TOWN OF COTTAGE CITY
43RD AVENUE MAINTENANCE PROJECT,
FISCAL YEAR 2025

Town of Cottage City
3820 40th Avenue
Cottage City, Maryland 20722

RFP # CC-2025-01

Request for Proposals
Town of Cottage City Stormwater Management
RFP # CC-2025-01

Project Overview: The Town of Cottage City invites the submittal of responses to this Request for Proposals (RFP) from qualified Contractor(s)interested in providing bids for a maintenance project.

Scope of Project: This RFP is for a 3-month contract for a maintenance project within the Town of Cottage City. This project must be completed by September 30, 2025, due to funding deadlines. Town Elected Officials will participate in the process of selecting the appropriate contractor. (See document (Specifications Ver. 3.0 (March 2020) and bid sheet) prepared by CPJ, Civil Engineers)

Confidentiality: Vendors must treat any designated documents and information provided by the Town as confidential. The Town will treat all proposals received and the information contained therein as confidential until a negotiated contract is executed, or all proposals are rejected.

Public Statement: No vendor shall make any public statement about this RFP without prior written consent from the Town.

General Conditions: The following general conditions apply:

- The Town may not necessarily accept the lowest cost proposal but will strive to select the best and most responsive proposal.
- The Town may cancel this RFP or amend its contents at any time before acceptance of a proposal.
- If no proposal is acceptable, then the Town may either re-issue the request for proposal or negotiate with one or more vendors for a satisfactory offer.
- The award of a proposal shall not be deemed final unless and until a contract is successfully negotiated and approved by Town.

- The project is funded with CDBG dollars and the contract will be subject to appliable Federal requirements and County environmental review.
- This project is subject to Davis-Bacon wage requirements.

Compensation: Each applicant must state the compensation that will be required for the services of the applicant and must specify the minimum time increments for billing. Itemized bills, including the subject matter, date, time, and description of service shall be submitted monthly. Billing for services shall be explained in detail, including all support services and costs incurred.

Submission Requirements: Each bidder will provide a title page (project title, proposer's contact information, & total costs of proposal) and Engineer's Cost Estimate for: Cottage City 43rd Avenue Maintenance Project - Bid Sheet.

Insurance: The bidder must obtain at its own cost and expense and keep in force and effect during the term of the contract, including all extensions and renewals, the insurance specified below, with an insurance company licensed or qualified to do business in the state of Maryland. A certificate of insurance must be submitted to the Town prior to the commencement of any work under the contract and prior to any contract modification extending the term of the contract as evidence of compliance with this provision. The Town of Cottage City must be named as an additional insured on all liability policies. A minimum of thirty (30) days written notice to the Town of cancellation or material change in any of the policies is required. In no event may the insurance coverage be less than that shown below, unless the requirements of this section are waived, in whole or in part, in writing by the Town Manager.

Coverage Amount or Limits: Workers Compensation: Bodily injury by Accident (each) $100,000, Disease (policy limits) $500,000, Disease (each employee), $100,000. Commercial General Liability: $500,000 (Minimum combined single limit for bodily injury and property damage per occurrence, including contractual liability, premises and operations, and independent contractors.) Minimum

Automobile Liability (Including owned, hired, and non-owned automobiles): Bodily injury, each person $250,000, Bodily injury, each occurrence $500,000, Property damage, each occurrence $300,000. Professional Liability: $1,000,000 for errors, omissions, and negligent acts, per claim and Aggregate, Professional Liability (for professional services contracts): $1,000,000.00 (For errors, omission, and negligent acts, per claim and Aggregate, with one-year discovery period and a maximum deductible of $25,000).

Traffic & Pedestrian Safety: The Contractor will provide barriers, warnings signs and alternative pedestrian access around active work zones where applicable.

Client References: Each bidder-applicant and each subcontractor (if applicable) shall have performed similar work for a minimum period of five (5) years. Each applicant and each subcontractor (if applicable) must provide a minimum of three (3) clients and references that can substantiate past work performance and experience in the type of work required for this contract. For each reference provide company name, contact name, email addresses, phone numbers, and description of work performed. The Town may make such investigations as it deems necessary to determine the ability of the bidder to perform the work.

Rejection of Submissions: The Town reserves the right to do the following: reject any or all submissions, waive informalities and irregularities in the submissions received, and accept any portion of any submission if deemed in the best interest of the Town.

Incurring Cost: The Town will not be liable for any cost incurred by entities or proposers prior to executing a contract or purchase order.

Anti-Lobbying Provision: Vendors must indicate through written promise within the proposal cover letter that Proposer's officers, employees, agents, consultants, or lobbyists will not attempt to lobby or influence a vote or recommendation

related to the Vendor's proposal submitted in response to this RFP; directly or indirectly, through any contact with Town Commissioner or other Town officials between the date that the request is sent out and the date the contract resulting here from is awarded by the Board of Town Commissioners. Such behavior may be an immediate cause for rejection of the Vendor's proposal.

Point of Contact: John Hoatson, Town Manager, can be reached at 240-544-8725 or Email: Townmanager@cottagecitymd.gov with any questions.

Question Deadline: If you have questions, please submit them by May 23, 2025

Submission Deadline: Responses to this RFP are to be submitted **NO LATER THAN Friday, June 13, 2025,** at 5 p.m.

By Mail: Town of Cottage City, 3820 40th Avenue Cottage City, Maryland 20722

By Email: townmanager@cottagecitymd.gov

In-Person: Cottage City Town Hall, 3820 40th Avenue Cottage City, Maryland 20722

Selection Process and Criteria: Town Elected Officials will participate in the process of selecting the appropriate firm.

Thank you for your interest in this Request for Proposals for the Town of Cottage City.

COTTAGE CITY MAINTENANCE PROJECT

TABLE OF CONTENTS

SECTIONS:
602 CURB, COMBINATION CURB AND GUTTER, AND MONOLITHIC MEDIAN
603 SIDEWALKS
611 DETECTABLE WARNING SURFACE

CATEGORY 700 – LANDSCAPING (MSHA-BASED)

SECTIONS:
705 TURFGRASS ESTABLISHMENT

CATEGORY 900 – MATERIALS (MSHA-BASED)

AMENDED SECTIONS:
901 AGGREGATES

CATEGORY 1000 – GENERAL (NON MSHA-BASED)

SECTIONS:
1000 UTILITIES
1007 CERTIFIED TESTING AND INSPECTION SERVICES
1012 GRAVEL FILTER MEDIA
1024 SITE ACCESS CONTROL

CATEGORY 2000 – ALLOWANCES

SECTIONS:
2001 GENERAL ALLOWANCE

CATEGORY 000 – GENERAL REQUIREMENTS, REFERENCES, AND SPECIFICATIONS

A. SUMMARY DESCRIPTION OF WORK

Prince George's County intends to enter into a Unit Price Project with a qualified firm to provide construction and construction-related services including but not limited to the construction, repair, retrofit, alteration and modernization for:

43th Avenue Maintenance: The project consists of the maintenance repair of 43rd Avenue and the existing 15' alley off 43th Avenue. Work includes but is not limited to mill and overlay of the existing street , replacing commercial entrance and sidewalk, removing and replacing existing asphalt alley with asphalt and concrete, removing and installing curb, and installing trench drain and connection to existing storm drain, and installing concrete driveway entrances. The limits of work are outlined on the construction plan.

The Contractor must provide the Work in accordance with all permits, and their requirements, provided by the Owner for the Projects in the Project; the permits are part of the Project Documents. The Contractor must obtain, and provide the Work in accordance with, all other permits required by law as necessary to complete the Work. The Contractor must schedule all required meetings and inspections with, and obtain required approvals from, the Regulatory Agencies administering each permit.

The Work is not considered complete until the Prince George's DPIE Right-of-Way Inspector has released the Right-of-Way permit (as applicable).

Additionally, the Contractor must obtain required approval signatures, as the inspections are completed, on any Construction Inspection Check-off List provided in the Project Documents. See Section 308 for additional Contractor responsibilities related to the Erosion and Sediment Control permit(s).

The Contractor shall ensure the quality of work by employing qualified, experienced personnel, trained in environmental restoration and sediment control measures. The contractor will provide all necessary management, supervision, personnel, labor, tools, materials, and equipment for each of the Unit Prices bid. This is the means of payment, and is intended to be the price inclusive of all Contractor costs.

B. REFERENCED STANDARDS AND SPECIFICATIONS

The following specifications and standards, including addenda, amendments and errata, form a part of this specification to the extent required by the references thereto. The Contractor must adhere to any newer versions of the referenced standards and specifications. The list below is the most frequently used standards that are referenced but other references may be referenced in the standard specifications.

American Association of State Highway and Transportation Officials (AASHTO). Washington D.C. <http://www.transportation.org/>. Referenced as “AASHTO”.

American Concrete Institute (ACI), Farmington Hills, Michigan. <http://www.concrete.org/general/home.asp>. Referenced as “ACI”.

- ACI-318-11 – “Building Code Requirements for Reinforced Concrete”.
- ACI-350-06 – “Code Requirements for Environmental Engineering Concrete Structures and Commentary”.
- ACI SP-66-04 – “ACI Detailing Manual”. This standard replaced ACI 315-92.

American National Standards Institute (ANSI), Washington D.C.

- A300 – “American National Standard for Pruning”, 2017.
- Z60.1 – “American Standard for Nursery Stock”, 2014.

American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), “Standard Methods for the Examination of Water and Wastewater”. Washington D.C. 2017, 23nd Edition. < http://www.standardmethods.org/>. Referenced as “Standard Methods for the Examination of Water and Wastewater”.

American Society of Testing and Materials International, Standards Worldwide. West Conshohocken, PA. <http://www.astm.org/Standard/index.shtml>, Referenced as “ASTM”.

Concrete Reinforcing Steel Institute (CRSI). Schaumburg, Illinois. <http://www.crsi.org/>. Referenced as “CRSI”

- CRSI “Manual of Standard Practice 2018”, 29th edition.
- CRSI “Placing Reinforcing Bars 2019”, 10th edition,

International Code Council (ICC), International Building Code (IBC) as adopted by Prince George’s County. Washington D.C. <http://www.iccsafe.org/>. Referenced as “International Building Code”

Maryland Department of the Environment (MDE), Water Management Administration in association with Soil Conservation Service and State Soil Conservation Committee, “2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control”. Baltimore, Maryland. 2011. Referenced as “MDE Specifications for Soil Erosion and Sediment Control”.

Maryland Department of Environment, Water Resources Administration, “Maryland’s Guidelines to Waterway Construction”, Baltimore, Maryland. November 2000 revision. Referenced as “MDE Construction Guidelines”.

Maryland Department of Transportation (MDOT), State Highway Administration (MSHA), Hanover, Maryland. <http://www.roads.maryland.gov/home.aspx/>. As revised on MSHA website. Referenced as “MSHA”.

- “Book of Standards for Highway and Incidental Structures”. Referenced as “MSHA Standard Details”.

- "Standard Specifications for Construction and Materials", July, 2024. Referenced as "MSHA Standard Specifications" or "MSHA".

Prince George's County Department of Public Works and Transportation (DPW&T) and Department of Permitting, inspections and Enforcement (DPIE), Largo, Maryland.

- "Specifications and Standards for Roadways and Bridges"; < https://dev.princegeorgescountymd.gov/sites/default/files/media-document/dcv4789_dpwt-specifications-and-standards-for-roadways-and-bridges-pdf.pdf>
- "Applicable Codes", < https://www.princegeorgescountymd.gov/departments-offices/permitting-inspections-and-enforcement/plan-review/siteroad-plan-review/applicable-codes>.
- Maryland Manual on Uniform Traffic Control Devices (MD-MUTCD)", 2011.

Prince George's County Government, Noise Level and Noise Disturbance Standards for Construction Ordinance.
https://library.municode.com/md/prince_george's_county/codes/code_of_ordinances?nodeId=PTIITI17PULOLAPRGECOMA_SUBTITLE_19PO_DIV2NOCO_S19-122.01NOLENODISTCO

National Asphalt Pavement Association (NAPA), Greenbelt, Maryland.
<http://www.asphaltpavement.org/>.

