Section II
Technical Specifications

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Chapter 1
Introduction

A. General

The Prince George's County Department of Public Works and Transportation (the Department) has adopted Part III, Technical Requirements of the Maryland Department of Transportation (MDOT) State Highway Administration's *Standard Specifications for Construction and Materials* (MSHA *Standard Specifications*), dated January 2001, as the Department's *Specifications and Standards for Roadways and Bridges* (*Specifications and Standards*).

The Department also hereby incorporates by reference any future supplements, revisions, or other amendments to Part III of the MSHA *Standard Specifications* issued after January 2001. Section II of the Department's *Specifications and Standards* includes minor modifications to the MSHA *Standard Specifications* by deleting, adding, or revising certain provisions to make them applicable for use within Prince George's County.

With the exception of Terms and Conditions (TC) 1.02, "Definitions," Parts I and II of the MSHA *Standard Specifications*, dated January 2001, are expressly not incorporated by reference, and are not applicable to permits or contracts issued by the Department unless otherwise specifically indicated within the permit or Contract Documents issued by the Department.

TC-1.02, "Definitions," of the MSHA *Standard Specifications* is incorporated by reference since the defined terms are used throughout Part III of the MSHA *Standard Specifications*.

B. Directions for Use of Section II

1. Part III of the MSHA *Standard Specifications* serves as the basis for the Department's specifications for construction and materials. Section II of this document presents revisions and amendments to the Maryland State Highway Administration (MSHA) document to serve the specific requirements of Prince George's County, Maryland. The following pages are organized by reference to the system of numbering used in Part III of the MSHA *Standard Specifications*. Amendments to the State text are indicated by ***boldface italics*** for additions, **[**~~bracketed strikethrough~~**]** for deletions, and *regular italics* for instructions and book titles. The Table of Contents for the MSHA *Standard Specifications* is presented immediately following this chapter in order to assist the user in referencing specifications and identifying where modifications to the MSHA *Standard Specifications* have been made.

2. In Categories 100 (Preliminary) through 800 (Traffic), references to methods of measurement and the basis of payment, as described in Part III of the MSHA *Standard Specifications,* are applicable to County-administered construction contracts, but are not applicable to the Department's regulation of work performed by permit. In these categories, all subsections with numbers ending in .04 and titled "Measurement and Payment" are hereby deleted for all work covered by a permit issued by the Department.

C. Maryland Department of Transportation/State Highway Administration, *Standard Specifications for Construction and Materials* (2001 Edition), Table of Contents

Pages 2–7 replicate the **Table of Contents** of the MSHA *Standard Specifications for Construction and Materials* (2001 Edition), for use in correlating category numbers (which are used to organize Section II of these *Specifications and Standards*) with topics of interest to the reader.

MSHA STANDARD SPECIFICATIONS PART I
GENERAL PROVISIONS (GP)

The Sections below, comprising **Part I** of the Maryland State Highway Administration's *Standard Specifications for Construction and Materials* (MSHA *Standard Specifications*), **DO NOT APPLY** to the Department's *Specifications and Standards for Roadways and Bridges (Specifications and Standards)* unless otherwise specified in this document or in individual contracts.

MSHA PART II
TERMS AND CONDITIONS (TC)

The Sections below (except for Section TC-1.02, "Definitions"), comprising **Part II** of the Maryland State Highway Administration's *Standard Specifications for Construction and Materials (*MSHA *Standard Specifications)*, **DO NOT APPLY** to the Department's *Specifications and Standards for Roadways and Bridges* unless otherwise specified in this document or in individual contracts.

On this page, **boldface type** indicates an MSHA provision affected by a Department amendment.

MSHA STANDARD SPECIFICATIONS PART III
TECHNICAL REQUIREMENTS

CATEGORY 100—PRELIMINARY

CATEGORY 200—GRADING

CATEGORY 300—DRAINAGE

On this page, **boldface type** indicates an MSHA provision affected by a Department amendment.

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CATEGORY 700—LANDSCAPING

CATEGORY 800—TRAFFIC

On this page, **boldface type** indicates an MSHA provision affected by a Department amendment.

CATEGORY 900—MATERIALS

Chapter 2
Amendments, Additions, and/or Deletions to the MSHA *Standard Specifications*

A. General Provisions

Part I of the MSHA *Standard Specifications*, titled "General Provisions," has not been adopted by the Department and is not incorporated into these Technical Specifications.

B. Terms and Conditions

Part II of the MSHA *Standard Specifications*, titled "Terms and Conditions," except for TC-1.02, "Definitions," has not been adopted by the Department and is not incorporated into these Technical Specifications.

C. Technical Requirements—Part III of the MSHA Standard Specifications (2001)

MSHA Spec. No.	Prince George's County Department of Public Works and Transportation Amendment
101 Clearing and Grubbing **101.03.02 Vegetation**	Subsection 101.03.02, Vegetation, is amended to read as follows: ***The plans shall designate, clearly identify, and accurately locate any trees, shrubbery, and plants which are not to be removed, and the Permittee/Contractor shall protect them from damage.*** [~~The Engineer will designate and mark any trees, shrubbery and plants that are to remain in place, and the Contractor shall protect them from any damage as specified in GP-7.11.~~] Branches of trees overhanging ***the proposed or existing travel lanes or shoulder areas of*** the roadway shall be cut and properly trimmed to maintain a ***vertical*** clearance [~~height~~] of 16.0 ft. All trimming shall be done ***by skilled workmen in accordance with the American National Standards Institute (ANSI) A300 standards*** under the supervision of a tree expert ***employed by the Contractor and*** licensed by the State of Maryland. [~~including trimming of trees by the Contractor for any other reason.~~] Trimming and repair of cuts and scars shall conform to Section 712.
102 Removal and Disposal of Existing Buildings **102.03 Construction**	Subsection 102.03, Construction, is amended to read as follows: ***In exceptional circumstances and only with the prior written approval of the Department,*** buildings and appurtenances designated for removal may be disposed of by burning if they are not located close to habitable dwellings and if ***burning is*** not prohibited by local or State laws, regulations, ordinances, or by the fire marshal ***and only at the discretion of the Department. Where authorized, the Contractor/Permittee shall acquire all necessary permits.***

MSHA Spec. No.	Prince George's County Department of Public Works and Transportation Amendment
201 Roadway Excavation **201.01.01 Classification**	Subsection 201.01.01, Classification, is amended to read as follows: CLASS 1—All excavation ***within the typical road cross-section, or excavation not shown within the typical cross-section,*** where the width of the bottom of the cut is 15 ft. or more***, and is parallel to the centerline of the roadway alignment***. CLASS 1-A—All excavation of unsuitable material below the lowest excavation limits established. CLASS 2—All excavation where the width of the bottom of the cut is less than 15 ft. ***and is perpendicular to the roadway alignment. Excavation for flumes, ditches, and stream and channel changes are included in this classification unless otherwise specified in the Contract Documents.*** (Underscoring added for emphasis.)
203 Borrow Excavation **203.01 Description**	Subsection 203.01, Description, is amended as follows: **203.01 DESCRIPTION.** This work shall consist of furnishing, excavating, hauling, and placing approved materials for embankments and backfills when sufficient quantities of suitable materials are not available from other excavations as specified in the Contract Documents. It shall include all work prescribed for backfills, embankments, subgrade, and earth shoulders, all necessary clearing and grubbing, the removal and disposal of overburden or other unsuitable spoil material and the trimming, shaping, dressing, draining, and reclamation of the pit or location from which borrow material is secured. Refer to MSHA Specification 201.03.02 before securing borrow. ***The Contractor must obtain a "Haul Road Permit for Mining, Excavation, and Fill Operations" from the Department for hauling material on County-maintained highways if the material is in excess of 1,000 cubic yards in volume.***
203.01.01 Contractor's Options	Subsection 203.01.01, Contractor's Options, shall apply to Capital Improvement Program construction contracts only. For the control of permit work in the County, Subsection 203.01.01 is replaced in whole to read as follows: ***The Contractor shall obtain, separately or as part of the road construction permit, all permits required by the County Code and applicable State and Federal laws and regulations to obtain, excavate, and transport excavated material for use as borrow on the permitted work, and to construct any required haul roads. In***

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	addition, the Contractor shall restore to their original state any roadways damaged by hauling borrow material.
203.03.02 Borrow Pit Material	Subsection 203.03.02, Borrow Pit Material, is amended to read as follows: ***After the necessary quantity of materials has been removed, the borrow pit shall be graded or restored and stabilized as required by the Prince George's County Code and applicable requirements of the Prince George's County Soil Conservation District.*** [~~The borrow pit shall conform to the Reclamation (Permit) Plan after the necessary quantity of materials has been removed. Steep slopes and sheer faces shall be avoided. All disturbed areas shall be seeded and mulched as specified in Section 705 at no additional cost to the Administration.~~] ***Shaping and seeding requirements*** [~~do not~~] ***apply to commercial borrow pits.***
203.04 Measurement and Payment	Subsection 203.04, Measurement and Payment, is replaced in whole to read as follows: ***Borrow excavation shall be measured and paid for, using the cross-section method, following placement and compaction of the material in place.***
204 Embankment and Subgrade **204.02 Materials**	Subsection 204.02, Materials, is amended to read as follows: Soils and soil aggregate mixtures used in the construction of embankments shall conform to [~~the common~~] ***AASHTO Classification A-1, A-2, A-3, or A-2-4*** borrow requirements in Section 916 unless otherwise specified in the Contract Documents. ***Geotextiles that have permittivity of 0.1 or less and are in conformance with MSHA Specification 913.04 shall be placed as a liner in liquid-conveying utility trenches constructed through roadway embankments greater than 3 ft. in height, to increase the embankment protection against fines washout due to leaks.***

