to the 102 Series of the Standard Plans for FY21-22 and the FDM.

Deleted references to vehicular longitudinal channelizing devices. Updated references to "tubular markers" to "temporary tubular markers".

Section 990

The changes are proposed by Derek Vollmer from the Traffic Engineering and Operations Office to modify conflicts in the language and clarify legibility requirements.

TEMPORARY TRAFFIC CONTROL DEVICE MATERIALS (REV 11-12-20)

ARTICLE 990-3.3 is deleted and the following substituted:

990-3.3 Portable Changeable Message Sign:

990-3.3.1 Message Matrix:

1. Message matrix panel shall be a maximum height of 7 feet by a maximum width of ~~10 feet~~ 146 inches.

2. The matrix must be capable of displaying three lines of 8 characters using an 18 inch or 12 inch font that meets the height to width ratio and character spacing requirements in the MUTCD, Section 21.01, paragraphs 15, 16, and 16. PCMS with a minimum font size of 18 inches shall be used on any speed facility. PCMS with a minimum font size of 12 inches may be used on facilities with speed limits of 45 mph or less.

3. The matrix must display characters that meet or exceed the numeral and letter sizes prescribed in the MUTCD and SHS (Standard Highway Signs) companion document. Fonts and graphics must mimic the characteristics of fonts and graphics defined in NEMA TS4, the MUTCD, and SHS.

4. Similar components shall be interchangeable.

990-3.3.2 Operation and Performance:

1. The message shall be displayed in upper case except when lower case is project specific and is allowed by the MUTCD.

2. The message matrix panel shall be visible from one-half mile and legible from a distance of 146 feet under both day and night conditions.

3. The 18 inch letter height message shall be legible from 650 feet for nighttime conditions and 800 feet for normal daylight conditions.



SS9900303 TEMPORARY TRAFFIC CONTROL DEVICE MATERIALS

Conflict in 990-3.3.11: maximum width of 10 feet versus displaying 3 lines of 8 characters using an 18 inch the height to width ratio and character spacing in the MUTCD. 8 characters and 7 spaces computes to a width of 132.3 inches. In 990-3.3.1, increase the sign width to 146 inches. In 990-3.3.2, clarify legibility requirements: 18-inch letter legible from 650 feet night and 800 feet daytime; 12-inch letter legible from 650 feet night and day; automatically adjust light source to maintain legibility.

Section 991

The changes are proposed by Gevin McDaniel from the Roadway Design Office to add appropriate material requirements for channelizing devices to the Standard Specification.

SECTION 991 CHANNELIZING DEVICE MATERIALS

991-1 Durable Tubular Markers

→ 991-1.1 General

→ → This subarticle describes the material requirements for tubular markers installed in accordance with Section 704. All Durable Tubular Marker products shall be listed on the Department's Approved Products List (APL).

→ 991-1.2 Dimensions

→ → The post shall have a minimum diameter of 3 inches. The base of the tubular marker shall have a maximum dimension in any direction of 8 inches. The height of the tubular marker above the pavement surface shall be 36 inches.

→ 991-1.3 Color

→ → Tubular Marker color must be uniform and integral throughout entire height of the post. The base may be black in color.

991-1.3.1 White

→ → → The yellowness index shall not exceed 12, tested in accordance with ASTM E313. The daytime 45 degrees, 0 degrees luminance factor, Cap²Y, shall be a minimum of 70, tested in accordance with ASTM E1347 or ASTM E1164.

→ 991-1.3.2 Yellow

→ → → The daytime 45 degrees, 0 degrees luminance factor, Cap²Y, shall be a minimum of 60, tested in accordance with ASTM E1347 or ASTM E1164.



SS9910000 CHANNELIZING DEVICE MATERIALS

This Specification change is in line with moving the needle on the vital few by providing a more visible and durable product as a channelizing device to improve the safety of bicyclists and pedestrians on arterials and collectors. Until now, this product has been used on Managed Lane to preclude lane changing. The durability, visibility and larger diameter of these products are desired. The increased durability will also benefit the department and improved safety by not having to be replaced as often. The reduction in MOT operations for replacement drastically improved safety on our roadways.