- "Design, Construction and Maintenance Guide for Porous Asphalt Pavements for Stormwater Management," Information Series No. 131, 2008.

- "Design, Construction, and Maintenance of Open-Graded Friction Courses", Information Series 115, 2002.

NSF International, "NSF/ANSI Standard 61-2019" (NSF 61). Ann Arbor, Michigan.
<http://www.nsf.org/>.

United States Department of Agriculture, Natural Resources Conservation Service (NRCS), Maryland, "Conservation Practice Standard, Pond, Code 378", January 2000. Washington D.C. Referenced as "NRCS MD-378".

United States Department of Agriculture (USDA), United States Composting Council (USCC),

"Test Methods for the Examination of Composting and Composts (TMECC)". Washington D.C. 2002.

United States Department of Justice (USDJ), American Disabilities Act (ADA), "ADA Standards for Accessible Design". Washington D.C. 2010. <http://www.ada.gov/>

United States General Services Administration, "Index of Federal Specifications, Standards and Commercial Item Descriptions (FMR 102-27)". Washington D.C.
<http://apps.fas.gsa.gov/pub/fedspecs/>. Referenced as "Federal Specifications"

United States Occupational Safety and Health Administration (OSHA), "Confined Spaces Standard, 2015". Washington D.C. <http://www.osha.gov>.

Washington Suburban Sanitary Commission (WSSC). Laurel, Maryland. http://www.wsscwater.com/

- "General Conditions and Standard Specifications", 2019. Referenced as "WSSC General
- Conditions and Standard Specifications".
- "Standard Details for Construction", 2016. Referenced as "WSSC Standard Details".

REMAINDER OF PAGE INTENTIONALLY LEFT BLANK

C. SPECIFICATIONS/SCOPE OF WORK: NOTE: The specification sections are organized as per Bid Items listed in the Schedule of Unit Prices (listed in Section C).

Where applicable, items are cross-referenced to, and incorporate, information and requirements provided in the Part III – Technical Requirements of the Maryland State Highway Administration (MSHA) July 2024 Standard Specifications for Construction and Materials and the MSHA Book of Standards, latest revision.

The link to the Specifications is:
https://roads.maryland.gov/ohd2/2024_Standard_Specifications_for_Construction_and_Materials.pdf

Note: The General Provisions and Terms and Conditions of the MSHA Standard Specifications for Construction and Materials **DO NOT APPLY** to, and are not incorporated into, this Contract or Project. Refer to the terms and conditions of this Contract or Project including the General Conditions of Construction Contract.

Any references in the Specifications to the “Administration” shall be interpreted as referring to “Prince George’s County, Maryland”.

Any references in the Specifications shall be interpreted as referring to the “Contract Administrator” as defined in the Contract.

Any references in the Specifications to the “MDE” shall be interpreted as referring to the “MDE and Prince George’s County DPIE” as applicable. However, any such changing shall not be to the exclusion of any required MDE reviews.

Any references in the Specifications to material testing by the Engineer shall be deemed to be the Contractor’s responsibility. Contractor must utilize the services of accredited material testing laboratories that are acceptable to the Contract Administrator. All field and laboratory testing required by the Contract must be performed by qualified professionals who are licensed to perform such tests. The results of all material tests must be submitted to the Contract Administrator promptly and before requesting payment for the Work being tested for compliance.

Any reference to “Contract Documents” in the Specifications shall be interpreted as referring to “Project Documents and/or Contract Documents”.

CATEGORY 100 – PRELIMINARY (MSHA-BASED)

GENERAL NOTE: The referenced MSHA Sections and Subsections apply unless noted otherwise elsewhere in the Contract Documents. In case of conflict between MSHA specifications and other Contract Documents, the requirements of the other Contract Documents shall apply.

SECTION 101 – CLEARING AND GRUBBING

Line Item 101-01: Clearing and Grubbing (LS)

DESCRIPTION:

Comply with Subsection 101.01 of MSHA unless noted otherwise on Project Documents. This work consists of clearing and grubbing within the limits specified in the Project Documents. Clearing includes removing and disposing of all trees, brush, shrubs, vegetation, rotten wood, rubbish, fences and structures in construction area for removal and disposal, and trimming and disposal of tree limbs that interfere with performance of the Work. Grubbing covers removal and disposal of all stumps, roots, stubs, brush and debris within Limits of Disturbances specified in the Project Documents.

Provide protection for trees designated to be protected on the Project Documents. If any tree, greater than 6 inches in diameter, is not explicitly shown to be removed in the Project Documents, Owner approval must be obtained prior to the removal of that tree.

MATERIALS:

Not applicable.

CONSTRUCTION:

Comply with Subsection 101.03 of MSHA unless noted otherwise on Contract Documents.

1. For all sites that are subject to an approved Forest Conservation Plan, the Contractor must schedule an inspection by, and obtain approval from, M-NCPPC prior to any land disturbing activities (including clearing, stripping, and grading). Notice must be provided at least 2 business days prior to the start of any such activities.

2. Erosion and sediment control measures and tree protection devices must be in place prior to mass clearing and grubbing operations.

3. Vegetation: The Contractor must mark (do not use paint) the clearing limits including any trees, shrubbery, and plants that are to be removed, as well as those that are to remain and be protected, prior to work. The Owner and other appropriate regulatory agencies must review and approve the clearing limits. The Contractor must protect the marked items from any damage. Branches and exposed roots of trees overhanging and interfering with the Work must not be cut without the Owner's prior approval. All trimming must be done under the field supervision of a tree expert furnished by the Contractor and licensed by the State of Maryland, including trimming of trees by the Contractor for any other reason. Trimming, and/or repair of cuts and scars must be properly bandaged (Referenced Standards: American National Standard Institute (ANSI), "American National Standard for Pruning.")

4. If any tree is specifically indicated to be felled on the Project Drawings, that tree shall be felled and compensated in accordance with Section 714 of MSHA.

5. If the Contractor determines that any tree (not designated to be felled on the Project Documents) needs to be felled due to exceptional size and/or requiring technical removal, due to risk to nearby infrastructure or personal property, the Contractor must submit a written request to the Owner with the recommendations of a Maryland Registered Tree Expert that tree should be felled. Upon Owner approval, that tree shall be felled and compensated in accordance with Section 714 of MSHA.

6. Grubbing:

    a. All embedded stumps and roots must be removed to a depth of not less than 3 feet below the subgrade or slope surfaces. Depressions made below the subgrade or slope surfaces by removal of stumps must be refilled with soil or as specified on Project Documents.
    b. In the area of a dam embankment, all embedded stumps and roots must be completely removed on the embankment or beneath the embankment subgrade. Depressions made below the subgrade or embankment surfaces by removal of stumps must be refilled with materials suitable for dam embankment construction, and compacted in accordance with USDA, Natural Resources Conservation Services, “Code MD-378” requirements, hereinafter referenced as MD-378. The embankment material must be overlaid with 6” of top soil, seeded, and mulched. The final grade must match the adjacent grades.
    c. Disposal: Unless designated for reuse on the Contract Documents, material and debris collected as a result of the clearing and grubbing operation is the property of the Contractor and must disposed of in accordance with the local and state regulations. No burning will be permitted within the Work Site or on County properties. Disposal of wood to the general public can be made so long as the wood piles do not interfere with the Work.

7. Fallen and storm-damaged trees: Removal of all fallen and/or storm-damaged trees, regardless of size, shall be cleared and removed per this Clearing and Grubbing Section.

MEASUREMENT AND PAYMENT:

Comply with Subsection 101.04 of MSHA unless noted otherwise on Project Documents.

Clearing and Grubbing will not be measured but will be paid for at the Project lump sum price. The payment will be full compensation for all Clearing and Grubbing including tree and brush removal, the removal and disposal of fences, selective tree trimming and scar repair, repair or replacement of damaged trees, restoration measures for damaged or destroyed protected resources, repair to other damaged properties, and for all material, labor, equipment, tools, and incidentals necessary to complete the work.

SECTION 104 – MAINTENANCE OF TRAFFIC

- Comply with MSHA Subsection 104.00 unless noted otherwise on Contract Documents.

Line Item 104-01: Maintenance of Traffic (LS)

The work involved in the construction of this Contract shall be handled in a manner which will cause the minimum interruption to pedestrian and vehicular traffic through the areas of the proposed work in accordance with Section 104, and the MUTCD, latest edition. All Maintenance of Traffic will be a subsidiary obligation of this Contract. The Contractor shall maintain lights and barricades at each location of work until such time as the concrete has cured and is ready to be used, or the hazard otherwise marked has been removed.

The Engineer may, whenever traffic conditions make it possible, permit the Contractor to close the roads or portions thereof to traffic.

Where traffic conditions make it impossible to close the road to traffic, the Contractor shall provide at least two (2) competent, courteous and neat flagmen for use at all times. These flagmen shall be equipped with safety vests. Additional flagmen shall be provided by the Contractor at intersections and other points where traffic conditions, in the opinion of the Engineer, makes flagmen necessary.

The Contractor shall provide and erect all necessary barricades, arrow boards, lights and warning signs, all in accordance with the latest edition of the "Manual on Uniform Traffic Control Devices."

On streets and roads where there is on-street parking, the Contractor shall post notices forty eight (48) hours in advance that the streets are to be surfaced or that the concrete will be replaced and parking will be prohibited. The signs, to serve as advance notices, will be furnished by the Engineer at no cost to the Contractor. Removal of vehicles in the way of the Contractor's work operation will be the responsibility of the Contractor.

On arterial, collector, or other roads as directed by the Engineer, the Contractor shall suspend operations during the morning rush hours of 6:00 AM to 9:00 AM, and the evening rush hours of 3:00 PM to 6:30 PM.

Except for the bid items specified and provided for elsewhere in this proposal, the cost of maintaining traffic, as noted above, shall be considered a subsidiary obligation of the Contract for which no additional payment will be made.

DESCRIPTION:

Comply with MSHA Subsections listed above unless noted otherwise on Contract Documents. Work shall be performed in accordance with MSHA and/or PG-DPW&T requirements; whichever is applicable.

MATERIALS:

Comply with MSHA Subsections listed above unless noted otherwise on Contract Documents.

CONSTRUCTION:

Comply with MSHA Subsections listed above unless noted otherwise on Contract Documents.

MEASUREMENT AND PAYMENT:

Maintenance of Traffic will not be measured but will be paid for at the Project lump sum price.

SECTION 107 – CONSTRUCTION STAKEOUT

Line Item 107-01: Construction Stakeout (LS)

DESCRIPTION:

Comply with Subsection 107.01 of MSHA unless noted otherwise on Contract Documents. This work consists of providing a construction layout (stakeout) performed by a licensed surveyor currently registered in the State of Maryland. Also see Article 5.6.2, Construction Stakeout, in the General Conditions of Construction Contract.

Note: In addition to the items listed below to be provided by a licensed surveyor, the Contractor must provide construction stakeout as incidental to all related construction work. The Contractor must use competent personnel and appropriate equipment for all work required to set and maintain the elevations and dimensions as specified in the Contract Documents. This stakeout must be installed to the satisfaction of all appropriate permit inspectors before any operation commences. If any discrepancies between plan and field conditions are found, the Contractor must resolve any needed field adjustments with the Owner before starting construction.

MATERIALS:

Comply with Subsection 107.02 of MSHA unless noted otherwise on Contract Documents. The surveyor must use marker materials that can be maintained by the Contractor during the course of construction.

CONSTRUCTION:

Comply with Subsection 107.03 of MSHA unless noted otherwise on Contract Documents.

The Contractor must have the licensed surveyor provide the following:

1. Project Layout: The Contractor's surveyor shall accurately locate the Work horizontally and vertically – to ensure that the Work is performed in accordance with the Contract and Project Documents.

2. Baseline Stakeout

    a. A licensed surveyor must stakeout all construction baselines with the maximum spacing of stations (stakes, nails, crosses, etc.) of 100 feet unless closer stakeouts are specified in the Project Documents.