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208 Subgrade Preparation **208.03.05 Subgrade Approval**	Subsection 208.03.05, Subgrade Approval, is amended to read as follows: No subsequent cover material shall be placed upon a frozen subgrade or any subgrade until it has been checked and approved by the Engineer. ***The approval expires if any subgrade layer is affected by weather, vehicular traffic, or prolonged exposure before coverage. In such cases, another approval shall be obtained from the Department's Engineer just before placement of a subsequent cover material.***
303 Pipe Culverts **303.03.04 Joints**	Subsection 303.03.04, Pipe Culverts, is amended to read as follows: 303.03.04, Joints. Pipe joints shall be sealed in a manner appropriate to the pipe material. Reinforced Concrete Pipe. Joints shall be sealed with rubber type gaskets (circular pipe) or resilient type material (elliptical pipe) conforming to M198. Mortar joints are prohibited. ***Jointing Material:*** ***Rubber gasket joints shall be used to seal all reinforced concrete pipe joints installed on all Capital Improvement Projects, and all Street and Onsite Permit-Related Storm Drain Construction Work within the County, and shall meet all minimum requirements of Section 02730 of the Prince George's County Department of Environmental Resources Stormwater Management Standards and Specifications, unless otherwise specified in the Contract Documents or by the Department's Engineer.***
306 Underdrains, Subgrade Drains, and Spring Control **306.03.04 Outlets**	Subsection 306.03.04, Outlets, is amended to read as follows: When outletted to a slope or ditch ***(outside the County-maintained roadway)***, the outlet pipe shall slope a minimum of 3 percent unless otherwise directed by the Engineer. Pipe used for outlets shall be plain, rigid polyethylene (PE), or plain, rigid polyvinyl chloride (PVC) as specified in Section 905***, unless otherwise directed by the Department's Engineer***. Flexible tube type PE or PVC pipe is prohibited. ***Geotextile covered / wrapped edge panel drains and PE or PVC perforated pipe are*** **[**~~is~~**]** prohibited for underdrain outlets. ***Mowers may damage geotextile material if it is not properly installed.*** A sloped concrete headwall with a removable rodent screen shall be constructed at the end of the outlet pipe in

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	conformance with the Contract Documents. A flexible delineator post shall be placed on the slope headwall unless otherwise directed by the Engineer.
306.03.08 Permanent Subgrade Drains	Subsection 306.03.08, Permanent Subgrade Drains, is amended to read as follows: Permanent subgrade drains shall be required when specified in the Contract Documents or as directed by the Engineer. Subgrade drains shall consist of trenches excavated through the shoulder and roadside grading from the edges of the road pavement to a side ditch, embankment slope, or other approved outlet and filled with aggregate. Locations, unless otherwise specified, shall be at low points and shall be spaced at 25 ft. intervals for a distance of 125 ft. on each side of the low point, then at intervals of 100 ft. to within 125 ft. of the high point. Before placing the road pavement and before completion of the shoulder paving or final roadside grading areas, trenches shall be cut and shaped 24 in. wide, backfilled to underside of shoulder material and to the underside of specified topsoil thickness in the roadside grading area using size No. 57 aggregate. The portion of the trench within the roadside grading area shall be completely wrapped in geotextile. The bottom of the trench at the end adjacent to the road pavement shall be at least 2 in. below the subgrade unless otherwise directed by the Engineer. ***Sump pump drainage outfall systems, springs, surface seeps, and other ground water having objectionable effects shall be capped with porous gravel and/or sand with interlaced tile drains or perforated pipes connecting into a piped outfall to a public storm drainage system or continuously flowing natural water course.***
308 Erosion and Sediment Control **308.03.05 Preconstruction Conference**	The MSHA provisions of this subsection shall apply to Capital Improvement Program construction contracts only. For the control of permit work in the County, Subsection 308.03.05 is amended to read as follows: ***Prior to issuance of a Road Construction Permit or Entrance Permit, or the disturbance of any ground within the permit area, the Permittee shall obtain the approval of the Prince George's County Soil Conservation District for all areas of surface disturbance or earthwork within the permit area, and shall strictly comply with all provisions of the approved sediment control plans and appurtenant standards and regulations throughout the duration of the permit. In the event that***

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	additional or corrective sediment, erosion and pollution control measures are required due to the Permittee's negligence, insufficiency of effort, or an error in the approved sediment control plans, the Department's Engineer may order remedial work to be performed immediately, and may also require that a revised sediment control plan approval be obtained from the Prince George's County Soil Conservation District before any further earthwork in the contributing or affected area may proceed. [~~At the Preconstruction Conference, the Contractor shall present a general overview of how erosion and sediment control measures will be implemented on the project.~~]
309 Concrete Ditches	*In Section 309, Concrete Ditches, where the material specifications and construction requirements contained within the MSHA* Standard Specifications *are also covered by the* General Conditions and Standard Specifications *as published by the Prince George's County Department of Environmental Resources (DER), the DER* Standard Specifications *shall govern. In addition to, but not in substitution for, the DER* General Conditions and Standard Specifications*, specific requirements of Section 309 that are not in conflict with the DER* Standard Specifications *shall also apply*.
309.03.04 Joints	Subsection 309.03.04, Joints, is amended to read as follows: Maximum ***contraction*** joint spacing shall be ***10*** **[**~~15~~**]** ft. The joints shall be either bulkhead or weakened plane construction joints. Weakened plane joints shall be either tooled or sawed to a minimum depth of 3/4 in. Expansion joints shall be spaced a maximum of 90 ft. and sealed.
310 Concrete Slope and Channel Protection	*In Section 310, Concrete Slope and Channel Protection, where the material specifications and construction requirements contained within the MSHA* Standard Specifications *are also covered by the* General Conditions and Standard Specifications *as published by the Prince George's County Department of Environmental Resources (DER), the DER* Standard Specifications *shall govern. In addition to, but not in substitution for, the DER* General Conditions and Standard Specifications*, specific requirements of Section 310 that are not in conflict with the DER* Standard Specifications *shall also apply*.
310.02 Materials	Subsection 310.02, Materials, is amended to read as follows: Crusher Run Aggregate CR-6 901.01 No. 57 Aggregate 901.01 Curing Materials 902.07 Form Release Compound 902.08 ***Portland Cement Concrete*** **[**~~Concrete Mix No. 2~~**]** 902.10

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	Welded Steel Wire Fabric 908.05 Joint Sealer ***and Crack Filler*** 911.01 Preformed Joint Fillers 911.02 Roofing Paper 911.07 Borrow 916 ***The requirements for concrete for slope and channel protection shall be as required by DER.***
311 Riprap Ditches	*In Section 311, Riprap Ditches, where the material specifications and construction requirements contained within the MSHA* Standard Specifications *are also covered by the* General Conditions and Standard Specifications *as published by the Prince George's County Department of Environmental Resources (DER), the DER* Standard Specifications *shall govern. In addition to, but not in substitution for, the DER* General Conditions and Standard Specifications*, specific requirements of Section 311 that are not in conflict with the DER* Standard Specifications *shall also apply.*
312 Riprap Slope and Channel Protection	*In Section 312, Riprap Slope and Channel Protection, where the material specifications and construction requirements contained within the MSHA* Standard Specifications *are also covered by the* General Conditions and Standard Specifications *as published by the Prince George's County Department of Environmental Resources (DER), the DER* Standard Specifications *shall govern. In addition to, but not in substitution for, the DER* General Conditions and Standard Specifications*, specific requirements of Section 312 that are not in conflict with the DER* Standard Specifications *shall also apply.*
313 Gabions	*In Section 313, Gabions, where the material specifications and construction requirements contained within the MSHA* Standard Specifications *are also covered by the* General Conditions and Standard Specifications *as published by the Prince George's County Department of Environmental Resources (DER), the DER* Standard Specifications *shall govern. In addition to, but not in substitution for, the DER* General Conditions and Standard Specifications*, specific requirements of Section 313 that are not in conflict with the DER* Standard Specifications *shall also apply.*

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401 Maintaining Existing Bridge Deck During Life of Contract **401.03 Construction**	Subsection 401.03, Construction, is amended to read as follows: The Engineer and Contractor shall periodically review the existing deck and determine if any patching is necessary. All holes over 1 in. deep having an area greater than 2 sq. ft. shall be patched. Locations and limits of all patch areas shall be approved by the Engineer. Before patching begins, the Contractor's Traffic Manager shall confer with the Engineer to decide on a plan for diverting or detouring traffic during patching operations. All items relating to traffic safety and traffic control requirements shall conform to the Contract Documents. The areas requiring patches shall be clean and free of loose material and conform to the manufacturer's recommendations. When working on a full depth patch area, the Contractor shall protect waterways and roadways under the structure from falling debris. No removed material shall be disposed of in any waterway. ***When a concrete surface is being prepared for patching, a hole shall be saw cut at least 1 in. deep. The repair area shall extend at least 18 in. beyond the spalled area.*** The patching material shall be placed full depth to the top of the existing bridge deck surfaces. New reinforcement will only be required when directed by the Engineer. When a patch has been made and it has not yet reached sufficient strength to support traffic when this section of the structure is opened to traffic, it shall be covered with a steel plate as specified in 522.03.13. All areas around the plate shall be built up with asphalt material.
420 Portland Cement Concrete Structures **420.03.02(p) Year-Built Marking**	Subsection 420.03.02(p), Year-Built Marking, is amended to read as follows: The year of completion ***and the Department structure number*** shall be cast into each structure***'s parapet wall in two places*** **[**~~as determined by the Engineer~~**]**. Forms or molds for casting the year-built numerals ***and the structure number*** in the structure shall be supplied by the Contractor. The year-built numerals ***and structure number*** shall be the size specified in the Contract Documents. ***The location of year-built markings and structure numbers on bridges and on headwalls for pipes and culverts shall be as follows:*** • ***Bridges with parapets—For dual bridges, at each approach end (outside shoulder); for a single bridge, at the approach end (north or east corner); where bridge has a concrete parapet and no definitive***