These products have a slightly higher initial cost over “high performance delineators”; however, the long-term savings in maintenance greatly outweighs the increased initial cost. As stated above, the fewer MOT operations improve safety, mobility, and further reduce costs. There is no change to consultant fees.

Section 992

The changes are proposed by Richard Stepp from the State Roadway Design Office to update table 992-1 to the Roadway Standard.

Setting	Requirement
Roadway Standard	IES RP-8-18
R-Table	R3 (Q0=0.07)
Roadway Layout	Two Rows Opposite, With Median. 2R OPP w/M
Roadway Width	40 feet
Median Width	22 feet
Number of Lanes in Direction of Travel	3
Driver's Side of Roadway	Right
Calculation Area	Bottom
Mounting Height	As per manufacturer's recommendation
Setback	12 feet
Tilt	0°
Optimization Criteria	Avg. Illuminance = 1.5 fc Avg./Min. Ratio = 4 Max./Min. Ratio = 10 Lv Max./L Avg. Ratio = 0.3
Arm Length	Pole top fixtures - as provided by the IES file Arm mounted fixtures - 12 feet



SS9920109 HIGHWAY LIGHTING MATERIALS

992-1.9.3: Updated requirement for "Control Panel Main Disconnect" to allow for higher "Amp Interrupting Current" and increase contractor's flexibility for product use;
 Table 992-1: Updated lighting analysis requirement to use IES RP-8-18 criteria in order to accommodate latest AGi32 software versions. It is determined that this latest version is acceptable for use.

992-1.9.3: Changed AIC requirement to 35,000 "Minimum" and less than or equal to Service Main AIC.;

Table 992-1: Changed "Roadway Standard" to "IES RP-8-18"

Section 993

The changes are proposed by Gevin McDaniel from the Roadway Design Office to remove High Performance Delineators and High Visibility Median Separator Delineators from the Specification and add new language to the Standard Specification.

993-1 Object Markers.
 993-1.1 General: Object markers shall meet the general requirements outlined in the Manual of Uniform Traffic Control Devices (MUTCD). For uniformity, all Type 1 markers shall be either OMI-1 or OMI-3 style markers, all Type 2 markers shall be either OMI-1V or OMI-2V style markers, and all Type 4 road markers shall be OMI-1 style markers, and all end-of-road markers shall be either OMI-1 or OMI-2 style markers.
 993-1.2 Retroreflectors: The reflectors shall be of acrylic plastic and shall be a minimum of 3 inches in diameter. They shall be mounted in a heavy duty housing with a back plate.
 The reflector shall consist of a clear and transparent plastic lens, which shall be set in a rubber or neoprene gasket, and a plastic back of the same material, fixed to the lens under heat and pressure around the entire perimeter, so that no air is left to form a homogeneous unit, permanently sealed against dust, water, and some vapors.
 The lens shall consist of a smooth front surface, free from projections or indentations (other than for identification or orientation) and a rear surface having a prismatic configuration such that it will effect total internal reflection of light.
 The acrylic plastic shall be of a type meeting the requirements of Federal Specification 1-2180, Type 1, Class 3, and, in order that the Department can readily check the stability of the raw material stock, the manufacturer shall stipulate the raw material and the particular working compound to be furnished.
 993-1.2.1 Durability Tests for Retroreflectors: Good Test: The following test will be used to determine if a reflector is adequately sealed against dust and water.
 Submerge 20 samples in water bath at room temperature. Subject the submerged samples to a vacuum of 10 inches-gauge for five minutes. Remove atmospheric pressure and locate samples vertically for five minutes, then remove and examine the samples for water uptake. Failure of more than two of the 20 samples tested shall be cause for rejection of the LOT.
 993-1.2.2 Optical Requirements: The rated specific intensity of object markers shall be at least equal to the minimum values shown below. Failure to meet the required specific intensity shall constitute failure of the reflector being tested.