3. Site Stakeout

    a. Right-of-Way and Easement Lines: Where required by the Contract Documents, the Contractor must have a surveyor define right-of-way and easement lines of the project for adjacent property owners.
    b. The Contractor must perform a surveyed stake out of any alignment centerlines (e.g., embankments or stream) and structure locations.

4. As-built survey

    a. An as-built survey of the completed Work shall be performed and shall include but not limited to: horizontal dimensions, grading limits, elevations, slopes, types/length/height of

restoration features, and any new pipes, structures, profiles or typical details. The as-built survey shall include a final as-built topographic survey for all grading and stream measures; a final as-built survey of all storm drain and sewer structures must also be performed for inverts and distances.

b. See Section 121 for submission of as-built survey information with red-lined drawings.

5. Equipment and Personnel: Where a licensed surveyor is required, the surveyor must be currently registered in the State of Maryland.

6. Control Markers: The Contractor must preserve the center line and bench marks set by the surveyor. When the center line and bench marks are disturbed or destroyed, they must be replaced by the Contractor at no additional cost to the County.

7. Control Stakes: For construction baselines, the surveyor must furnish and set stakes at each station as shown on the Contract Documents or offset along one side of the project as site conditions require and per the County's approval. As applicable, each of these stakes must be marked with its offset distance from the center line along with key reference elevation(s) needed for proper construction. Maintenance of surveyor stakes and additional stakes needed for the horizontal and vertical controls necessary for the correct layout of the work must be provided by the Contractor at no additional cost to the County.

8. Utilities: When applicable, the Contractor must furnish to the utility companies or agencies working within the limits of the project, reference information related to control points, alignment and grade data. These must be furnished promptly upon request, so that the utility companies may properly locate and coordinate their work related to the project.

MEASUREMENT AND PAYMENT:

Comply with Subsection 107.04 of MSHA unless noted otherwise on Contract Documents.

All other stakeout maintenance and flagging of clearing limits, wetlands, etc., shall be incidental to, and included in this line item.

SECTION 108 – MOBILIZATION AND DEMOBILIZATION

Line Item 108-01: Mobilization and Demobilization (LS)

DESCRIPTION:

Comply with Subsection 108.01 of MSHA unless noted otherwise on Contract Documents.

MATERIALS:

Comply with Subsection 108.02 of MSHA unless noted otherwise on Contract Documents.

CONSTRUCTION:

Comply with Subsection 108.03 of MSHA unless noted otherwise on Contract Documents.

MEASUREMENT AND PAYMENT:

Comply with Subsection 108.04 of MSHA unless noted otherwise on Contract Documents.

SECTION 109 – CPM PROJECT SCHEDULE

Line Item 109-01: Critical Path Method Project Schedule (LS)

DESCRIPTION:

Comply with Subsection 109.01 of MSHA unless noted otherwise on Contract Documents. Comply with Article 11 of the General Conditions of Construction Contract. In case of conflict, the General Conditions' requirements shall control.

MATERIALS:

Not applicable.

CONSTRUCTION:

Comply with Subsection 109.03 of MSHA unless noted otherwise on Contract Documents.

MEASUREMENT AND PAYMENT:

Comply with Subsection 109.04 of MSHA unless noted otherwise on Contract Documents.

SECTION 121 – REDLINED CONSTRUCTION DRAWINGS

DESCRIPTION:

This work consists of the Contractor's maintenance and submission of a set of a full-size, redlined Construction Drawings to record any changes to the Work that have occurred during construction. The redlined drawings must be kept on-site and must be available to the Engineer and Owner throughout Project implementation. The drawings must be updated, at a minimum, for each bi-weekly construction progress meeting.

MATERIALS:

At minimum, a full-size set of Construction Drawings with legible redlined edits indicating any modifications or in-field adjustments made to the Project by the Contractor during construction. Redlined drawings must be provided to the Engineer at the time of Project Substantial Completion.

METHODS:

The Contractor shall provide redlined edits to Construction Drawings to reflect any modifications to the plans. Any proposed plan modifications must receive prior approval by the Owner before construction and subsequent redline edits. One set of redlined Construction Drawings must be maintained and kept on-site at all times. Any deviations from approved plans must be marked, in red, on the redlined Construction Drawings.

Redlined information for the project shall consist of any deviation to the approved plan including but not limited to: grading limits, elevations, slopes, types/length/height of restoration features, and any modifications to pipes, structures, profiles or typical details. Redlined Construction Drawings require a final as-built topographic survey for all grading and stream measures; a final as-built survey of all storm drain and sewer structures must also be performed for inverts and distances.

The Contractor is required to maintain current "as-built" (red-lined) Record Drawings throughout the life of the Project. At each dimension on each Record Drawing, the Contractor shall either check (√) the design dimension as an actual dimension, or cross out the design dimension and provide the actual dimension. Marks shall be made using red pencil or pen.

Redlined drawings also include as-built planting plans required by Category 700.

At Substantial Completion of the Work, the Contractor must submit legible redlined Construction Drawings, including results of the final as-built survey, to the Engineer for approval. Any missing, erroneous, or incomplete information shall be re-surveyed within 72 hours of Engineer's request at no additional cost. Retainage shall not be released until redlined Construction Drawings, including the final survey, are approved. The costs for stakeout, survey and maintenance of redlined information shall be considered incidental to the work and no specific payments will be made.

MEASUREMENT AND PAYMENT:

Cost is incidental to other cost line items and Sections.

SECTION 122 – CONTRACTOR KEY PERSONNEL REQUIREMENTS

DESCRIPTION:

This Section provides minimum requirements for the Contractor's key personnel on the Project – the Project Manager and Superintendent. The full requirements for the Project Manager and Superintendent shall be to provide adequate management and supervision to ensure performance of the Work in accordance with the Contract and/or Project.

SUBMITTALS:

Within ten (10) days of Notice to Proceed, the Contractor must submit resumes of its Project Manager and Superintendent to the Owner and Engineering Consultant for approval in accordance with Subsections 5.4.2 and 9.1.2.4 of the General Conditions of Construction Contract. The resumes must be current and must reflect experience relevant to the Work.

REQUIREMENTS:

The Project Manager:

- Is an experienced and knowledgeable person designated as such by the Contractor, and approved by the Owner, having authority to act on behalf of the Contractor with respect to all aspects of the Project and to whom the Superintendent reports;
- Must attend all bi-weekly progress meetings at the site;
- Must attend other meetings scheduled by the Owner or Engineering Consultant needed to progress the work;
- Must submit the Contractor's Requests for Substantial and Final Completion in accordance with Article 14 of the General Conditions of Construction Contract;
- Must be fluent in written and spoken English;
- Must respond, on behalf of the Contractor, to all Project correspondence from the Owner and/or Engineering Consultant;
- Must coordinate with the Superintendent regularly in order to adequately progressing the Work;
- Must coordinate the Contractor's approval, record keeping, and timely processing of Shop Drawings, Product Data, Samples, and other Submittals;
- Must submit Project Schedules on behalf of the Contractor;
- Must approve Requisitions for Payments on behalf of the Contractor, prior to submittal; and
- Must process Change Proposals and Change Documents in an accurate and timely manner.

The Superintendent:

- Is an experienced and knowledgeable person designated as such by the Contractor, and approved by the Owner, who serves as the Contractor's representative at the Site with overall responsibility for direction, execution and quality of the Work (including any Subcontractor's, Sub-subcontractor's or Supplier's work) and, unless otherwise designated by the Contractor, for the protection of persons and property at and adjacent to the Site and compliance with all applicable Laws and Regulations;
- Must be in attendance and performing his/her duties at the Site at all times during the performance of the Work or any other operations by the Contractor (including any operations by Subcontractors, Sub-subcontractors or Suppliers) until issuance of the Certificate of Substantial

Completion and for such additional time thereafter as necessary for completion of Punch List work.

- Unless approved otherwise by the Owner, must serve as the Safety Officer and must have completed, as a minimum, the OSHA 30-hour Construction Training program;
- As Safety officer, must maintain a full-time presence on the Site and must: ensure conformance to OSHA and MOSH requirements, facilitate the prevention of accidents, and must maintain safety programs, precautions and procedures;
- Must have a Certificate of Attendance at a Maryland Department of the Environment approved training program for the control of sediment and erosion. The Owner may request proof of this Certification at any time;
- Must oversee the work of all Subcontractors, Sub-subcontractors and Suppliers at the Site;
- Must oversee the quality of all installed work to ensure that it is in compliance with the Project Documents and approved Shop Drawings; this includes but is not limited to: approving material tickets for material delivered to the site, ensuring that testing and inspections occurs when required, and reviewing quality of installed work;
- Must attend all bi-weekly progress meetings at the Site;
- Must attend all Pre-Construction meetings;
- Must provide full Site access and assistance to agents of regulatory agencies;
- Must coordinate with Utilities as necessary for completion of the Work;
- Must attend other meetings scheduled by the Owner or Engineering Consultant needed to progress the work;
- Must be fluent in written and spoken English;
- Must maintain Daily Records of Work performed by the Contractor at the Site, on a form approved by the Owner, and submit these Daily reports regularly to the Owner (each week or more frequently);
- Must perform all Work measurements and related activities including bookkeeping, and coordinate same with the Owner's representative, to ensure true and accurate quantities for billing purposes;
- Must maintain current copies of all Project Documents at the Site;
- Must maintain approved copies of all Shop Drawings, Product Data, Samples, and other Submittals at the Site; and
- Must maintain redlined drawings in accordance with Section 121.

MEASUREMENT AND PAYMENT:

Cost is incidental to other cost line items and Sections.

CATEGORY 200 – GRADING (MSHA-BASED)

GENERAL NOTE: The referenced MSHA Sections and Subsections apply unless noted otherwise elsewhere in the Contract Documents. In case of conflict between MSHA specifications and other Contract Documents, the requirements of the other Contract Documents shall apply.

General Description: Work consists of all labor, materials, equipment, dewatering, sheeting and shoring, and services necessary for and incidental to the execution and completion of Grading (Earthwork), as indicated on the Contract Documents and specified herein. The extent of excavation, filling, and grading is shown in the Contract Documents. Preparation of subgrade for slabs and pavements is part of this Work. Backfilling required to establish proposed grade around facilities such as structures, curbs, pavements etc. is included as part of this Work.

All borrow sites and off-site disposal sites utilized by the Contractor to perform work under this Contract must have all necessary State and County permits. The Contactor must identify these sites and provide a copy of appropriate permit(s) to the Owner prior to starting work.

Note: Excavation and backfilling of native material incidental to the installation of in-stream structures and concrete structures should be included as incidental to the Unit Costs for those items provided in these specifications.

Existing Utilities:

1. Notify “Miss Utility” a minimum of 48 hours prior to performing earthwork by calling 1-800-257-7777. Locate existing underground utilities in the areas of work. If utilities are to remain in place, provide adequate means of protection during earthwork operations. The Contractor must repair any Contractor damage to utilities shown on the Drawings or identified in the field. All utility work must be done in accordance with specific utility requirements including the use of utility-approved contractors and/or inspectors as appropriate; all costs for utility requirements shall be borne by the Contractor.

2. Should piping or other utilities (not shown on the Drawings) be encountered during excavation, stop work in that area and consult the Owner immediately for direction. Cooperate with the County and utility companies in keeping respective services and facilities in operation. Repair any Contractor-damaged utilities to satisfaction of utility company.

3. Do not interrupt existing utilities serving occupied facilities, except when permitted in writing by the Owner, and only after acceptable temporary utility services have been provided.

General Execution Requirements:

1. Use of Explosives: The use of explosives is prohibited unless authorized in writing by the Owner.

2. Protection:

    a. Safety: Provide protective measures necessary for the safety of the workers, public, and adjacent property. Prevent cave-ins, collapse of walls, structures and slopes, both on and adjacent to the site.

    b. Standards: Comply with regulations of local authorities having jurisdiction, including all applicable OSHA and MOSH requirements.

c. Repair: Remove damaged materials and replace with new materials (as required by the Contract Documents) where such materials are affected by settlement or other damage caused by improper earthwork.

SECTION 203 – BORROW (FILL)

Line Item 203-01: Earth Fill (Contingency) (LS)

DESCRIPTION:

Comply with Subsection 203.01 of MSHA unless noted otherwise on Contract Documents.