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	end post, place year-built marking and structure number on the face of parapet as close to the centerline of bearing at the abutment as practical; • ***Pier columns—Only on road-over-road bridges; place structure number on traffic side of approach end of all piers adjacent to the roadway;*** • ***Headwalls for pipes and/or arches with rise 3 ft. or greater—Place year-built marking and structure number at the centerline of headwall (upstream end) directly above the pipe; and*** • ***Box culverts—Place year-built marking and structure number on both sides of the headwall, at the same corner, at the approach end of the headwall.*** *For more information, see the MSHA* Structural Standards Manual.
420.03.04(e) Forming Concrete Parapets and Median Barriers on Bridges	Subsection 420.03.04(e), Forming Concrete Parapets and Median Barriers on Bridges, is amended to read as follows: The Contractor may construct ***full-height*** concrete parapets and median barriers on bridges by either the slip form method or conventional fixed form method. The slip form method is prohibited on bridges maintaining traffic, or on parapets when railing is specified. ***No aluminum railing will be permitted on County structures.*** *(See also Section 461, "Metal Railing.")*
420.03.12 Linseed Oil Protective Coating	Subsection 420.03.12, Linseed Oil Protective Coating, is replaced in whole to read as follows: ***420.03.12 Silane Protective Coating. Silane protective coating shall be applied to the concrete bridge deck slabs, bridge sidewalk and parapet surfaces, all pier caps and abutment seats, box culvert concrete wearing surfaces. Prior to the application of silane, the Contractor shall use degreasers, as required, to clean all concrete surfaces of dirt, dust, oil, grease, automotive contaminants, or other similar material that will interfere with the proper and effective application of the penetrating sealer. All surfaces shall then be cleaned by high pressure water prior to placing the silane protective coating. High pressure water is the minimum cleaning method that will be accepted. Other methods, such as blast racking, mobile power scrubbing, and sand blasting, may be submitted to the Department for approval. Unless directed otherwise by the Department, any permanent paint or tape lane markings required on the concrete bridge superstructure riding surface, or the box culvert wearing***

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	surface, shall be placed after the silane protective coating has been applied. The concrete surfaces to be treated shall also be dry and allowed to cure a minimum of 28 days. Expansion joints shall have been installed prior to the sealer application. Sealer material shall be applied as supplied by the manufacturer without dilution or alteration. Apply two coats of sealant using low pressure (15 psi) airless spray equipment with a fan spray coarse nozzle flooding the surface to obtain uniform coverage unless otherwise recommended by the manufacturer. Follow manufacturer's guidelines between applications to allow for optimum placement of coatings. No application of sealer material shall be allowed if the ambient temperature is below 40° F, or if ice or frost are covering the substrate, or if ambient or surface temperature exceeds 100° F. No sealer shall be applied if precipitation has occurred within 48 hours prior to application and if rainy conditions or heavy rain is anticipated within 8 hours after application. Surface residue, pools, and puddles shall be broomed out thoroughly until they completely penetrate into the surface. Treated areas shall be protected by the use of plastic sheeting or similar other material from rain and other surface water for a period of not less than 8 hours after application.
420.04.07 Measurement and Payment	Subsection 420.04.07, Measurement and Payment, is replaced in whole to read as follows: ***420.04.07 Silane protective coating shall be measured and paid for at the Contract unit price per square yard. The payment shall be full compensation for all materials, labor supervision, equipment, tools, surface preparation, testing, coring, and all incidentals necessary to complete the work.***
421 Reinforcement for Concrete Structures **421.01 Description**	Subsection 421.01, Description, is amended to read as follows: This work shall consist of furnishing and placing reinforcement, including deformed steel bars, wire mesh, and plain round steel spiral bars, as specified in the Contract Documents or as directed by the Engineer. Reinforcement ***(deformed steel bars)*** shall be [~~uncoated or~~] epoxy coated as specified in the Contract Documents. ***All welded wire fabric (wire mesh) shall be provided in sheets and be epoxy coated.***

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425 Lightweight Superstructure Concrete **425.02 Materials**	Subsection 425.02, Materials, is amended to read as follows: Water added to the mix using saturated aggregates shall ***be reduced so that the water/cement ratio does*** not exceed [~~0.45~~] ***0.40 maximum***.
435 Cleaning and Painting Structural Steel **435.01 Description**	Subsection 435.01, Description, is amended to read as follows: The Contractor shall provide all maintenance of traffic for lane and shoulder closures required to complete the work including inspection of the work. The Contractor shall provide the Engineer with safe and convenient access for the inspection and measurement of the work throughout the course of the project, for final inspection, and final warranty inspections. [~~The Administration will provide all maintenance of traffic and access for the Engineer and Contractor for all intermediate annual inspections.~~] All maintenance of traffic and access required for corrective action resulting from these inspections, and inspections following corrective action, shall be at no additional cost to the ***Department*** [~~Administration~~]. When a railroad is included in the project, all railroad fees shall be as specified in the Contract Documents except that any additional impact on the railroad due to corrective actions or additional inspections shall be at no additional cost to the ***Department*** [~~Administration~~].
435.03 Construction	Subsection 435.03, Construction, is amended to read as follows: **Paint Inspector Notification.** The Contractor shall notify ***the Department*** [~~the Bridge Inspection and Remedial Engineering Division~~] a minimum of 72 hours prior to beginning field cleaning and painting of new and existing steel. ***The Department*** [~~The Bridge Inspection and Remedial Engineering Division~~] will provide a paint inspector to assist the Engineer during inspection of the cleaning and painting portion of the work. Failure to comply with this notification shall be cause for rejecting the work performed. Paint applied to steel surfaces without this inspection may be required to be removed and reapplied at no additional cost to the ***Department*** [~~Administration~~].

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440 Prestressed Concrete Beams and Slab Panels **440.02.01 Portland Cement Concrete**	Subsection 440.02.01, Portland Cement Concrete, is amended to read as follows: **(d)** Maximum ***water/cement*** [~~WCM~~] ratio of ***0.40*** [~~0.45~~].
504 Hot Mix Asphalt Pavement **504.03 Construction**	Subsection 504.03, Construction, is amended to read as follows: ***Quality Control Plan—Where Maryland Standard Method of Tests MSMT 730 is referred to in this subsection, the Department*** **Specifications and Standards,** ***Section II, Table II-2, and Section I, Table I-8, shall also be followed. When a master plant Quality Control Plan is submitted and approved, an addendum shall be submitted for each specific Contract if requested by the Department's Engineer. If not requested, the Contractor may then obtain asphalt from the producer whose plan has been approved.*** ***Plan Administrator and Certified Technicians—The plan Administrator and Certified Technicians may supervise the Quality Control Plan on more than one project if that person can be in contact with the job site within 1/2 [~~one~~] hour after being notified*** [~~of a problem~~]. ***A minimum of one certified field technician shall be physically present at the job site unless otherwise approved in the Contract. The certified technician shall be adequately equipped with, at least, a calibrated asphalt density gauge, a dial thermometer, and a communication device.***
504.03.01 Equipment	Subsection 504.03.01, Equipment, is amended to read as follows: All equipment including the production plant and paving equipment shall ***be adequate and properly accessorized for the job and the weather conditions and shall*** be subject to approval by the ***Department's*** Engineer. The plant shall be ready for inspection by the ***Department's*** Engineer at least 48 hours prior to the start of construction operations.

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504.03.02 Weather Restrictions	Subsection 504.03.02, Weather Restrictions, is amended to read as follows: ***Superpave mixture*** HMA material***s with a binder grade of PG 64-22 and PG 70-22 and conventional mixtures*** shall only be placed on roadway surfaces when the ambient air and surface temperature is at least 40° F and rising***. Superpave mixture HMA materials with a binder grade of PG 76-22 shall only be placed when the ambient air and surface temperature is at least 50° F and rising. These restrictions are applicable to*** [~~for~~] surface mixes and [~~at least 32°F and rising for~~] base mixes.
504.03.05 Hot Mix Asphalt Placement	Subsection 504.03.05, Hot Mix Asphalt Placement, is amended to read as follows: Hot Mix Asphalt (HMA) shall be placed by the paver. Delivery of the mixture by the hauling units and placement shall be continuous. ***At the time of placement, the temperature of the mixture shall be a minimum of 250° F for conventional mixture, 250° F for PG 64-22 Superpave mixture HMA, and 270° F for PG 70-22 Superpave mixture HMA and PG 76-22 Superpave mixture HMA.*** **[**~~The temperature of the mixture shall be a minimum of 225°F at the time of placement.~~**]** Broadcasting of loose mixture over the new surface is prohibited.
504.03.06 Compaction	Subsection 504.03.06, Compaction, is amended to read as follows: Immediately following placement of the HMA, ***conventional (Marshall) mixes shall be compacted by rolling to an in-place density of 95 percent or higher of the Marshall target gravity, while Superpave mixes*** shall be compacted by rolling to an in-place density of 92.0 to 97.0 percent of the ***maximum theoretical specific gravity (GMM)*** [~~maximum density~~]. In-place density shall be completed before the mixture cools ***to the degree of tenderness, unless otherwise approved by the Materials Engineer.*** A probe-type surface thermometer or digital infrared thermometer ***shall be provided by the Contractor for use by the Engineer and Contractor, and shall*** remain the property of the Contractor at the completion of the project.