SS9930100 OBJECT MARKERS AND DELINEATORS

This Specification change is in line with moving the needle on the vital few by providing a more visible and durable product as a channelizing device to improve the safety of bicyclists and pedestrians on arterials and collectors. Until now, this product has been used on Managed Lane to preclude lane changing. The durability, visibility and larger diameter of these products are desired. The increased durability will also benefit the department and improved safety by not having to be replaced as often. The reduction in MOT operations for replacement drastically improved safety on our roadways.

These products have a slightly higher initial cost over “high performance delineators”; however, the long-term savings in maintenance greatly outweighs the increased initial cost. As stated above, the fewer MOT operations improve safety, mobility, and further reduce costs. There is no change to consultant fees.

Section 994

The changes are proposed by Awilda Merced-Fernandez from the State Materials Office to include digital printing technology as an option to fabricate signs. To reinstate the use of Fluorescent Yellow-Green and Fluorescent Yellow Type XI sheeting. To eliminate non applicable requirements and other minor editorial changes.

RETROREFLECTIVE AND NONREFLECTIVE SHEETING AND SIGN PANEL FABRICATION (REV 12-4-20)

SUBARTICLE 994-2.1 is deleted and the following substituted:

994-2 Retroreflective and Nonreflective Sheeting Systems.

994-2.1 Materials: Retroreflective sheeting material shall be classified in accordance with and meet the requirements of ASTM D4956. Overlay materials include colored and colorless transparent overlays and vinyl. Inks include transparent and opaque silkscreen inks as well as inkjet inks used in digital print systems.



SS9940200 RETROREFLECTIVE AND NONREFLECTIVE SHEETING AND SIGN PANEL FABRICATION

To update specification to include digital printing technology as an option to fabricate signs. To reinstate the use of Fluorescent Yellow-Green and Fluorescent Yellow Type XI sheeting. To eliminate non applicable requirements and other minor editorial changes.

Updated section 994-2 to include digital printing as an alternative method of fabrication of highway signing. Reinstated Fluorescent Yellow-Green and Fluorescent Yellow Type XI sheeting in the specification for inclusion on the APL. Removed unnecessary language.

Section 996

The changes are proposed by Derek Vollmer from the Traffic Engineering and Operations Office to move the material articles and subarticle in Section 620, 635, and 641 from Division II to Division III.

996-4 Grounding and Lightning Protection.

996-4.1 General: Surge Protective Devices for traffic control devices, including intelligent transportation system (ITS), shall be listed on the Department's Approved Product List (APL). Manufacturers seeking evaluation of their product shall submit an application in accordance with Section 6.

996-4.2 Surge Protective Device.

996-4.2.1 Description: Surge Protective Devices (SPDs) protect electronics from lightning, transient voltage surges, and induced current.

996-4.2.2 SPD for 120 Volt or 120/240 Volt Power: The SPD shall include L-N, I-G, and N-G protection and have a maximum surge current rating of 50 kA per phase or greater. The SPD shall meet the requirements of UL 1449, Third Edition and be listed by a NRTL.

The SPD shall have a visual indication system that monitors the weakest link in each mode and shows normal operation or failure status and also provides one set of normally open (NO)/normally closed (NC) Form C contacts for remote alarm monitoring. The enclosure for a SPD shall have a NEMA 4 rating.

996-4.2.3 SPD at Point of Use: The SPD shall comply with the minimum functional requirements shown in Table 996-3. The units shall be rated at 15 or 20 amps load and are configured with receptacles.

The units shall have internal fuse protection and provide common mode (L-N-G) protection.



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The materials article in Subarticle 620-2.7 has been moved 996-4 in Division III. The materials in Subarticle 635-2.2 has been moved to 996-5 in Division III. Materials in Subarticle 641-2.2 moved to 996-6.2.

The materials language has been moved from Subarticle 620-2.7 in Div II to Article 996-4 in Div III. The materials language has been moved from Subarticle 635-2.2 in Div II to Article 996-5 Div III, and 641-2.2 to 996-6.2