The work consists of the provision and placement of earth fill material. Fill is material, described below, placed above an existing or interim grade required by the Contract Documents. Backfill directly adjacent to in-stream restoration structures are incidental to those items.

MATERIALS:

Comply with Subsection 203.02 of MSHA unless noted otherwise on Contract Documents.

Fill material must conform to MSHA Section 916. Streambed material must consist of the coarser segment of streambed sands and gravels as identified in the field by the Owner. The Contractor must provide the proper care of excavated material including protection against contamination, moisture and other undesirable effects.

CONSTRUCTION:

Comply with Subsection 203.03 of MSHA unless noted otherwise on Contract Documents.

Placement must be in accordance with MSHA Section 204 for embankment and subgrade fills, and MSHA Section 210.03 for tamped fills. Fill materials must be placed in maximum lifts of 8” around structures and 12” for embankment and other fills unless specified otherwise in the Contract Documents. Compaction of fill materials must be to 95% of the laboratory density as determined by AASHTO method T-99 (Standard Proctor) unless specified otherwise in the Contract Documents.

Backfill adjacent to pipes and structures associated with pond embankments must be of the type and quality conforming to that for adjoining fill. The fill must be placed in horizontal layers not to exceed 4 inches in thickness and compacted by hand tampers. The fill material must fill completely all voids under and adjacent to pipes and structures. Equipment must not be driven over any part of concrete structure or pipe unless there is compacted fill of 24 inches or more over the structure or pipe.

Test Report Submittals:

Where the Contract Documents specify a subgrade to an embankment, pavement or structure, submit two copies of the following reports directly to the Engineering Consultant from the testing service, with a single copy to the Owner. Reports must be submitted at least every week.

1. Verification of each footing subgrade.

2. Field density test reports.

3. One optimum moisture-maximum density curve for each type of soil encountered.

4. Report of actual unconfined compressive strength and/or results of bearing tests of each stratum tested.

Minimum Requirements:

1. Cohesionless materials must be classified in accordance with AASHTO guidelines as either A-3 (sand) or A-2 (sand and fines), and the minimum dry unit weight must not be less that 110 PCF maximum dry density as determined by ASTM D-698 or ASTM D-4253.

2. Cohesive materials must be classified in accordance with AASHTO guidelines as either A-4 (silt), A-5 (silt), A-6 (clay) or A-7 (clay). The minimum dry unit weight must not be less than 105 PCF maximum dry density as determined by ASTM D-698.

3. Backfill and fill materials: Satisfactory soil materials approved by the Owner and free of rock or gravel larger than 2" in any dimension, debris, waste, frozen materials, organic and other deleterious matter.

4. Fills and Backfills:

   Unpaved areas: Areas on which fill is to be placed must be stripped of all topsoil and then scarified prior to placement of fill. Fill material must be placed in 8" (maximum thickness before compaction) layers to be continuous and horizontal over the entire length of fill. Each layer of fill (cohesive soils) must be compacted by a power roller approved by the Owner.

   For structural compaction as required by the Contract Documents, compaction must be carried out at optimum moisture content to a dry density of 95% of the maximum density (Standard Proctor density per ASTM D 698 and AASHTO method T-99). The moisture content of the compacted embankment layers must be as specified elsewhere.

   For vegetative compaction as required by the Contract Documents, compaction must be carried out at a less than optimum moisture content (e.g., at a water content of less than 13% on a soil having an optimum content of 15%) to a dry density of between 80% and 85% of the maximum density (Standard Proctor density per ASTM D 698).

   In the event the fill is rocky, same must be used up to 9" below elevation of proposed sub-grade. The remaining fill must be suitable earth fill, free from stones that will be retained on a sieve with 2" square openings, and compacted as specified above.

   a. Appropriate proof-rolling and compaction equipment must meet the requirements as per ASTM. Soft spots identified by the Owner during proof-rolling must be undercut and backfilled. Payment for undercutting and backfilling to eliminate soft spots must be made in accordance with the Contract provisions affecting the work.

   b. Paved surfaces and slab backfill: Compact after proof-rolling, each layer of backfill or fill materials to 95% maximum dry density.

   c. Footings and Foundations: When permitted to be placed by the Owner, select fill under footings and foundations must be compacted to not less than 95% maximum density.

   d. Walkways: Compact top 6" of sub-grade and each layer of backfill or fill material at 95% maximum density for cohesionless soil material.

e. Pavements: Compact top 12” of sub-grade and each layer of backfill or fill material at 95% maximum density for cohesionless and cohesive soil material.

f. Moisture Control: The soils used in fill and backfill must be moistened or aerated to within 2% of the optimum at no additional cost to the Owner. Where the soil layer is too dry, the Contractor must apply water uniformly using Owner-approved equipment to increase the moisture content to within 2% of the optimum. Where the soil layer is too wet, the Contractor must dry the soils by plowing or discing to aerate the soil and reduce the moisture content to within 2% of the optimum.

5. Prohibited Backfill: Soils classified as A-6 or A-7 (per AASHTO classification) or CL or CH (per ASTM classification) must not be used under pavements, slabs, footing/foundations or walkways due to expansive nature of the soils.

MEASUREMENT AND PAYMENT:

Comply with Subsection 203.04 of MSHA unless noted otherwise on Contract Documents.

Payment will be at the unit shown on the Schedule of Unit Prices for all borrow materials. This will be full payment for providing fill material, hauling/delivery, labor, tools, equipment, compaction, geotechnical testing, and incidentals necessary to complete the work.

SECTION 206 — REMOVAL OF EXISTING PAVEMENT, SIDEWALK, PAVED DITCHES, CURB, OR COMBINATION CURB AND GUTTER

Line Item 206-01: Removal of Existing Curb and Gutter; any type (LF)
Line Item 206-02: Removal of Existing Concrete Sidewalk (CY)
Line Item 206-03: Removal of Existing Asphalt Pavement, Full Depth (CY)
Line Item 206-04: Removal of Existing Concrete Pavement (CY)

DESCRIPTION:

Comply with Subsection 206.01 of MSHA unless noted otherwise on Contract Documents.

Materials must be removed down to subgrade or bedding. Material and debris collected as a result of the removal and disposal operation become the property of the Contractor and must be disposed of in accordance with local and state regulations.

MATERIALS:

Comply with Subsection 206.02 of MSHA unless noted otherwise on Contract Documents.

Any saws shall be specifically designed to perform this type of work.

CONSTRUCTION:

Comply with Subsection 206.03 of MSHA unless noted otherwise on Contract Documents.

The Contractor must submit a report to the Owner any time waste materials resulting from repair or maintenance of a storm water facility have been disposed of off-site. The report must be submitted within 24 hours after disposing the materials, and include the following information along with a copy of the receipt from the disposal facility where the materials are deposited:

1. Date the material was removed;
2. Name, address, and phone number of the person transporting the materials;
3. Types of structures and location from which the materials were removed;
4. Amount and types of waste materials removed;
5. Location of the facility to which the materials were delivered for disposal.

MEASUREMENT AND PAYMENT:

Comply with Subsections 206.04 and 206.04.02 of MSHA unless noted otherwise on Contract Documents.

All required saw cutting is considered incidental to this line item.

SECTION 208 – SUBGRADE PREPARATION

DESCRIPTION:

Comply with Subsection 208.01 of MSHA unless noted otherwise on Contract Documents.

MATERIALS:

Comply with Subsection 208.02 of MSHA unless noted otherwise on Contract Documents.

CONSTRUCTION:

Comply with Subsection 208.03 of MSHA unless noted otherwise on Contract Documents.

MEASUREMENT AND PAYMENT:

Cost is incidental to other cost line items.

CATEGORY 300 – DRAINAGE (MSHA-BASED)

GENERAL NOTE: The referenced MSHA Sections and Subsections apply unless noted otherwise elsewhere in the Contract Documents. In case of conflict between MSHA specifications and other Contract Documents, the requirements of the other Contract Documents shall apply.

SECTION 306 – UNDERDRAINS, SUBGRADE DRAINS, AND SPRING CONTROL

Line Item 306-01: 6" Solid PVC Schedule 40 (LF)
Line Item 306-02: 4" Perforated PVC Schedule 40 Pipe (LF)
Line Item 306-03: 4" Solid Schedule 40 Pipe (LF)
Line Item 306-04: Miscellaneous Polyvinyl Chloride (P.V.C.) Fittings (LS)
Line Item 306-05: Trench Drain System – Materials & Installation - (LF)

DESCRIPTION:

Comply with Subsection 306.01 of MSHA unless noted otherwise on Contract Documents.

MATERIALS:

Comply with Subsection 306.02 of MSHA unless noted otherwise on Contract Documents. Polyvinyl Chloride (PVC) plastic pipe, drainpipe, and perforated underdrain must meet the requirements of MSHA Section 905, material specification M278 or M278 (a).

PVC plastic pipe to be used as sanitary sewer pipe must be minimum Schedule 40 solid and must meet the applicable requirements of WSSC Standard Specifications Section 02530.

Unless noted otherwise, the perforated pipes used for underdrains or observation wells must have 3/8" inch diameter perforations spaced at 4 inches on center every 90 degrees around the pipe.

For slotted pipe used for underdrains or observation wells, the slot width must be 1/8 inch, slot length 1.9 inches, 4 slots per row, and 4 slots per linear foot.

Observation well caps must be water tight screw type lid. The pipe must have a plastic collar with ribs to prevent rotation when removing cap. The screw top lid must be a "Panella" type (or Owner-approved equal) as per the detail provided on the Project drawings.

CONSTRUCTION:

Comply with Subsection 306.03 of MSHA unless noted otherwise on Contract Documents.

Stormdrain/underdrain installation must meet the requirements of MSHA Section 303. Sanitary Sewer installation of sewer pipe must meet the requirements of WSSC Standard Specifications Section 02530. All backfill within the public right-of-way, in dam embankments, near structures and in other critical areas identified on the Drawings must be compacted to 95% of the maximum density as determined by AASHTO T-99.

MEASUREMENT AND PAYMENT:

Comply with Subsection 306.04 of MSHA unless noted otherwise on Contract Documents.

Delete MSHA subsection 306-04-04. All fitting Tees, elbows, etc. will be paid under the Miscellaneous Polyvinyl Chloride (P.V.C.) Fittings line item.

Trench drain layout and subgrade preparation, including excavation if required, will be incidental to the trench drain unit price.

SECTION 308 – EROSION AND SEDIMENT CONTROL

Line Item 308-01: Overall Sediment Control (LS)

GENERAL DESCRIPTION:

This Work consists of the provision and installation of all Sediment Control Devices as indicated in the Contract Documents. Control Devices must comply with the latest version of the Maryland Department of the Environment (MDE) "2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control" and "Maryland's Guidelines to Waterway Construction" and all Prince George's County Department of Permitting, Inspections and Enforcement (DPIE) standards. **If case of any conflict between standards, the Prince George's DPIE standards control**.

Work includes measures to prevent erosion and run-off of earth and silt, methods to prevent the transport of sediment off-site by construction vehicles, dust control, and contact and coordination with DPIE Stormwater Management/Sediment Control Inspection staff and any other involved regulatory agencies throughout the project.

The Contractor shall assume all Erosion and Sediment Control obligations and responsibilities placed on the Owner (Cottage City) per the approved Erosion and Sediment Documents. The Contractor shall perform all layout, construction, scheduling, bookkeeping, notification, review and maintenance assigned to the Owner as the Erosion and Sediment Control permittee.

DESCRIPTION:

Comply with Subsection 308.01 of MSHA unless noted otherwise on Contract Documents.

MATERIALS:

Comply with Subsection 308.02 of MSHA unless noted otherwise on Contract Documents.

All materials must be in accordance to MDE specifications for Soil Erosion and Sediment Control, MDE Construction Guidelines, and County (PGDPIE) standards unless otherwise specified in the Contract Documents.

Geotextile fabrics must conform to Section H of the MDE "2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control".