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504.03.08 Edge Dropoff	Subsection 504.03.08, Edge Dropoff, is amended to read as follows: Where ***Superpave mixture*** HMA paving is being applied to highways carrying traffic, all pavement courses exceeding 2-1/2 in. in depth shall be matched with the abutting lane or shoulder on the same working day. Where pavement courses of 2-1/2 in. or less are placed, the Contractor shall have the option of paving the abutting lane or shoulder on alternate days. The abutting lane or shoulder shall be paved regardless of the depth of pavement course prior to weekends and temporary shutdowns. When uneven pavement joints exist, the Contractor shall provide advance warning traffic control devices in conformance with the Contract Documents. ***At the direction of the Department's Engineer, the Contractor shall be required to provide a 45° asphaltic fillet along the pavement edges of all rural roadways where there is no curb and gutter. The purpose of the asphaltic fillet or angled edge is to help alleviate vehicular control problems associated with pavement edge dropoffs. The use of the beveled edge at an angle of 45° is to be accomplished by attaching a moulding shoe device to the paving machine. The asphaltic fillet is formed along the pavement edge as the new roadway surface is placed. The moulding shoe forms the shape of the asphaltic fillet and reduces the amount of handwork required to finish the pavement edge. Compaction of the asphaltic fillet must be accomplished by the use of an edge compacting device attached to the compaction rollers. This device should consist of a hydraulically powered wheel which rolls alongside the compactor's drum while simultaneously pinching the edge of the mat toward the drum and providing lateral resistance.*** ***The costs associated with this work are to be considered incidental to the Contract unit bid price per ton of the Hot Mix Asphalt item being utilized, and shall be full compensation for all labor, supervision, equipment, and materials.***
504.03.10 Sampling and Testing for Density	Subsection 504.03.10, Sampling and Testing for Density, is amended to read as follows: ***Existing conditions including thickness and visible condition of all existing asphalt courses and subbase stone shall be examined and reported by the Contractor by taking a minimum of five (5) full-depth cores no less than 10 business days prior to milling. Mixture sampling shall be performed before the mat is compacted.*** Density testing shall be performed before allowing traffic or construction equipment on the placed mat and before the placement of the next ***lift*** [~~layer~~].

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504.03.10(a) Compaction for Quality Control	Subsection 504.03.10(a), Compaction for Quality Control, is amended to read as follows: On Contracts requiring less than ***200*** **[**~~500~~**]** tons of HMA or when HMA is used in nontraffic areas or on bridge decks, acceptance will be determined by the ***Contractor's*** use of a thin layer nuclear density gauge, when tested in conformance with the manufacturer's recommendations ***and in the presence of a Department Inspector***. [~~When the HMA courses are compacted to 1 in. or less, a control strip shall be constructed on the first day of paving. Readings shall be taken with a thin layer nuclear density gauge to determine roller patterns and the number of coverages to obtain optimum density. Optimum density is defined as when the average density does not change by more than 1.0 percent between successive coverages of a 400 to 500 ft. area. This optimum density shall be used to determine HMA acceptance after approval by the Engineer. Any lot average 2.0 percent or more below optimum density shall require a new control strip be constructed and tested before paving continues.~~] ***The Contractor/Permittee shall have the responsibility of obtaining cores for the testing of the pavement. This process must be verified by a Department Inspector, who shall select the locations for the cores to be cut and sign the testing forms. No core test results shall be accepted unless a Department Inspector actually observes the testing of the cores or an approved certified testing lab performs the tests. Patches to be repaired should be repaired immediately following the cutting of the core to prevent water intrusion into the pavement. Patching of the core test hole shall include well-compacted hot/cold mix asphalt or colored nonshrink grout material.*** The Contractor/Permittee may use the core or the combined nuclear/core method of testing on Contracts ***or roadway improvement projects*** requiring ***200*** **[**~~500~~**]** tons or more.
504.03.15 Pavement Profile	Subsection 504.03.15, Pavement Profile, is amended to read as follows: Refer to the Pavement Surface Profile requirements ***in Section IV, Appendix B, unless otherwise*** specified in the Contract Documents.

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508 Milling Hot Mix Asphalt Pavement **508.03.02 Pavement Milling**	Subsection 508.03.02, Pavement Milling, is amended to read as follows: The milling operation shall be performed in only one lane at a time. When milling highways carrying traffic, all milling exceeding 2-1/2 in. shall have the abutting lane or shoulder milled on the same day. When milling to a depth of 2-1/2 in. or less, the Contractor has the option of milling the abutting lane or shoulder on alternate days. The abutting lane or shoulder shall be milled regardless of depth prior to weekends or temporary shutdowns. Where temporary uneven pavement joints exist, the Contractor shall provide adequate advance warning traffic control devices in conformance with the Contract Documents. Temporary pavement tie-ins shall be constructed a minimum of 4 ft. in length for each 1 in. of milling depth. In addition to any other equipment required to remove debris from behind the milling operation, a street sweeper equipped with a vacuum shall be used to remove the dust prior to returning the area to traffic. After the milling operation is complete, all depressions, potholes, and other irregularities shall be filled, and any existing water valves, meters, manhole covers, etc., shall be wedged using HMA. ***The milling materials become the property of the County, and the Contractor shall deliver and dump the material at the Department's Glendale, Ritchie, or Brandywine maintenance facilities, as directed by the Department's Engineer.***
535 Pavement Surface Profile	Section 535 is amended by removing this section from reservation and adding new Subsection 535.01, Description; Subsection 535.01.01, Existing Conditions; Subsection 535.02, Materials; Subsection 535.03, Construction; Subsection 535.03.01, Equipment Standardization Testing; Subsection 535.03.02, Quality Control Testing for Pavement Profile; Subsection 535.03.03, Quality Assurance Testing for Pavement Profile, Subsection 535.04, Measurements and Payment; Subsection 535.04.02, Defects; and Subsection 535.04.03, Total Pay Adjustment. See "Pavement Design" in Section I and Appendix A, Form B-18, in Section IV of this manual for specific requirements.

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549 Permanent Pavement Markings **549.02.01 Materials**	Subsection 549.02, Materials, is amended by adding the following new Subsection 549.02.01: ***549.02.01 Materials. The higher performance, wet reflective, preformed pliant polymer pavement marking material shall be used exclusively on new crosswalks, traffic calming areas, and longitudinally along the roadway when use is directed by the Department's Engineer. The material may be adhered to asphalt or concrete road surfaces by a precoated, pressure-sensitive adhesive. The pavement markings shall be capable of application on new, dense, and open-graded asphalt paving during the paving operation. The preformed patterned markings shall consist of white or yellow film with clear microcrystalline ceramic beads incorporated to provide immediate reflection during both wet and dry conditions. The markings shall be skid resistant and capable of withstanding high traffic volumes and severe weather conditions. The retroreflectance values shall be measure under dry conditions in accordance with ASTM D4061, and ASTM E2176 or ASTM E2177 under wet conditions. All skid-resistance tests shall be in accordance with ASTM E303. The patterned material without adhesive shall have a minimum caliper of 0.065 inches (1.651 mm) at the thickest portion of the patterned cross section and a minimum caliper of 0.020 inches (0.508 mm) at the thinnest portion of the cross section. Use of the high-performance pavement marking material requires prior approval by the Department's Engineer.***
602 Curb, Combination Curb and Gutter, and Monolithic Median **602.03.01(a) Excavation**	Subsection 602.03.01(a), Excavation, is amended to include the following: Excavation shall be to the specified depth and to a width that permits installation and bracing of the forms. The subgrade shall be compacted to ***95*** **[**~~92~~**]** percent density in conformance with T-180, Method A, and trimmed to the proper shape and required grade. All soft and unsuitable material shall be removed and replaced with suitable material approved by the Engineer. ***The replacement suitable subbase material shall be extended underneath the concrete curb in accordance with the Standard Details.***

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602.03.01(c) Concreting	Subsection 602.03.01(c), Concreting, is amended to include the following: ***Concrete mix sources and proportions shall not be changed after the project starts without the approval of the Department. After the surface has been struck off and screeded to the proper elevation, it shall be given a broom finish, free from depressions or irregularities of any kind. In no case shall dry cement or a mixture of dry cement and sand be sprinkled on the surface to absorb moisture or hasten hardening. Freshly placed concrete shall be protected from the elements during curing.***
602.03.01(j) Removal and Replacement of Concrete Curb and Gutter	Subsection 602.03.01, Concrete Curb, Combination Curb and Gutter, and Monolithic Median, is amended by adding the following new Subsection 602.03.01(j), Removal and Replacement of Concrete Curb and Gutter: ***Unless otherwise directed by the Department's Engineer, the removal and replacement shall be bid and paid for on a linear foot basis, measured in place, completed and accepted.*** ***The linear footage, measured as specified above, shall constitute full compensation for the removal and disposal of all types of existing curb and gutter without exception, and the replacement with new curb and gutter, per Prince George's County Standard No. 300.01, as provided in the bid proposal. Measurement and payment as specified above shall also include removal and disposal, all necessary excavation, furnishing and placing all materials including expansion material, forms, all types of saw cutting, backfilling and backfill material, tamping, sod replacement, roadway patching, and for all material, labor, supervision, equipment, tools, and incidentals necessary to complete the items.*** ***The intent is to disturb as little as possible of the existing roadway outside the areas of concrete replacement. Unless otherwise directed by the Department's Engineer, all curb and gutter shall be removed from the backside only and the existing pavement is to be utilized as the front form for the new gutter pan. Cutting of the pavement edge is to be limited to 2-3 in. and only as necessary to repair damaged pavement. No additional payment will be considered for utilizing this method.*** ***When directed in the field by the Department's Engineer, existing paving is to be saw cut at the gutter edge and will not be paid for separately, but will be incidental to this item. No payment will***

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	be made under this item or other items of the Contract for the Contractor to achieve a straight edge as a correction or repair of the Contractor's work in accordance with this Section of the Contract. ***All transition sections of curb and gutter necessary due to type changes shall be 10 ft. in length and shall be measured and paid for as Department Standard 300.01, Concrete Curb and Gutter. Standard concrete curb depressions for the Americans with Disabilities Act (ADA)-compliant sidewalk ramps shall be measured and paid for under this item.*** ***Included in the unit bid prices for removing and replacing curb and gutter shall be the removal and replacement of all bituminous and/or concrete paving and gravel base course required, to a point 1 ft. or less from the leading front edge of the gutterpan, to allow for forming the front edge of the gutterpan.***
603 Sidewalks **603.03.01(c) Concreting**	Subsection 603.03.01(c), Concreting, is amended to read as follows: ***Concrete mix sources and proportions shall not be changed after the project starts without the approval of the Department.***
603.03.01(d) Finishing	Subsection 603.03.01(d), Finishing, is amended to read as follows: ***The concrete shall be given a broom finish, free from depressions or irregularities of any kind. In no case shall dry cement or a mixture of dry cement and sand be sprinkled on the surface to absorb moisture or hasten hardening. Freshly placed concrete shall be protected from the elements during curing.***
603.03.01(h) Removing and Replacing Concrete Sidewalk	Subsection 603.03.01, Concrete Sidewalks, is amended by adding the following new Subsection 603.03.01(h), Removing and Replacing Concrete Sidewalk: ***The Contract unit bid price per square foot for "Removing and Replacing Concrete Sidewalk" shall include furnishing and placing all materials including expansion material, all necessary excavation, the removal and disposal of the existing sidewalk, backfilling and compaction of the subgrade, sod replacement, and for all labor, equipment, tools, and incidentals necessary to complete the work. Unless otherwise designated by the Department's Engineer in the field, all concrete sidewalks shall conform to Department Standards 300.05, 300.06, 300.07, 300.08, 300.09, and 300.10. All the Americans with Disabilities Act (ADA)-compliant sidewalk ramps shall be measured and paid for under this item.***

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	All roadside trees within the Contract area are to be root-pruned with a Nermeer root-pruning machine or approved equivalent prior to removal of existing sidewalk. The cutting of tree roots larger than 2 in. caliper requires the authorization of the Department. Cut roots are to be painted with an approved tree wound dressing before installation of forms or backfilling. All costs involved shall be included in the Contract unit bid price for "Remove and Replace Concrete Sidewalk." ***When working in the vicinity of roadside trees where damage to tree trunks and limbs may occur, excavation will be done with hand tools only, in such a manner that no trunk or limb damage will occur. Any tree damage is to be repaired by a Maryland State licensed tree expert at no additional cost to the County.***
603.03.01(i) Concrete Steps and Handrails	Subsection 603.03.01, Concrete Sidewalks, is amended by adding the following new Subsection 603.03.01(i), Concrete Steps and Handrails: ***Concrete steps and handrails shall consist of constructing concrete steps, including furnishing and placing handrails where specified, conforming to Maryland SHA's*** **Standards for Highways and Incidental Structures** ***("Book of Standards"), and Federal accessibility guidelines of the Americans with Disabilities Act (ADA). All concrete shall conform to Class 1 (MSHA Mix No. 3), air-entrained, and include reinforcing steel requirements. The handrail shall be fabricated of genuine wrought iron pipe, with prime coat and two coats of approved metal enamel, or in accordance with approved plans/Contract Documents.*** ***Steps shall be measured per linear foot of tread. Cheek walls are required for steps consisting of more than two risers and treads, and measurements shall be taken from the outside faces of cheek walls. Handrails shall also be measured per linear foot, slope measure, of top rail.*** ***Concrete steps shall be paid for at the unit bid price for linear foot of tread, which price shall be full compensation for excavating, forming, supplying, and finishing concrete and backfilling. The price shall also include supplying and placing reinforcement steel. Handrails shall be paid for at the unit bid price per linear foot of handrail, which price shall be full compensation for furnishing all materials, fabrication, painting, setting sockets, and installation.***

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605 Metal Traffic Barriers **605.03.06 Reflective Delineators**	Subsection 605.03.06, Reflective Delineators, is amended to read as follows: Reflective delineators shall be installed ***behind*** [~~on~~] the traffic barrier W beam as specified in the Contract Documents***. This shall consist of erecting 7 ft. standard galvanized U-shaped steel channel traffic posts equipped with reflective red 12 in. x 12 in. diamond shape delineators placed along the rear of the barricade at a height of 4 ft. Spacing and quantity depend on the width of the right-of-way. Refer to Department Standards 200.10 and 200.11 for specific requirements.***
701 Topsoil and Subsoil **701.03.02(b) Surface Preparation**	Subsection 701.03.02(b), Surface Preparation, is amended to read as follows: The Contractor shall completely prepare and finish the surface of all areas to be covered with topsoil and subsoil as specified in the Contract Documents. Immediately prior to being covered with topsoil, the prepared surface shall be in a ***lightly tamped*** **[**~~loose~~**]** condition free from stones or other foreign material ***2*** **[**~~3~~**]** in. or greater***, and all rocks exceeding this size shall be removed to a depth of 4 in., using a York rake***. When topsoil is placed on a prepared surface material that blends with the topsoil or subsoil, the Contractor shall work the topsoil or subsoil into that material by means acceptable to the Engineer. When topsoil or subsoil will not blend with the prepared surface material, the Contractor shall roughen the surface to provide a bond for the topsoil or subsoil.
701.03.02(d) Placing and Spreading Topsoil	Subsection 701.03.02(d), Placing and Spreading Topsoil, is amended to read as follows: Topsoil shall be placed, spread, and maintained over areas designated to the depth, that after settlement, the completed work shall be in conformance with the thickness, lines, grades, and elevations specified in the Contract Documents. Stones and other foreign material larger than ***2*** **[**~~3~~**]** in. shall be removed and disposed of by the Contractor ***prior to the placement of topsoil***. Slopes 4:1 to 3:1 shall be ***stabilized*** **[**~~tracked~~**]** with cleated ***track*** **[**~~tract~~**]** type equipment operating perpendicular to the slope.

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704 Temporary Seeding and Temporary Wood Cellulose Mulching	*In Section 704, Temporary Seeding and Temporary Wood Cellulose Mulching, the material specifications (with the exception of measurement and payment) and construction requirements contained within the MSHA* Standard Specifications *are deleted and replaced in their entirety by the applicable provisions contained within the* ***Maryland Standards and Specifications for Soil Erosion and Sediment Control and the U.S. Department of Agriculture's Soil Conservation Service Technical Guide,*** *as used by the Prince George's County Soil Conservation District.*
705 Turf Establishment **705.01.03 Permanent Turf Establishment**	Subsection 705.01, Description, is amended by deleting Subsections 705.01.01, Regional Areas, and 705.01.02, Seeding Seasons and Seed Mixes, in whole and replacing them with a new Subsection 705.01.03, Permanent Turf Establishment, which reads as follows: ***All seeding to be done in conjunction with turf establishment shall utilize Seed Mix No. 1, as specified in MSHA*** **Standard Specifications for Construction and Materials*, Subsection 920.04.02. In no cases shall Temporary Seed Mix be used for permanent turf establishment.***
706 Woody Shrub Seeding	*In Section 706, Woody Shrub Seeding, the material specifications (with the exception of measurement and payment) and construction requirements contained within the MSHA* Standard Specifications *are deleted and replaced in their entirety by the applicable provisions contained within the Maryland* Standards and Specifications for Soil Erosion and Sediment Control *and the U.S. Department of Agriculture's Soil* Conservation Service Technical Guide, *as used by the Prince George's County Soil Conservation District.*
707 Wildflower Seeding	*In Section 707, Wildflower Seeding, the material specifications (with the exception of measurement and payment) and construction requirements contained within the MSHA* Standard Specifications *are deleted and replaced in their entirety by the applicable provisions contained within the Maryland* Standards and Specifications for Soil Erosion and Sediment Control *and the U.S. Department of Agriculture's* Soil Conservation Service Technical Guide, *as used by the Prince George's County Soil Conservation District.*

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708 Sodding	*In Section 708, Sodding, the material specifications (with the exception of measurement and payment) and construction requirements contained within the MSHA* Standard Specifications *are deleted and replaced in their entirety by the applicable provisions contained within the Maryland* Standards and Specifications for Soil Erosion and Sediment Control *and the U.S. Department of Agriculture's* Soil Conservation Service Technical Guide, *as used by the Prince George's County Soil Conservation District.*
709 Soil Stabilization Matting	*In Section 709, Soil Stabilization Matting, the material specifications (with the exception of measurement and payment) and construction requirements contained within the MSHA* Standard Specifications *are deleted and replaced in their entirety by the applicable provisions contained within the Maryland* Standards and Specifications for Soil Erosion and Sediment Control *and the U.S. Department of Agriculture's* Soil Conservation Service Technical Guide, *as used by the Prince George's County Soil Conservation District.*
710 Planting Trees, Shrubs, Vines, and Seedling Stock **710.02 Materials**	Subsection 710.02, Materials, is amended to read as follows: Fertilizer — ***MSHA*** 920.03.02 and 920.03.03 Wood Chips — ***MSHA*** 920.05.02 Plant Materials — ***MSHA*** 920.07 ***and Department Standards 600.08–600.20*** Miscellaneous — ***MSHA*** 920.08
710.03.02 Preparation for Planting	Subsection 710.03.02, Preparation for Planting, is amended to read as follows: The Contractor ***or Permittee*** shall perform all layout, bed preparation, and soil amending ***in accordance with a street tree plan approved by the Department (see Department Standards 600.01 through 600.06)***, as follows:
710.03.06 Plant Establishment	Subsection 710.03.06, Plant Establishment, is amended to read as follows: The Contractor shall maintain and establish the plants for a period of 1 year ***(a complete growing season). The tree planting season lasts from October 15 to April 30. However, no planting shall occur where the soil is frozen. The following criteria shall apply in determining whether or not Permittees will be required to post performance bonds for the***