Straw mats (bales) with any type of plastic netting will not be accepted. The Straw/Single Jute Mat must be East Coast Erosion Blanket ECS–1B, Straw Biodegradable Single Net Blanket or County-approved equal and must provide biodegradable ground cover for seeding purposes with an estimated field life of less than 12 months.

Any Soil Reinforcement Matting must be biodegradable and must be installed per manufacturer's specifications.

Sand Bags: Sand bags must be made of UV resistant material, resistant to tear and puncture and woven tightly to prevent leakage of the sand. The sand bag must be at least 14" x 26" in size and hold a minimum of 50 pounds of sand.

Temporary HDPE pipe shall be flexible corrugated pipe.

The dewatering bag must be made of non-woven geotextile with a minimum surface area of 225 square feet per side. All structural seams must be sewn with double stitch using a double needle machine with high strength thread. The seam strength must withstand 100 lb/in using ASTM D-4884 test method. The dewatering bag must have a nozzle large enough to accommodate a 4 inch discharge hose. The geotextile fabric must be a nonwoven fabric with the following properties:

Weight:	ASTM D-3776	12oz/yd
Grab Tensile	ASTM D-4632	300 lbs
Puncture	ASTM D-4833	180 lbs
Flow Rate	ASTM D-4491	75 gal/min/sq ft
Permittivity	ASTM D-4491	1/1 sec
UV Resistance	ASTM D-4355	70%
AOS	ASTM D-4751	100

CONSTRUCTION:

Comply with Subsection 308.03 of MSHA unless noted otherwise on Contract Documents. Exclude sections 308.03.06, and 308.03.07.

1. The Contractor must employ, and identify to the Owner, a responsible person involved in the Project who has a Certificate of Attendance at a Maryland Department of the Environment approved training program for the control of sediment and erosion as the Superintendent/Supervisor. At any time, the Owner may request proof of this Certification.

2. Upon issuance of the Notice to Proceed, the Contractor shall layout the Limits of Disturbance and mark utilities via Miss Utility interaction. After these activities are completed, the Contractor shall schedule a pre-construction meeting with: Owner, Prince George's DPIE Sediment Control Inspection staff, the Contractor, M-NCPPC staff, MDE staff, and other appropriate permit inspection staff. The Contractor must not access the Project Site for any reason other than visual observation and surveying prior to this meeting; no land disturbance activities are permitted prior to this pre-construction meeting.

3. The phone number for Prince George's DPIE Sediment Control Inspection requests is (301) 883-3820. In addition, the DPIE Sediment Control Inspectors may be reached at their individual phones, or a message may be left on their "voice mailbox".

4. The Contractor will be provided with a copy of the Sediment Control Permit and all other required permits at the pre-construction meeting (or earlier), and must keep a copy of each permit on the Project Site at all times.

5. Installation of sediment control devices must begin only after the DPIE Sediment Control Inspector has granted approval, and must include any modifications to the approved Sediment Control Plan that the DPIE Sediment Control Inspector has required. The DPIE Sediment Control Inspector has the authority to make field modifications to the approved Sediment Control Plan. The Contractor must notify, and receive approval from, the Engineer before making any changes as directed by the Inspector. Upon approval by the Engineer, revised work shall be provided as required. The contractor is eligible for compensation for revised work in accordance with the Contract Documents.

6. All Sediment Control features must be constructed and installed in accordance with the Contract Documents or, if not indicated in the Contract Documents, then in accordance with the appropriate detail as specified in the MDE Specifications for Soil Erosion and Sediment Control and MDE Construction Guidelines. All proprietary sediment control devices must be installed per manufacturer's instructions.

7. All notifications for inspection and coordination with the DPIE Sediment Control Inspector are the responsibility of the Contractor.

8. Events requiring Sediment Control inspection and approval include, but may not be limited to: start of land disturbance activities, compliance with warning notices, lifting of stop work orders for violations, start of temporary or permanent stabilization, removal of Sediment Control facilities, and any other pertinent events noted in the Contract Documents.

9. Grading must be accomplished such that existing surface drainage is not impaired, a potential hazard is not created, hazardous erosion will not occur, or sediment will not collect in existing drainage systems.

10. All sediment control devices must be maintained, inspected and repaired as necessary at the end of each working day and after each rain event. If sediment leaves the construction area, it must be removed immediately and the area must be cleaned to the satisfaction of the County. Inspections must be documented on the MDE Construction Activity Inspection Form as required by permit. Completed inspection forms are required to be kept at the site in a notebook should an MDE representative wish to review them. Temporary stabilization must be provided.

    The Contractor shall assume any Owner requirements identified on State or County Erosion and Sediment Control permit for the project. The Contractor must complete and comply with any formal transfer of permit responsibilities including completion and compliance with the MDE NPDES Transfer Form for individual and general permits, which must be filed with MDE by the Contractor. Once the NPDES permit conditions have been met, and the permit is ready to be closed, the MDE Notice of Termination must be filed for individual and general permits.

11. Removal of sediment control devices:

    Once the Project has been completed, and all disturbed areas have been restored (seeded, sodded, paved, constructed, etc.) as called for in the Contract Documents and there is a good stand of grass in the seeded/sodded areas, the Contractor must contact the DPIE Sediment Control Inspector (with concurrent notification to the Owner and Engineer) for approval to remove the sediment control devices. The sediment control

devices must be removed within 14 days from the date of the DPIE Sediment Control Inspector's approval.

12. As permitted, after removal of all sediment control devices, the Contractor must re-grade affected areas to proposed designed grades and seed/or sod them as required for stabilization. **The Work is not considered complete until all temporary sediment control devices have been removed and all regrading and seeding/sodding is completed and the DPIE Sediment Control Inspector has released the Sediment Control permit.**

13. Dust Control: The Contractor must provide water as necessary to reduce airborne dust when directed by the Owner, at no additional cost to the County.

14. Dewatering: Prevent surface water and subsurface or groundwater from flowing into excavations and from flooding Project Site and surrounding area. Do not allow water to accumulate in excavations or other areas of the Site. Remove water to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of sub-grades and foundations. Provide and maintain pumps, sumps, suction and discharge lines, and other dewatering system components necessary to convey water from excavations. Convey water removed from excavations and rainwater to collecting or run-off structures. Provide and maintain temporary drainage ditches and other diversions outside excavations limits for each structure. Do not use trench excavations as temporary drainage ditches. Dewatering activities must be performed at no additional cost to the County unless a separate pay line item has been provided. Any repair to foundations which results from deficient dewatering is the sole responsibility and cost of the Contractor.

    Dewatering (Filter) bags: Water encountered within the Site must be pumped through a dewatering (filter) bag before it is allowed to drain away from the Site. Dewatering setup must be made in accordance with the Contract Documents; if not shown; the filter bag must be placed so that the incoming water flowing into the bag will pass through the system and then off site without creating erosion. The neck of the system must be tied off tightly to stop water from flowing out of the system without passing through the walls of the bag. The filter bag must be placed over a wood chip (mulch) bed to allow the water to flow in all directions. The filter bag must be placed on level or gently sloping grade and secured in place by wooden stakes spaced at 5 feet on center.

    Contractor shall provide adequate pump(s) for all dewatering. All dewatering installations must be inspected by appropriate permit inspectors and the Owner prior to being placed into operation.

Install standard Stabilized Construction Entrances (SCEs) in accordance with Contract Documents and MSHA 308 and applicable State and County guidelines. The price must include off-site removal of all related materials upon project completion.

Temporary curb inlet protection must be installed around all storm drain curb inlets to control sedimentation into the storm drainage system.

Maintenance of Stream Flow (Stream Diversion):

Any stream diversion (maintenance of stream flow) must be set up and operated in accordance with the Project Documents and MDE Construction Guidelines Section 1.2 unless otherwise directed by the Owner. The Contractor must notify all applicable inspectors as well as Cottage City 48 hours before initiating pump-around. If required, Cottage City will advise on fish removal requirements. All pumps must be maintained in proper working condition. All stream diversion outfalls must utilize a velocity reduction devise to prevent erosion. Pipes must be checked regularly for leaks and repaired as necessary. Any piping that crosses paved trails must have a wooden ramp at a slope of 1:20 (vertical: horizontal) for pedestrian and bike passage. A warning sign must be placed in advance of the pipe crossing. Pump inlets must have a screen (mesh size <1 inch) over opening. If pump operations occur between 5pm and 7am, the Contractor must have an employee on site at all times to monitor pumping operations. Pumps utilized in the stream diversion must be in compliance with the County Noise Ordinance and if necessary the Contractor must construct devices to muffle pump noise at no additional compensation.

The Contractor must properly anchor and support all diversion piping to prevent failure. If the event of any failure, the Contractor must, at its sole expense, immediately repair the diversion piping to properly convey the diversion water.

MEASUREMENT AND PAYMENT:

Comply with Subsection 308.04 of MSHA unless noted otherwise on Contract Documents.

The maintenance, repair, removal and resetting, and final removal of erosion and sediment control measures will not be measured, but the cost will be incidental to the Contract price to construct the device. Each sediment control will be paid for once. Any rework, repair or re-installation of sediment control devices shall be performed at the Contractor's expense.

Sand bags will be paid per each based as size as specified above. Smaller bags will be prorated by size or weight for payment.

Geotextile material will not be paid separately but shall be incidental to, and included in, other line item costs.

Orange Safety Fencing will not be paid separately but shall be incidental to, and included in, other line item costs.

CATEGORY 400 – STRUCTURES (MSHA-BASED)

GENERAL NOTE: The referenced MSHA Sections and Subsections apply unless noted otherwise elsewhere in the Contract Documents. In case of conflict between MSHA specifications and other Contract Documents, the requirements of the other Contract Documents shall apply.

SECTION 421 – REINFORCEMENT STEEL

DESCRIPTION:

Comply with Subsection 421.01 of MSHA unless noted otherwise on Contract Documents.

MATERIALS:

Comply with Subsection 421.02 of MSHA unless noted otherwise on Contract Documents.

Required Submittals

1. Shop Drawings:

    a. Detail reinforcing in accordance with ACI Detailing Manual.
    b. Bar lists showing the individual weight of each bar, total weight of each bar size and total weight of bars on list. Base calculated weights on theoretical unit weights show in ASTM A615, Table 1.

CONSTRUCTION:

Comply with Subsection 421.03 of MSHA unless noted otherwise on Contract Documents.

Reinforcement Product Delivery, Storage, and Handling:

1. Ship reinforcing steel in bundles limited to one size and length.

2. Tag each bundle at mill with waterproof tag showing name of mill, heat number, grade and size of bars and identifying number.

3. Protect reinforcing steel and wire fabric from damage; foreign matter such as dirt, oil and grease; and rust causing conditions.

Reinforcement Materials Installation:

1. All reinforcement steel must be new billet steel to conform to ASTM A615 Grade 60, and MSHA Standard Specifications Section 421.02 to 421.03 except as modified herein.

2. Concrete Protection for Reinforcement: Reinforcement must be protected by the thickness of the concrete indicated in the Contract Documents. Where not otherwise shown, the thickness of concrete over the reinforcement must be as follows:

a. Where concrete is deposited against the ground without the use of forms, the Contractor must provide not less than 3 inch of concrete cover.

b. Where concrete is exposed to weather or ground but placed in forms, the Contractor must provide 2 inch of concrete cover over all reinforcing steel.

3. Inspection: Reinforcing must be inspected in the forms and approved by the Owner before any concrete is placed. Water stops are to be installed as specified, and inspected prior to concrete placement.

4. Steel Reinforcing: All steel reinforcing must be new billet steel to confirm to ASTM A 615 Grade 60.

5. Concrete Joints: Where required, concrete joints, including water stops, must be installed to ensure watertight structure. Submittals indicating specific type and size of the water stops and accommodations for nearby reinforcement must be approved by the Owner prior to installation.

Allowable Tolerances: Cut and bend reinforcing steel to conform to dimensions shown within the following tolerances:

1. Sheared length: Plus or minus one inch

2. All other bends: Plus or minus one inch

MEASUREMENT AND PAYMENT:

Cost of reinforcing steel base shall be incidental to other line items.