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	roadside trees and the amount of the bond required prior to the Department's release of performance bonds posted for street construction permits. • ***For Capital Improvement Projects, refer to the contract documents for plant warranty.*** • ***For Street Construction Permits, the following plant warranties apply to all permittees:*** ***<u>One growing season, all trees acceptable</u>: No separate bonds will be required when roadside trees, planted during or outside the planting season (which lasts between October 15 and April 30), are maintained and established by the Permittee for one full growing season, and are found to be in good health and of the species and cultivar approved in the tree plan for the permit, at the time of the final inspection and acceptance of the associated street construction permit.*** ***<u>One growing season, some trees not acceptable</u>: If any dead or damaged trees are found at the time of the final inspection for acceptance of the associated street construction permit, the Permittee may elect to replace the unacceptable trees during a planting season, or the Permittee may elect to pay the County the cost of the replacement (fee-in-lieu), as determined by the Department Inspector using the prevailing unit cost of planted trees; or the Permittee may elect to post a bond equivalent to 100 percent of the value of the replacement trees, as determined by the Department Inspector using the prevailing unit cost of planted trees, until such time as the trees can be replaced during the planting season. Tree bonds shall be posted in cash when the value is less than $10,000.00. Letters of credit, assignment of funds, savings accounts in favor of Prince George's County, and certificates of guarantee issued by the Development Guaranty Group of Prince George's County, Inc., are also acceptable forms of security when the value of the trees to be bonded is $10,000.00 or more.*** ***<u>Partial growing season</u>: Should the final inspection and acceptance of the associated street construction permit occur before the trees are maintained and established by the Permittee for one full growing season, the Permittee will be required to post a bond equivalent to 100 percent of the value of the planted trees, as determined by the Department Inspector using the prevailing unit cost of planted trees,***

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	before the performance bond for the street construction permit will be released. The tree bond shall be valid for sufficient time to allow trees to be established for one full growing season. Tree bonds shall be posted in cash when the value is less than $10,000.00. Letters of credit, assignment of funds, savings accounts in favor of Prince George's County, and certificates of guarantee issued by the Development Guaranty Group of Prince George's County, Inc., are also acceptable forms of security when the value of the trees to be bonded is $10,000.00 or more. The trees will be reinspected at the end of the growing season (1 year), and the tree bond will be released if all trees are found to be viable and in good health. For any dead or damaged trees, the Permittee may either replace the trees during the planting season or pay the County the cost of the replacement (fee-in-lieu), as determined by the Department Inspector using the prevailing unit cost for planted trees. No further bonding will be required for the replacement trees. ***<u>Trees not planted</u>: If all work stipulated by the permit is satisfactorily completed in accordance with the permit requirements, but the roadside trees required by the permit are not planted due to adverse weather conditions or other reasons, the Permittee will be required to post a bond equivalent to 100 percent of the value of the trees, as determined by the Department Inspector using the prevailing unit cost for planted trees, prior to the release of the performance bond for the permit. Tree bonds shall be posted in cash when the value is less than $10,000.00. Letters of credit, assignment of funds, savings accounts in favor of Prince George's County, and certificates of guarantee by the Development Guaranty Group of Prince George's County, Inc., are also acceptable forms of security when the value of the trees to be bonded is $10,000.00 or more. The tree bond shall be valid for sufficient time to allow for the planting of the trees during the planting season. If, after one full growing season, a re-inspection reveals all trees to be viable and in good health, and of the species and cultivar approved in the tree plan for the permit, the bond shall be released. However, for any trees found to be dead or damaged, the Permittee will be required to replace the trees during the planting season or pay the County the cost of replacement (fee-in-lieu) as determined by the Department Inspector using the prevailing unit cost for planted trees.*** ***In addition to the above, all street trees must be planted in accordance with criteria stated in Section I, Chapter 3, Streetscape, Section II and Section III, Standards 600.01 to 600.20.***

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710.03.06(b)(2) Weed Control	Subsection 710.03.06(b)(2), Weed Control, is amended in whole to read as follows: ***(2) Weed Control within the Public Right-of-Way. The use of herbicide chemicals for weed control shall only be carried out in strict compliance with State regulations. All herbicide chemical applications used for weed and/or vegetation control within the County's rights-of-way shall only be performed by an "applicator" licensed by the Maryland Department of Agriculture Pesticide Regulation Section. The applicator shall maintain and possess certification in Categories IIIA, IIIC, VI, and VII-E in accordance with the provisions of the Agriculture Article, Sections 5-201 through 5-211, of the Annotated Code of Maryland. The transporting, storing, handling, mixing, applying, or disposal of the herbicide chemical shall be done in strict compliance with the materials manufacturers' label and recommendations, and in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Resource Conservation Recovery Act (RCRA).***
801 Concrete Foundations	*With the exception of Subsection 801.01 Description, which describes the types of work covered by Section 801, the provisions of "Section 801—Concrete Foundations" are deleted. For material specifications and construction requirements for the construction of traffic signals, the Department of Public Works and Transportation's* ***Specifications and Standards for Traffic Control Signals*** *(see Section IV, Appendix G) shall be used.*
804 Grounding	*The material specifications and construction requirements for furnishing and installing grounding systems for Section 804, Grounding, shall be as specified by the electric utility companies providing utility service to the area (BGE, PEPCO, and SMECO).*
805 Electrical Conduit and Fittings	*The material specifications and construction requirements for Section 805, Electrical Conduit and Fittings, which pertains to the construction of roadway lights and traffic signals, are contained in the* ***MSHA Standard Specifications, and the Department of Public Works and Transportation's Specifications and Standards for Traffic Control Signals*** *(see Section IV, Appendix G), and the electrical utility requirements of the utility service to the area (BGE, PEPCO, and SMECO).*

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806 Luminaires and Lamps	*The material specifications and construction requirements for Section 806, Luminaires and Lamps, which pertains to the construction of roadway lights, shall be as specified by the electrical utility company providing the utility service to the area (BGE, PEPCO, and SMECO).*
807 Electrical Service Equipment	*The material specifications and construction requirements for Section 807, Electrical Service Equipment, which pertains to the construction of traffic signals, are contained in the* ***MSHA Standard Specifications and the Department of Public Works and Transportation's Specifications and Standards for Traffic Control Signals*** *(see Section IV, Appendix G).*
808 Lighting Structures	*The material specifications and construction requirements for Section 808, Lighting Structures, which pertains to the construction of roadway lights, shall be as specified by the electrical utility company providing the utility service to the area (BGE, PEPCO, and SMECO).*
809 Trenching and Backfilling	*The material specifications and construction requirements for Section 809, Trenching and Backfilling, which pertains to the construction of roadway lights, shall be as specified by the electrical utility company providing the utility service to the area (BGE, PEPCO, and SMECO), as long as they are outside the roadway limits. If within the roadway limits, refer to the MSHA Standard Specifications, Section 809, "Trenching and Backfilling."*
809.02 Materials	*The material specifications and construction requirements for Subsection 809.02, Materials, which pertains to the construction of roadway lights, shall be as specified by the electrical utility company providing the utility service to the area (BGE, PEPCO, and SMECO), as long as they are outside the roadway limits. If within the roadway limits, refer to the MSHA Standard Specifications, Section 809, "Trenching and Backfilling."*
810 Electrical Cable, Wire, and Connectors	*The material specifications and construction requirements for Section 810, Electrical Cable, Wire, and Connectors, which pertains to the construction of traffic signals, are contained in the* ***MSHA Standard Specifications and the Department of Public Works and Transportation's Specifications and Standards for Traffic Control Signals*** *(see Section IV, Appendix G).*
810.01 Description	Subsection 810.01, Description, is amended to read as follows: ***Warning: All damage to traffic signal loop detectors within a State- or County-maintained intersection shall be borne by the Contractor.***

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	This work shall consist of furnishing and installing loop detector wires and leads, electrical cable, cable ducts, wire, micro-loop probe sets, communication cable, and associated connectors of the type and at the locations specified in the Contract Documents or as directed by the Engineer. ***For new construction or resurfacing of existing roadways, all loops, micro-loops, and other subsurface detection devices shall be installed in the base course paving as contained in the* Specifications and Standards for Traffic Control Signals *(see Section IV, Appendix G).*** ***For existing roadways that have not been resurfaced, such devices shall be installed to the minimum depth specified in Standard TS-11 of the* Specifications and Standards for Traffic Control Signals *(see Section IV, Appendix G).***
810.04 Measurement and Payment	Subsection 810.04, Measurement and Payment, shall be amended by adding the following text: ***Measurement and payment shall be as contained in the* Specifications and Standards for Traffic Control Signals *(see Section IV, Appendix G).***
811 Electrical Hand Holes, Manholes, Pull and Junction Boxes	*Section 811, Electrical Hand Holes, Manholes, Pull and Junction Boxes, which pertains to the construction of roadway lights, the material specifications and construction requirements shall be as specified by the electrical utility company providing the utility service to the area (BGE, PEPCO, and SMECO).*
812 Wood Sign Supports	*NOTE: Wood sign supports shall not be used in the construction of temporary or permanent traffic signs.* Section 812, Wood Sign Supports, is amended by deleting it in whole and replacing it with the following text: ***Section 812—Galvanized U-Shape Steel Channel Sign Supports*** ***812.01 Description. This work shall consist of furnishing and erecting steel sign supports as specified in the Contract Documents or as directed by the Department's Engineer. Wooden sign supports are not permitted within County-maintained roadways. Signs shall be as specified in Section 813.***

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812.02 Materials	Subsection 812.02, Materials, is amended to read as follows: ***Steel*** [~~Wood~~] Sign Supports ***104.08.01, 104.08.02, and 104.08.03*** [~~921.05~~]; and ***812.01*** [~~921.06~~] Reflectorization 950.03 Signs 950.08 Portable Sign Supports As approved by the ***Department*** [~~Office of Traffic and Safety~~]
812.03 Construction	Subsection 812.03, Construction, is deleted in its entirety: [~~Signs that will be in place for more than three working days shall be mounted on two 4 x 4 in. wood posts unless otherwise specified. The height of the sign shall be as specified in the Contract Documents. Additional bracing of signs is prohibited. The tops of the wood posts shall not protrude more than 3 in. beyond the nearest edge of the sign. Wood posts 4 x 4 in. shall be placed a minimum of 4 ft. into the ground. Wood posts 4 x 6 in. shall be placed a minimum of 5 ft. into the ground.~~]
813 Signs **813.02.01 Materials**	Subsection 813.02, Materials, is amended by adding the following new Subsection 813.02.01: ***All reflective sign sheeting materials used in conjunction with new County roadway development, or existing sign maintenance, shall use Type IV High Intensity grade prismatic reflective sheeting material in accordance with AASHTO M268 requirements. Use of other high-performance reflective sheeting requires prior approval by the Department's Engineer.***
813.03.01 Construction	Subsection 813.03, Construction, is amended by adding the following new Subsection 813.03.01: ***On County Capital Improvement Program projects, upon project completion, the contractor shall remove all project signs and return them to the Prince George's County sign shop on D'Arcy Road in Forestville.***

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813.04.01(a) Measurement and Payment	Subsection 813.04, Measurement and Payment, is amended by adding the following new Subsection 813.04.01(a): ***The removal of the project signs at the end of the project shall not be measured for payment, but this item shall be incidental to the SIGNS Items, within the bid.***
814 Signal Heads	*The material specifications and construction requirements for Section 814, Signal Heads, which pertains to the construction of traffic signals, are contained within the* ***MSHA Standard Specifications and the Department of Public Works and Transportation's Specifications and Standards for Traffic Control Signals*** *(see Section IV, Appendix G).*
816 Traffic Control Device Cabinets and Equipment	*The material specifications and construction requirements for Section 816, Traffic Control Device Cabinets and Equipment, which pertains to the construction of traffic signals, are contained within the* ***MSHA Standard Specifications and the Department of Public Works and Transportation's Specifications and Standards for Traffic Control Signals*** *(see Section IV, Appendix G).*
817 Push Buttons and Push Button Signs	*The material specifications and construction requirements for Section 817, Push Buttons and Push Button Signs, which pertains to the construction of traffic signals, are contained within the* ***MSHA Standard Specifications and the Department of Public Works and Transportation's Specifications and Standards for Traffic Control Signals*** *(see Section IV, Appendix G).*
818 Signal Structures	*The material specifications and construction requirements for Section 818, Signal Structures, which pertains to the construction of traffic signals, are contained within the* ***MSHA Standard Specifications and the Department of Public Works and Transportation's Specifications and Standards for Traffic Control Signals*** *(see Section IV, Appendix G).*
819 Steel Span Wire	*The material specifications and construction requirements for Section 819, Steel Span Wire, which pertains to the construction of traffic signals, are contained within the* ***MSHA Standard Specifications and the Department of Public Works and Transportation's Specifications and Standards for Traffic Control Signals*** *(see Section IV, Appendix G).*

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820 General Electrical Work and Testing	*The material specifications and construction requirements for Section 820, General Electrical Work and Testing, which pertains to the construction of traffic signals, are contained within the* ***MSHA Standard Specifications and the Department of Public Works and Transportation's Specifications and Standards for Traffic Control Signals*** *(see Section IV, Appendix G).*
821 Breakaway Base Support Systems	*The material specifications and construction requirements for Section, 821, Breakaway Base Support Systems, which pertains to the construction of traffic signals, are contained within the* ***MSHA Standard Specifications and the Department of Public Works and Transportation's Specifications and Standards for Traffic Control Signals*** *(see Section IV, Appendix G).*
901 Aggregates **901.01 General**	Subsection 901.01, General, is amended by adding Department Table II-1, Recycled Concrete Aggregate Base and Subbase Gradation Requirements/Design Range Percent Passing, and accompanying notes.
901.01(a) Recycled Concrete for Pipe Bedding	Subsection 901.01, General, is further amended by adding the following new Subsection 901.01(a) Recycled Concrete for Pipe Bedding (RC 57): ***Grading of aggregate shall meet the requirements of AASHTO M43, size No. 57.***
901.01(b) Recycled Concrete for Stabilized Construction Entrance	Subsection 901.01, General, is further amended by adding the following new Subsection 901.01(b), Recycled Concrete for Stabilized Construction Entrance: ***Grading of aggregate shall meet the requirements of AASHTO M43, size No. 2.***
902 Portland Cement Concrete and Related Products **902.07.01 Burlap**	Subsection 902.07.01, Burlap, is amended to read as follows: Burlap cloth shall be made from jute or kenaf and conform to ***AASHTO*** M 182, Class 1[~~, 2, or 3~~].

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902.12 Linseed Oil	Subsection 902.12, Linseed Oil, is replaced in whole to read as follows: ***Silane Concrete Penetrating Sealer. Sealer material shall be Protectosil BH-N (Dynasylan) as manufactured by Degussa ChemTrete, or approved equal. The Department shall make any determinations as to whether a product is an equal. The water repellent used shall be solvent-free, 100 percent active isobutyltrimethoxy silane ingredient by weight. The sealer material shall not alter the appearance of the surface texture nor affect the skid resistance of the concrete surfaces. No material shall be applied to the concrete deck, sidewalk, or wearing surfaces without the approval of the Department's Engineer. The Contractor/Permittee shall submit for the Department Engineer's approval materials certification showing all testing, application specification, and manufacturer's technical data prior to the start of construction.***
903 Masonry Products **903.05 Solid Concrete Masonry Block**	Subsection 903.05, Solid Concrete Masonry Block, is amended to read as follows: Solid concrete masonry block shall conform to ***ASTM C-140*** [~~C 139~~].
904 Performance Graded Asphalt Binders and Hot Mix Asphalt **904.04.02 Mix Design**	Subsection 904.04.02, Mix Design, is amended to read as follows: The Contractor may elect to use crushed, recycled asphalt pavement (RAP) material or a maximum of 5 percent roofing shingles from manufacturing waste ***in the mix design if the mix is approved by the State Highway Administration and <u>if</u> the asphalt-plant's Quality Control Plan covering such materials (RAP/shingles) is also approved by the Department's Lab for the specific year during which the mix will be applied.*** The allowable percentage and its suitability for use shall be determined in conformance with MSMT 412. When using 15 percent or less of RAP, binder viscosity adjustments are not required. The use of RAP may be considered for applications where higher polish value aggregates are required. Approval for use will be on an individual project basis. Documentation of RAP stockpile quality and traceability shall be submitted to the Engineer for approval prior to use.

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904.04.05 Plant Control	Subsection 904.04.05, Plant Control, Table 904-A–Mix Tolerances, is amended to read as follows: The following change applies to Part III Technical Requirements, Section 904.04.05 Plant Control, Table 904-A – Mix Tolerances for "Performance Graded Asphalt Binders and Hot Mix Asphalt Superpave 12.5 MM PG 70-22" when placed on roadways with a design classification of Arterial and/or Major Collector roads. "Asphalt content, % [~~+/- 0.4~~]" shall be deleted and replaced with a new tolerance consisting of "Asphalt content, % **-0.2 % to +0.4**".
905 Pipe	Section 905, Pipe, is replaced in whole to read as follows: ***Pipe material for the construction of storm drainage systems within County rights-of-way shall be reinforced concrete. The use of other types of pipe material shall require Department approval on a case-by-case basis.*** ***All rural driveway pipe culverts placed within County rights-of-way shall be corrugated metal pipe arch (CMPA) with metal end sections or reinforced concrete pipe (RCP) with concrete end sections/ concrete headwalls as specified in Department Table I-10, Pipe Use (see Section I). The use of other pipes for driveway culverts shall be reviewed on a case by case basis by the Department's Engineer.***
908 Reinforcement Steel **908.06 Welded Deformed Steel Wire Fabric**	Subsection 908.06, Welded Deformed Steel Wire Fabric, is amended to read as follows: Welded deformed steel wire fabric shall conform to M 221. ***Fabric used in pavement or driveway construction shall be furnished in flat sheets. Rolled stock shall not be used.*** *(Underscoring has been added for emphasis.)*
912 Coating Systems for Structural Steel **912.06 Graffiti Barrier Coatings**	Section 912, Coating Systems for Structural Steel, is amended by adding the following new Subsection 912.06, Graffiti Barrier Coatings: ***To assist in the removal of graffiti, two products are approved by the Department: Permaclean and Seal-Krete.*** ***Permaclean is an aliphatic urethane resin coating available in***

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	several formulas, finishes, and colors. (Use of any color except clear requires prior approval by the Department.) It is a permanent coating able to withstand numerous cleanings without recoating. Color is to be appropriate to the setting. ***Seal-Krete is a clear waterborne polymer formula designed to be temporary and sacrificial, thereby allowing removal of graffiti by power washing. Seal-Krete requires recoating after each cleaning.*** ***The application of these products shall be done in accordance with the producers' instructions and recommendations.***
915 Production Plants **915.01.04 Measuring Devices**	Subsection 915.01.04, Measuring Devices, is amended by adding the following new paragraph immediately before the final paragraph: ***The producer's quality control section shall be responsible for maintaining a log of their monthly and daily testing, test results, and actions taken to correct problems. This log shall be available to the Department upon request.***
915.02.01 Certified Hot Mix Asphalt (HMA) Plant. Responsibilities of the HMA Producer	Subsection 915.02.01, Certified Hot Mix Asphalt (HMA) Plant Responsibilities, is amended to read as follows: **Reports.** The producer's test results shall be furnished to the Engineer on documents approved by the ***Department*** [~~Administration~~]. ***The producer's quality control section shall be responsible for maintaining a log of their testing, test results, and actions taken to correct problems. This log shall be available to the Department upon request.***
915.03 Portland Cement Concrete Plants	Subsection 915.03, Portland Cement Concrete Plants, is amended by adding the following subsection: ***915.03(a) Certification of Compliance. At the discretion of the Department's Engineer, Portland Cement concrete may be accepted on the basis of the producer's certificate of compliance. Material accepted on the basis of a producer's certification shall be certified by an officer of the producing company and submitted to the Department. The certificate shall state that all materials comply with pertinent specifications and that the mix is proportioned in accordance with the approved mix design.*** ***The producer's quality control section shall be responsible for maintaining a log of their daily testing, test results, and actions taken to correct problems. This log shall be available to the Department on demand. Although the absolute maximum number of samples or***