CATEGORY 500 – PAVING (MSHA-BASED)

GENERAL NOTE: The referenced MSHA Sections and Subsections apply unless noted otherwise elsewhere in the Contract Documents. In case of conflict between MSHA specifications and other Contract Documents, the requirements of the other Contract Documents shall apply.

All work performed in the County Right of Way must be coordinated with, and inspected by, the Prince George's DPIE Inspector. Any defective work rejected by the Right-of-Way Inspector must be re-done at no additional cost to the County.

Unless otherwise described in each Line Item, in general, work performed under this Division is subject to inspection and acceptance by the Owner prior to payment. Any work not accepted must be re-done at no additional cost to the County.

SECTION 501 – AGGREGATE BASE COURSES

DESCRIPTION:

Comply with Subsection 501.01 of MSHA unless noted otherwise on Contract Documents.

MATERIALS:

Comply with Subsection 501.02 of MSHA unless noted otherwise on Contract Documents.

CONSTRUCTION:

Comply with Subsection 501.03 of MSHA unless noted otherwise on Contract Documents.

MEASUREMENT AND PAYMENT:

Comply with Subsection 501.04 of MSHA unless noted otherwise on Contract Documents.

SECTION 504 – HOT MIX ASPHALT PAVEMENT

Line Item 504-01: Hot Mix Asphalt Superpave 9.5MM for Surface, PG 64-22, 1.5 inch in depth, (SY)
Line Item 504-02: Hot Mix Asphalt Superpave 19.0MM for Surface, PG 64-22, 3 inch of depth (SY)
Line Item 504-04: Hot Mix Asphalt Superpave 9.5MM for Base; PG 70-22, 2 inch of depth (SY)

DESCRIPTION:

Refer to Sections 504.01 of the MSHA Standards and Specifications and Special Provisions Insert provided herein.

MATERIALS:

Refer to Section 504.02 of the MSHA Standards and Specifications and Special Provisions Insert provided herein. Contrary to Asphalt Content Percentage shown in Table 904A

CONSTRUCTION:

Refer to Section 504.03 of the MSHA Standards and Specifications, Special Provisions Insert provided herein, and its amendment found in the Chapter II of Prince George's County Department of Public Works and Transportation's "Specifications and Standards for Roadways and Bridges". The work involves placement of Hot Mix Asphalt pavement as per the standard details and according to the quality control plan submitted by the contractor and approved by the Engineer.

The Contractor must protect the pavement against damage from all causes. Any part of the pavement that is damaged during construction must be repaired or replaced by, and at the expense of, the Contractor.

HMA pavement must be installed using the methods and equipment as specified in MSHA Section 504.03.01 unless noted otherwise.

1. Base Course

    a. HMA Base Mix must be spread on the stone sub-base as specified, by mechanical self-powered paver, true to line, grade, and cross-section. Screeding must follow to required level. Immediately after the screeding and before compaction, the surface must be checked, any irregularities adjusted, all accumulation from the screed removed by rake, and all flat spots replaced with satisfactory material.
    b. Compaction must be effected, while the mixture is still hot, by 10-ton tandem power roller. Rolling must start at the extreme lower elevation and proceed toward the higher elevation. Each successive trip of the roller must overlap ½ the side of the rear wheel of the roller. The surface must then be subjected to rolling at right angles to the first rolling direction. Rolling must be continued until all roller marks are eliminated, and 94% of the maximum theoretical density has been achieved.
    c. Any irregularities in the surface in excess of ¼ inch from the design grade when checked against the benchmark must be corrected. Should any irregularities remain after final compaction, the full depth of bituminous material will be removed and new material laid and

compacted to form a true and even surface by the Contractor at no additional cost to the County.

2. Surface Course

   a. HMA Surface Mix must be spread on the asphalt concrete base course by mechanical pavers after making sure that: a) the base course surface is clean; b) the base course surface is dry; c) the temperature is above 40 degrees F; d) the base course surface meets the stipulated tolerance and thickness; and e) the base course was tacked before applying surface material.
   b. After spreading and screeding, compaction must commence with a steel wheel tandem roller weighing between 2 and 6 tons. The roller faces must be kept continually wet while rolling. The roller must not be operated at a speed exceeding 3 miles per hour. Rolling must be done in two directions, one at right angles to the other, until all roller marks are removed.
   c. The following tolerances must be met by the surface course:

      i. The surface must not vary more than 1/8 inch from a planar surface when measure with a 10 foot straight in any direction.
      ii. The surface must not vary more than ¼ inch from the proposed finish elevations at any location when checked against the benchmark.
      iii. The finished slope must not vary more than 0.25% from the proposed slope in any direction.

   d. HMA Compaction: Compaction must be carried out in accordance with MSHA Standards and Specifications (2008), Section 504.03.06.
   e. Joints: Must be in accordance with MSHA Standard Specifications Section 504.03.07.
   f. Sampling and Testing: must be in accordance with MSHA Standard Specifications Section 504.03.10.

MEASUREMENT AND PAYMENT:

Refer to Section 504.04 of the MSHA Standards and Specifications, Special Provisions Insert provided herein and its amendment in Prince George's County Technical Specifications. SUPERPAVE Hot Mix Asphalt Pavement will be measured and paid for at the Contract unit price per ton in place and accepted. The payment will be full compensation for furnishing, mixing, hauling, placing all materials, tack coat, finishing and compacting, control strip, setting of lines and grades where specified or as directed, pavement profiling (arterials and major collector roads) as required, and for all materials, labor, supervision, equipment, tools, maintenance of traffic and incidentals necessary to complete the work. Any variation in the price of asphalt during the life of the project will be adjusted using the MSHA price adjustment formula. Adjustment of any existing visible manholes, valve boxes, inlets or other utility structures will be incidental to this pay item. Any compaction incentive is not allowed in any of the asphalt related bid item.

THE FOLLOWING IS SUPPLEMENTAL TO THE FOLLOWING SPECIAL PROVISIONS INSERT FOR 504- HOT MIX ASPHALT PAVEMENT BELOW:

The contractor shall be responsible for posting streets 48-hours prior to the beginning of work and the repositioning and restoring all motor vehicles obstructing the work area. The posting of streets prior to work, the repositioning and restoring all motor vehicles obstructing the work area shall not be measured or compensated for under any stipulated pay item, but the cost will be incidental to the Hot Mix Asphalt item.

Prince George's County DPW&T Standards 100.07

Maryland Department of Transportation
State Highway Administration

SPECIAL PROVISIONS INSERT CONTRACT NO. ContNum
504 — HOT MIX ASPHALT PAVEMENT 1 of 12

452 ***DELETE:*** *SECTION 504 — HOT MIX ASPHALT PAVEMENT in its entirety.*

INSERT: *The following.*

SECTION 504 — HOT MIX ASPHALT PAVEMENT

504.01 DESCRIPTION. This work shall consist of constructing hot mix asphalt (HMA) pavement as specified in the Contract Documents.

504.02 MATERIALS.

Performance Graded Asphalt Binders	904.02
Tack Coat	904.03
Hot Mix Asphalt Mixes	904.04
Crack Filler	911.01
Production Plant	915

504.03 CONSTRUCTION.

Quality Control Plan. At least 30 days prior to the placement of any HMA pavement, the Contractor shall submit in writing a plant Quality Control Plan to the Team Leader of the Asphalt Team and a field Quality Control Plan to the Engineer for approval. The Quality Control Plans shall contain a statistically based procedure of random sampling and shall show how the Contractor proposes to control the equipment, materials, production, and paving operations to ensure conformance with these Specifications. A master plant and field Quality Control Plan may be submitted for this prior approval. When a master plant Quality Control Plan is submitted and approved, an addendum shall be submitted for each specific Contract.

The plan shall contain:

(a) Production plants, location of plants with respect to the project site, personnel qualifications, inspection and record keeping methods, and minimum frequencies of sampling and testing as specified in MSMT 735*,* Table 2.

(b) Detail when and how corrective action will be taken for unsatisfactory construction practices and deviations from the material Specifications.

(c) Quality Control Plan for the plant, which addresses all elements necessary for quality control.

Plan Administrator and Certified Technicians. The Quality Control Plan shall designate a Plan Administrator. The Plan Administrator shall have full authority to institute any action necessary for the successful operation of the Plan. The Plan Administrator may supervise the Quality Control Plan on more than one project if that person can be in contact with the job site within one hour after being notified of a problem.

Maryland Department of Transportation
State Highway Administration

SPECIAL PROVISIONS INSERT CONTRACT NO. ContNum
504 — HOT MIX ASPHALT PAVEMENT

The Quality Control Plan shall also designate a Certified Plant Control Technician, Field Control Technician, and Certified Materials Tester, if used, as specified in MSMT 731. A minimum of one certified plant technician shall be physically present at the plant during production of HMA for the Administration and shall perform the process control sampling, testing and documentation in conformance with the approved quality control plan and standards. The certified plant technician shall be physically present at the plant while material is shipped and shall perform the process control sampling, testing, and documentation in conformance with the approved quality control plan if it was not completed during the production.

A minimum of one certified field technician shall be physically present at the job site unless otherwise approved in the Contract quality control plan. The certified technician shall perform required field control testing in conformance with the approved quality control plan and standards.

The plant and field certified technicians shall perform all required sampling and testing in conformance with the approved quality control plan and standards. Any deviation from the approved quality control plan not approved by the Engineer shall be cause for immediate suspension of the production and paving operations. The Engineer's approval will be required prior to resuming production and paving operations for the Administration.

The Contractor's technician certified by the Administration, shall perform quality control, acceptance, and verification sampling and quality control testing. Quality control test results shall be submitted to the Engineer when requested. When a certified technician becomes deficient in their duties as defined in MSMT 731 and Mid-Atlantic Region Technician Certification Program policy manual, the technician's certification will be rescinded. The Contractor shall replace the deficient technician with another certified technician before resuming production and paving operations for the Administration.

Records. The Contractor shall maintain and make available to the Engineer upon request complete records of sampling, testing, actions taken to correct problems, and quality control inspection results. Copies of the reports shall be provided when requested by the Engineer.

The Contractor shall maintain linear control charts or may elect to use other types of control charts such as standard deviation, range, etc. Control charts may be maintained by production, by mix, or by mix per project. Current control charts shall be maintained in the quality control laboratory in a manner satisfactory to the Engineer. As a minimum, the control charts shall identify the mix design number, each test result, and the upper and lower Specification limits applicable to each test.

Acceptance. The Administration will provide acceptance by conducting independent acceptance sampling and testing separate from the Contractor and Producer from behind the paver. In addition, the Engineer may perform one or more of the following to aid in the acceptance decision:

(a) Periodically observing tests performed by the producer.

(b) Monitoring required control charts.

(c) Directing the producer to take additional samples at any time and location.

(d) Monitoring the Contractor's conformance with the quality control plan.

(e) Evaluating quality control sampling and testing by an independent assurance program.

The Contractor shall protect the pavement against damage from all causes. Any part of the pavement that is damaged shall be repaired or replaced by the Contractor at no additional cost to the Administration.

504.03.01 Equipment. All equipment including the production plant and paving equipment shall be subject to approval by the Engineer. The plant shall be ready for inspection by the Engineer at least 48 hours prior to the start of construction operations.

(a) Hauling Units. Refer to 915.02(f).

(b) Pavers. The Engineer's inspection and approval of pavers will be based upon the manufacturer's specification manual (copy to be provided by the Contractor). The paver shall be a self-contained, self-propelled unit capable of spreading the mixture true to line, grade, and cross slope. The paver shall be equipped with a screed or strike off assembly that will produce a finished surface of the required smoothness and texture without tearing, shoving, or gouging the mixture. The paver shall be operated with both screed end gates in the down position. When screed extensions are used, auger extensions shall be used with a distance no greater than 18 in. from the end of the auger to the end gate. The paver shall have automatic controls for transverse slope and grade. Controls shall be capable of sensing grade from an outside reference line or ski, and sensing the transverse slope of the screed to maintain the required grade and transverse slope within plus or minus 0.1 of the required slope percentage.

Manual operation will be permitted in the construction of irregularly shaped and minor areas, or where directed by the Engineer.

Whenever a breakdown or malfunction of any automatic control occurs, the equipment may be operated manually for the remainder of the workday as directed by the Engineer.

Reference lines or other suitable markings to control the horizontal alignment shall be provided by the Contractor, subject to the approval of the Engineer.

(c) Rollers. All rollers shall be inspected by the Contractor and approved by the Engineer before use in conformity with the manufacturer's recommendations. Rollers shall be self-propelled, reversible, and steel wheeled or pneumatic tired. Rollers may be vibratory or nonvibratory, and they may be operated in the vibratory mode as long as the Engineer determines that the roller is not cracking or damaging the aggregate in the mix. Rollers shall not be used in the vibratory mode on bridge decks. Pneumatic tire rollers shall have multiple tires of equal size with smooth tread. Wheels shall be arranged to oscillate in pairs, or they may be individually sprung. Tires shall be uniformly inflated at the operating pressure approved by the Engineer. The Contractor shall furnish the Engineer a manufacturer's table showing this data. The difference in tire pressure between any two tires shall not be greater than 5 psi. The Contractor shall provide a means for checking the tire pressure on the job at all times.

504.03.02 Weather Restrictions. HMA mixtures shall only be placed on roadway surfaces when the ambient air and surface temperature is at least 40 F and rising for surface mixes, at least 32 F and rising

for base mixes, and at least 50 F and rising for polymer-modified surface mixes. The pavement surfaces shall be clean, dry, and approved by the Engineer before HMA paving begins. Placing HMA material on a frozen graded aggregate base is prohibited. When weather conditions differ from these limits, material en route from the plant to the job site may be used at the Contractor's risk.

When placement of the material is stopped by the Engineer, all material en route shall be wasted at no additional cost to the Administration.

504.03.03 Foundation Preparation. Prior to placement of paving material, the foundation shall be constructed as specified in the Contract Documents and approved by the Engineer. When paving over existing pavement, all excess crack filling or patch material shall be removed and all spalls and potholes shall be cleaned, tack coated, filled with HMA, and tamped before placement of paving material. Manholes, valve boxes, inlets, and other appurtenances within the area to be paved shall be adjusted to grade as directed by the Engineer.

504.03.04 Tack Coat. Prior to application of the tack coat, the surface shall be cleaned of all loose and foreign materials. The tack coat shall be uniformly applied to the surface by full circulation spray bars that are laterally and vertically adjustable and provide triple fanning and overlapping action so that the resulting coating shall be residual asphalt applied at a rate of 0.01 to 0.05 gal/yd^2 as directed by the Engineer.

504.03.05 Hot Mix Asphalt Placement. Delivery of the mixture by the hauling units and placement shall be continuous. The temperature of the mixture shall be a minimum of 225 F at the time of placement. HMA shall be placed by the paver; broadcasting of loose mixture over the new surface is prohibited.

504.03.06 Compaction. Immediately following placement of the HMA, the mixture shall be compacted by rolling to an in-place density in conformance with 504.03.10. In-place compaction shall be completed before the mixture cools below 185 F as determined by a probe type surface thermometer supplied by the Contractor and approved by the Engineer. Price adjustment due to noncompliance with the required density will be as specified in 504.04.02. The probe type surface thermometer shall remain the property of the Contractor at the completion of the project.

Rolling shall consist of six separate operations in the following sequence:

(a) Transverse joint.

(b) Longitudinal joint.

(c) Edges.

(d) Initial breakdown rolling.

(e) Second or intermediate rolling.

(f) Finish rolling.

Steel wheel rollers shall be used for the first rolling of all joints and edges, the initial breakdown rolling, and the finish rolling.

Rollers shall start at the sides and proceed longitudinally toward the center of the pavement, except on superelevated curves the rolling shall begin at the low side and progress toward the high side. Successive trips of the roller shall overlap by at least half the width of the roller, and alternate trips shall not end at the same point. When base widening is too narrow to permit the use of conventional rollers, a power driven trench roller shall be used. When the trench must be excavated wider than the proposed width of the widening, an earth berm or shoulder shall be formed against the loose

HMA as soon as it is placed. The two materials shall be rolled and compacted simultaneously. Roller marks shall not be visible after rolling operations.

After rolling is completed, no traffic of any kind will be permitted on the pavement until the pavement has cooled to less than 140 F or as directed by the Engineer.

504.03.07 Joints. Both longitudinal and transverse joints in successive courses shall be staggered so that one is not above the other. Transverse joints shall be staggered by the length of the paver. Longitudinal joints shall be staggered a minimum of 6 in. and shall be arranged so that the longitudinal joint in the top course shall be within 6 in. of the line dividing the traffic lanes.

Joints shall be constructed to provide a continuous bond between the old and new surfaces.

Joints shall be coated with tack coat as directed by the Engineer. When placing a surface course, the edge of the existing pavement shall be cut back for its full depth at transverse joints to expose a fresh surface which shall be coated with tack coat material as directed by the Engineer. Before placing the mixture against curbs, gutters, headers, manholes, etc., all contact surfaces shall be coated with tack coat.

504.03.08 Edge Drop-off. Where 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.

504.03.09 Tie-In. Where HMA paving is being applied to the traveled way carrying traffic, the Contractor shall construct a temporary tie-in a minimum of 4 ft in length for each 1 in. of pavement depth before traffic is allowed to cross the transverse joint.

The final tie-in shall include the removal of a transverse portion of the existing pavement to a depth so the design thickness of the final surface course is maintained. The length of the final tie-in shall be equal to the posted speed per 1 in. depth of the design thickness of the final course with a minimum length of 25 ft per 1 in. depth and a maximum length of 50 ft per 1 in. depth.

504.03.10 Sampling and Testing for Density and Mixture. 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.

An HMA mixture compaction lot size shall equal one paving day's production per mix. A lot shall be divided into a minimum of five equal sublots. A sublot shall not be greater than 500 tons. When a paving day's production per mix is greater than 2500 tons, then each sublot size shall be 500 tons or fraction thereof.

(a) Compaction for Quality Control. For compaction quality control the Contractor shall select one of the following options and indicate that selected option in their Quality Control Plan. For either option the Contractor may use a density gauge to perform additional Quality Control checks. The Contractor when using a density gauge shall perform daily validations and standard counts as recommended by the manufacturer. A log of these validations and counts shall be with the gauge at all times.

(1) Option A. With this option the Contractor shall perform quality control for density of HMA mixtures by the core method. The Administration will take one random core per sublot for acceptance. The Contractor shall take one random core per sublot: this core density data shall be used in the acceptance decision based on the analysis of MSMT 733. When Contractor's core density data does not compare with the Administration's density data, only Administration's single sublot values and lot average value shall be used in the acceptance decision. The Contractor shall make quality control test data available to the Engineer no later than the beginning of the next paving day.

(2) Option B. With this option the Administration will take two random cores per sublot by the core method for acceptance. No comparison will be made with the Contractor's density gauge data and only Administration's data will be used in determining sublot average densities and lot average density for the acceptance decision.

(b) Mixture Sampling for Quality Control. The Contractor shall perform quality control testing for HMA mixtures. Samples shall be obtained from hauling trucks at the plant or from the mat behind the paver. Since the evaluation criteria are based on in-place measurements, it is recommended that quality control testing be completed on samples obtained from behind the paver. Acceptance testing will be performed on behind the paver samples. If quality control testing is based on truck samples taken at the HMA plant, the Contractor shall develop appropriate correlation factors acceptable by the Engineer.

(c) Acceptance Testing. For acceptance testing, both density and the mixture sampling shall be completed.

(1) Core method. For the core method for acceptance, the Engineer will select at random the core sampling locations (one for Option A and two for Option B) for each sublot in conformance with MSMT 459. The Contractor shall take the cores in conformance with MSMT 458 as witnessed by the Engineer. For Option A, a minimum of five cores per day's paving per mix or one per 500 tons of paving per mix, whichever yields the higher frequency of cores, shall be taken. For Option B, a minimum of 10 cores per day's paving per mix or two per 500 tons of paving per mix, whichever yields the higher frequency of cores, shall be taken. The diameter of the cores shall be 6 in. except that a 4 in. core may be used for mixes smaller than 25 mm. The Engineer will take immediate possession of the cores after taken and deliver the cores to the Laboratory for testing.

The Engineer will note any density waivers on the daily field density forms with remarks for the waivers.

The Laboratory will test core samples in conformance with MSMT 452. The specific gravity of the core samples will be expressed as a percentage of the maximum specific gravity determined for mixture for each day's placement. When more than one mixture sample is obtained per day's placement, an average of all maximum specific gravity tests for the day will be used for the determination of percent compaction of each core sample. The Laboratory will

make results of individual days paving available to the Engineer and the Contractor no later than five working days.

Option A Acceptance. For this option each HMA mixture compaction lot will be evaluated for compaction compliance (density) using the Engineer's acceptance test data and the Contractor's quality control data based on the core method. The Contractor's quality control test data for compaction for core method will be used in determining sublot

average density based on the analysis in conformance with MSMT 733 (F test and t test method). When Contractor's quality control data is used in determining average sublot density, each sublot average test data for a given lot shall be within 91.0 and 97.0 percent of maximum theoretical density with the lot average density within 92.0 to 97.0 percent of maximum theoretical density to receive 100 percent pay. When contractor's quality control data is not used in determining sublot average density based on the analysis of MSMT 733, Administration's individual sublot value will be used in determining acceptance for density. In this instance all test data for a given lot shall be within 91.0 and 97.0 percent of maximum theoretical density with the lot average density within 92.0 to 97.0 percent of maximum theoretical density to receive 100 percent pay. Pay reduction or incentive for pavement compaction lot will be in conformance with 504.04.02. The process for determining statistical outliers will be in conformance with MSMT 734.

Option B Acceptance. For this option each HMA mixture compaction lot will be evaluated for compaction compliance (density) using the Engineer's acceptance test data. Each sublot average test data for a given lot shall be within 91.0 and 97.0 percent of maximum theoretical density with the lot average density within 92.0 to 97.0 percent of maximum theoretical density to receive 100 percent pay. Pay reduction or incentive for pavement compaction lot will be in conformance with 504.04.02. The process for determining statistical outliers will be in conformance with MSMT 734.

(2) Thin Lifts. On projects when a lift thickness is less than 3/4 in., the lift shall be tested by a density gauge only and payment for this lift will be based upon the Contractor's quality control test data. The Engineer will select test location for the density gauge in conformance with MSMT 459 and witness the Contractor's testing. The Engineer will verify the Contractor's data by testing with an Administration density gauge at random locations.

(3) Mixture Sampling and Testing. An HMA mixture lot size is approximately equal to 6000 tons of a mix per project. A mix lot ends on the day when 6000 tons is reached. A mixture sublot size shall not exceed 1000 tons. A sublot size up to 200 tons can be combined with the previous 1000 ton sublot placed on the same day. A mix lot constitutes all sublots of a mix created during the production of required tonnage for a lot as defined herein. A new lot number for a mix will be given when there is a change in the approved job mix formula.

Mixture sampling shall be completed in conformance with MSMT 457, Sampling HMA Prior to Compaction. The samples shall be done randomly. The Contractor shall sample the mixture as witnessed by the Engineer. A minimum of one mixture sample per paving day per mix or one per 1000 tons of paving per mix, whichever yields a higher frequency, shall be obtained. The Engineer will take possession of the mixture sample after taken and deliver the samples to the Laboratory for testing.

The Engineer will test a minimum of three mixture samples in conformance with MSMT 735 for asphalt content, gradation, and volumetrics. The Engineer may accept quality control test data without comparing them with acceptance data based on the Contractor's past quality control and performance history.

Acceptance testing of these mixture samples will be in conformance with MSMT 735, Table 2. Mixture acceptance will be based on a composite percent within Specification limits (CMPWSL) of the lot based on asphalt content, voids total mix (VTM), percent passing No 4,

No. 8, and No. 200 sieve material for dense mixes and gap-graded mixes. The CMPWSL will be used to determine mixture pay factor in conformance with 504.04.02.