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	sampling frequency cannot be rigidly established, minimum values must be established. For these minimum values, use Department Table II-3, Required Minimum Testing Frequency for Concrete Materials.
915.03.03 Load Tickets	Subsection 915.03.03, Load Tickets, is replaced in whole to read as follows: ***The producer shall provide and issue in duplicate tickets for each load. Each ticket shall show the following:*** ***1. Time truck is charged (load time, leave plant time, or some indication of when water is added to cement);*** ***2. Total weight of cement, sand, and wet weight of aggregates (include mix identification);*** ***3. Quantity of any additives (especially air entrainment);*** ***4. Delivery point;*** ***5. Truck number or identification;*** ***6. Total quantity (cubic yards);*** ***7. Time arrived at delivery point; and*** ***8. Start time of pour.*** [~~The producer shall issue a completed Administration Form 116 in duplicate for each load. Distribution shall be made as specified in 915.03.05(c)(2). The producer's copy shall be readily available for inspection upon request by the Regional Engineer or his representative. Computer generated printouts may be used in lieu of the Administration's Load Ticket when approved by the Regional Engineer.~~]
915.03.04 Mixers and Agitators	Subsection 915.03.04, Mixers and Agitators, is amended by adding the following subsection: ***915.03.04(a) Truck Mixers. Each acceptable truck mixer shall comply with the following requirements:*** ***1. There shall be no accumulation of hardened concrete within the mixer drum.*** ***2. When the height of the mixer blade is less than 90 percent of the original height, the blade is excessively worn and must be replaced. The manufacturer of the mixer, through the producer, will furnish original blade dimensions upon request.*** ***3. The charging and discharging openings and chute shall be in good condition, free from accumulations of cement or concrete.***

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	4. The drum, or container, shall be of such size that the rating as a mixer (in volume or mixed concrete) does not exceed 63 percent of the gross volume of the mixer discharging blades. ***5. A plate shall be provided showing the mixer manufacturer's recommended operating speed for mixing, which must be in the range of 4 through 18 RPMs, and have a demonstrated capability to operate satisfactorily at recommended speed.*** ***6. The mixer shall be equipped with a counter in working condition to indicate the number of revolutions of the drum. Should the counter become defective, the producer shall be allotted 24 hours to make the necessary adjustments before condemnation of the mixer.*** ***7. On mixers equipped to batch, mixing water equipment shall be in proper working condition. Gauge glasses and water meters, clean and legibly graduated, water pump or injection system in good working order with nozzles unobstructed and without leakage into the mixer. Water measurement shall be spot checked and found accurate within $\pm$ 1 percent of mixing water capacity or $\pm$ 1 gallon.***
915.03.05 Certified Concrete Plant	Subsection 915.03.05, Certified Concrete Plant, is replaced in whole with the following: ***Subsection 915.03.05 Certified Concrete. At the discretion of the Department's Engineer, Portland Cement concrete may be accepted on the basis of the producer's certification and shall be certified by an officer of the production plant and submitted to the Department. The certificate shall state that all materials comply with pertinent specifications and the mix is proportioned in accordance with the approved mix design.*** ***The producer's Quality Control Section will be responsible for maintaining a log of their daily testing. This log will be available to the Department Inspector upon request. Although the absolute maximum number of samples or sampling frequency cannot be rigidly established, minimum values must be established. For these minimum values, use Department Table II-3, Required Minimum Testing Frequency for Concrete Materials.***

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916 Soil and Soil-Aggregate Borrow **916.01.01 Select Borrow**	Subsection 916.01.01, Select Borrow, is amended to read as follows: Select borrow shall conform to ***AASHTO Soil Classification System A-1,*** A-2, A-3, or A-2-4 material***, or*** as specified in the Contract Documents***, with a maximum of 30 percent passing the No. 200 sieve, a maximum of 7 P.I.*** The maximum dry density shall be a minimum of 105 lb./ft.^{3}***, as determined by AASHTO T-99***.
920 Landscaping **920.04.02 Seed Mixes**	Subsection 920.04.02, Seed Mixes, is amended by deleting Subsections 920.04.02(b), 920.04.02(d), and 920.04.02(e) in their entirety.
920.04.02(f) Wildflower Seed Mix	Subsection 920.04.02(f), Wildflower Seed Mix, is amended by adding the following text: ***Use of Wildflower Seed Mix requires prior Departmental approval.***
920.07.01 Plants	Subsection 920.07.01, Plants, is amended to read as follows: All plants, unless otherwise specifically permitted, shall conform to the standards of the current edition of "American Standard for Nursery Stock" as approved by the American Standards Institute, Inc. All plant grades shall be those established in the current edition of American Standards for Nursery Stock manual. Only one size per grade will be listed rather than a size range. The one size shall mean the minimum size for that grade and shall include plants from that size up to but not including the next larger grade size. All plants, unless otherwise specifically permitted, shall be nursery grown and shall have been grown within plant hardiness zones 5, 6, 7, or the Virginia portion of zone 8A as recorded in the current edition of "Plant Hardiness Zone Map," prepared by the U.S. National Arboretum, Agricultural Research Service, U.S. Department of Agriculture. All plant materials shall have normal, well-developed branches and a vigorous root system. They shall be healthy plants free from physical defects, plant diseases, and insect pests. Plant materials grown in fields or blocks that show evidence of containing any parts of Johnson grass or Canada thistle will be rejected. Shade and flowering trees shall be symmetrically balanced. Major branches shall not have V-shaped crotches capable of causing structural weakness. Trunks shall be free of unhealed branch removal wounds greater than a 1 in. diameter.

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	Use Department Standards 600.01 through 600.20, Section III, for plant size, spacing, and selection requirements. [~~Shade trees shall have a single main trunk. Trunks shall be free of branches below the following heights:~~ ~~Caliper (in)~~ ~~Height (ft)~~ ~~1-1/2 to 2-1/2~~ ~~5~~ ~~3~~ ~~6~~
950 Traffic Materials **950.05 Backfill Material for Trenches for Buried Cable**	Section 950.05, Backfill Material for Trenches for Buried Cable, is amended by deleting it in its entirety and replacing with the following: ***All trenching and backfilling done within the roadway limits shall be done in accordance with the* Prince George's County Policy and Specification for Utility Installation and Maintenance *(see Section IV, Appendix E).***

D. Tables

The following pages under this subhead comprise reference Tables II-1 through II-3, as cited in the previous text of Section II.

Table II-1
Recycled Concrete Aggregate Base and Subbase
Gradation Requirements/Design Range Percent Passing
Based on AASHTO Guidelines

Source: Prince George's County Department of Public Works and Transportation based on American Association of State Highway and Transportation Officials (AASHTO) guidelines.

SIEVE SIZE	BASE (%*)	TOLERANCE	SUBBASE (%*)	TOLERANCE
2 inch	100	–2	100	–3
1-1/2 inch	95–100	±5	90–100	±5
3/4 inch	70–92	±8	—	—
3/8 inch	50–70	±8	—	—
#4	35–55	±8	30–60	±10
#30	12–25	±5	—	—
#200	0–8	±3	0–12	±5

*Mass percentage passing

Notes:

1. The liquid limit and plasticity index values shall not be greater than 30 and 6, respectively.
2. Where no soil fines passing the No. 200 sieve are present, the liquid limit and plasticity index requirements will be waived.
3. The percentage of wear shall not exceed 55 when tested in accordance with AASHTO T-96.
4. When control sampled results are within the master gradation specifications, but deviate from the approved dry gradation for the sample submitted by more than the specified tolerance, the material may be rejected by the inspector.
5. The maximum percentages of nonhomogeneous substances shall not exceed the following values:

Material Type	Percent by Weight
Bituminous Concrete	6.0
Brick	2.0
Foreign Matter, Glass, Wood	0.5
Fabric, Metals, etc.	1.0

6. Currently, recycled materials are NOT acceptable for permanent applications within proposed right-of-way.

Table II-2
Required Minimum Testing Frequency for
Superpave Hot Mix Asphalt (HMA) Concrete Materials

Source: Prince George's County Department of Public Works and Transportation based on American Association of State Highway and Transportation Officials (AASHTO) guidelines.

ITEM	MATERIAL	AASHTO STANDARDS	FREQUENCY
Gradation of Aggregates	Stockpile aggregates	T-27	Per shipment
Bulk Specific Gravity	Superpave HMA gyratory specimens compacted at N_{Des}	T-312 and T-166	One set of two specimens for Superpave HMA production up to 1000 tons
Maximum Specific Gravity	Uncompacted Superpave HMA sample	T-209	One test for Superpave HMA production up to 1000 tons
Resistance to Moisture-Induced Damage	Superpave HMA gyratory specimens	T-283	One test for each 6000 tons of Superpave HMA production
Asphalt Content Using Ignition Furnace and Combined Aggregate Gradation	Uncompacted Superpave HMA sample	T-308 and T-30	One test for Superpave HMA production up to 1000 tons
Performance Grading of Asphalt	Liquid asphalt	MP-2	Per shipment

Table II-3
Required Minimum Testing Frequency for Concrete Materials

Source: Prince George's County Department of Public Works and Transportation based on American Association of State Highway and Transportation Officials (AASHTO) guidelines.

ITEM	MATERIAL	REQUIREMENTS	AASHTO STANDARDS	FREQUENCY
Grading	Coarse aggregate	Stockpile sieve analysis	M-43	Twice daily, per shipment
Grading	Fine aggregate	Stockpile sieve analysis	M-6	Twice daily, per shipment
Chemical and Physical	Cement	Lab testing	M-85	Once biweekly
Fineness	Cement	Lab testing	T-153	Once biweekly
Setting	Cement	Lab testing	T-131	Once biweekly
pH	Water	Lab testing	T-26	Every 6 months
Quality	Water	Lab testing	T-26	Every 6 months
Chloride	Water	Lab testing	ASTM D-512	Every 6 months
Various	Chemical additives	Lab testing	Per appropriate specification for chemical used	Per shipment