For acceptance of the HMA mixture lot, the Administration's acceptance test data for the lot will be compared with the Contractor's independent process control test data based on the analysis in conformance with MSMT 733 (F test and t test method). If the analysis indicates there is no reason to believe the results came from different populations, then the Contractor's process control and the Administration's test data will be combined for the determination of a pay factor in conformance with 504.04.02. When the analysis indicates there is a reason to believe the results came from different populations, only the Administration's acceptance test data will be used for the determination of a pay factor in accordance with 504.04.02.

504.03.11 Control Strip. The Contractor may opt to construct a control strip for guidance in determining roller patterns to achieve optimum density. When a control strip is constructed, it shall be placed on the first workday in which HMA is placed and shall be between 400 and 500 ft in length. Based on the Contractor's evaluation of the initial control strip, paving may continue at the Contractor's risk.

The Contractor will not be assessed a density pay adjustment for the amount of material required for construction of the control strips. Should the removal of any control strip be necessary, the Contractor shall remove it at no additional cost to the Administration.

The Engineer may require the Contractor to construct a control strip any time during placement of HMA based on the evaluation of compaction results.

504.03.12 Pavement Surface Checks. The Contractor shall have available, at all times, a 10 ft straightedge approved by the Engineer. After final compaction of each course, the surface of each pavement course shall be true to the established line and grade and shall be sufficiently smooth so that when tested with a 10 ft straightedge placed upon the surface parallel with the center line, the surface shall not deviate more than 1/8 in. The transverse slope of the finished surface of each course when tested with a 10 ft straightedge placed perpendicular to the center line, shall not deviate more than 3/16 in.

Transverse joints on each course shall be checked with a 10 ft straightedge immediately after the initial rolling. When the surface of each course varies more than 1/8 in. from true, the Contractor shall make immediate corrections acceptable to the Engineer so that the finished joint surface shall comply.

504.03.13 Curbs, Gutters, Etc. Where permanent curbs, gutters, edges, and other supports are planned, they shall be constructed and backfilled prior to placing the HMA, which shall then be placed and compacted against them.

504.03.14 Shoulders. Shoulders abutting the HMA surface course of any two-lane pavement that is being used by traffic shall be completed as soon as possible after completion of the surface course on that lane. Shoulder construction shall be as specified in the applicable portions of the Specifications and the Contact Documents.

504.03.15 Pavement Profile. Refer to the Pavement Surface Profile requirements specified in the Contract Documents.

Maryland Department of Transportation
State Highway Administration

SPECIAL PROVISIONS INSERT CONTRACT NO. ContNum
504 — HOT MIX ASPHALT PAVEMENT

504.04 MEASUREMENT AND PAYMENT. Hot Mix Asphalt Pavement will be measured and paid for at the Contract unit price per ton. The payment will be full compensation for furnishing, hauling, placing all materials including antistripping additive, tack coat, control strip, pot hole and spall repairs, setting of lines and grades where specified, and for all material, labor, equipment, tools, and incidentals necessary to complete the work.

Temporary Tie-Ins. Placement and removal of the temporary tie-in where hot mix asphalt is being applied to the traveled way carrying traffic will not be measured but the cost will be incidental to the pertinent Hot Mix Asphalt item.

Removal of the existing pavement or structure for the final tie-in will be measured and paid for at the Contract unit price for the pertinent items used. The hot mix asphalt for the final tie-in will be measured and paid for at the Contract unit price for the pertinent Hot Mix Asphalt item.

Adjustments. Adjustment of existing visible manholes, valve boxes, inlets, or other structures will not be measured but the cost will be incidental to the Hot Mix Asphalt item.

Adjustment of existing manholes, valve boxes, inlets, or other structures that are encountered below the existing grade will be considered for payment in conformance with GP-4.07.

Removal of Existing Raised/Recessed Pavement Markers. Removal of existing raised/recessed pavement markers will not be measured but the cost will be incidental to the Hot Mix Asphalt item.

Removal of existing raised/recessed pavement markers that are encountered below the existing pavement will be considered for payment in conformance with GP-4.07.

504.04.01 Price Adjustment for Asphalt Binder. An adjustment will be made to the final Contract unit price for Hot Mix Asphalt if the price of asphalt binder fluctuates significantly from the prevailing price as quoted in the Contract Documents to the date of placement. This includes HMA patching material converted to tons. The Contract unit price will be adjusted by the amount of fluctuation above 5 percent for Contracts scheduled to be paved during more than one construction season or having an estimated mix quantity of 10 000 tons or more. For Contracts completed within one construction season and having an estimated mix quantity of less than 10 000 tons, the adjustment will be based upon the amount of fluctuation above 15 percent. Only the differential percent change beyond the above noted 5 and 15 percent will be used.

For the purpose of making these calculations, a monthly price index will be maintained by the Administration. This index will be the average F.O.B. selling price of asphalt binder at the supplier's terminal in the State of Maryland.

The adjusted Contract unit price for Hot Mix Asphalt will be computed monthly by using the following formula:

$$F = (PP – Pb)/ Pb \times 100$$

where:

F = Percent price increase/decrease of asphalt binder.
PP = Index price of asphalt binder per ton at placement date.
Pb = Prevailing index price of asphalt binder per ton as specified in the Invitation for Bids.

Adjusted Contract unit price due Contractor when price of asphalt binder increases:

$$A = B + (D \times T \times Pb)$$

Adjusted Contract unit price due Administration when price of asphalt binder decreases:

$$A = B - (D \times T \times Pb)$$

where:

A = Adjusted Contract unit price per ton of Hot Mix Asphalt.
B = Contract unit price per ton of Hot Mix Asphalt.
D = Differential percentage expressed as a decimal (F – 5 percent or F – 15 percent as defined above).
T = Design target asphalt content expressed as a decimal.
Pb = Prevailing index price of asphalt binder per ton as specified in the Invitation for Bids.

504.04.02 Price Adjustment for Hot Mix Asphalt Mixture and Pavement Density. A price adjustment will be made as specified in GP-5.02 when the hot mix asphalt properties or pavement density does not conform to Specifications. The Contract unit price will be adjusted for noncompliance with HMA properties and pavement density in conformance with these procedures. A pay reduction and incentive payment adjustment for pavement density will be based on individual core test data for a given lot and the lot average density as specified in this section.

Pay adjustment due to noncompliance with the density requirements and incentive pay adjustment will be made against the adjusted Contract unit price for Hot Mix Asphalt in conformance with Table 504. Price adjustment will be waived for that portion of the pavement where the Engineer determines that inadequate density is due to a poor foundation.

TABLE 504

DENSE GRADED HOT MIX ASPHALT MIXES PERCENT OF MAXIMUM DENSITY		
LOT AVERAGE	**NO INDIVIDUAL SUBLOT BELOW***	**PAY FACTOR %**
94.0 — 97.0	94.0	105
94.0 — 97.0	93.0	104
93.0 — 97.0	93.0	103
93.0 — 97.0	92.0	102
92.0 — 97.0	92.0	101
92.0 — 97.0	91.0	100
91.0 — 97.0	90.0	95
90.0 — 97.0	90.0	90
89.0 — 97.0	89.0	85

Less than 89.0	88.0	75.0 or rejected per Engineer

Note 1: When any test data is above 97.0, additional pay reduction or reject per the Engineer.
Note 2: Pay incentive will not be paid for wedge and leveling courses and courses with thickness less than 3/4 in.
*Note 3: Option A - When the Contractor's core density data does not compare with the Administration's density data, only the Administration's single sublot values and lot average value will be used in acceptance decision.
*Note 4: Option B - The average sublot values and the lot average will be used in acceptance decision.

Acceptance of a mixture lot will be in conformance with Sections 904, 915, and MSMT 735. A composite pay factor (CPF) for asphalt content, gradation, and mixture will be based on the total estimated percent of the lot that is within Specification limits as computed using the quality level analysis in conformance with MSMT 735.

The Lot payment for in-place density will be computed using the following formula:

$$LP_{ipd} = (CP) \times (DF) \times (TL)$$

where:

LP_{ipd} = Lot payment in-place density
CP = Contract unit price
DF = Density pay factor from Table 504.04
TL = Tonnage per lot.

The Lot payment for asphalt content and gradation will be computed using the following formula:

$$LP_{md} = (CP) \times (MF) \times (TL)$$

where:

LP_{md} = Lot payment for mix design
CP = Contract unit price
TL = Tonnage per lot
MF = Mixture pay factor (refer to MSMT 735 for CMPWSL):
when CMPWSL is less than 90 %, MF = 55 + 0.5 CMPWSL
when CMPWSL is greater than or equal to 90 %, MF = 100

An in-place density lot containing material with a pay factor of less than 1.0 may be accepted at the reduced pay factor, provided the pay factor for density is at least 0.85 and there are no isolated defects identified by the Engineer.

A mixture lot containing material with a pay factor of less than 1.0 may be accepted at the reduced pay factor, provided the composite pay factor for asphalt content and grading is at least 0.75 and there are no isolated defects identified by the Engineer.

An in-place density lot containing nonconforming material that fails to obtain at least a 0.85 pay factor and a mixture lot containing nonconforming material that fails to obtain at least 0.75 pay factor for asphalt content and gradation, will be evaluated by the Engineer to determine its acceptance. When the Engineer determines to reject a lot, the lot shall be replaced at no additional cost to the Administration.

Maryland Department of Transportation
State Highway Administration

SPECIAL PROVISIONS INSERT CONTRACT NO. ContNum
504 — HOT MIX ASPHALT PAVEMENT

When less than five acceptance samples per in-place density lot have been obtained, the lot will not be evaluated for incentive payment.

When less than three mix samples have been obtained at the time of the acceptance sampling or at the time a lot is terminated, the Engineer will determine if the material in a shortened lot will be considered a part of a the previous lot, or will be accepted based on the individual test data.

504.04.03 Control Strip Price Adjustment. The cost of the control strip, if constructed, will not be measured but the cost will be incidental to the pertinent Hot Mix Asphalt item.

504.04.04 Dispute Resolution. Refer to 915.02.01, Responsibilities of the Administration, (e).

504.04.05 Asphalt Cement Price Index. The prevailing base price of PG 64-22 Asphalt Cement during the month of Advertisement for this project as determined by the SHA is $640 per ton. When a grade other than PG-22 is specified by the Contract Documents, the cost differential, if any, must be reflected in the price bid per ton for Hot Mix Asphalt

SECTION 508 – MILLING EXISTING HOT MIX ASPHALT PAVEMENT

Line Item 508-01: Milling Existing Hot Mix Asphalt Pavement, 2 inch in depth (SY)

DESCRIPTION:

Comply with Subsection 508.01 of MSHA unless noted otherwise on Contract Documents.

MATERIALS:

Refer to Section 508.02 of the MSHA Specifications. Milled asphalt materials shall remain the property of the County.

CONSTRUCTION:

Refer to section 508.03 of the MSHA Specifications and its amendment found in the Chapter II of Prince George's County Department of Public Works and Transportation's "Specifications and Standards for Roadways and Bridges".

MEASUREMENT AND PAYMENT:

Refer to Section 508.04 of the MSHA Specifications. The milling of asphalt pavement shall be paid for at the Contract unit bid price per square yard. The payment shall be full compensation for furnishing all materials, labor, equipment and trucks, tools, maintenance of traffic and incidentals necessary to complete the work including the removal and the hauling of the milled material, sweeping of the milled roadway and adjacent gutter pan, if any; and to remove all debris and related milled residue resulting from the milling operations.

The milled material shall be hauled from the site to any of the designated Department of Public Works and Transportation facilities at Glendale, D'Arcy Road or Brandywine, as directed by the Engineer. The cost of such hauling shall be incidental to the milling bid price.

SECTION 508A - PROTECTIVE NON-WOVEN MEMBRANE FOR PREVENTION OF REFLECTIVE CRACKING AND SEALING

DESCRIPTION:

This item provides for sealing and crack protection in Hot Mix Asphalt overlay. The membrane shall be a non-woven polypropylene fabric (AMOCO's Petromat Style No. 4597) as manufactured by Amoco Fabric and Fibers Corp., 75 Parkway, Atlanta, Georgia 30339, telephone number 1-800-445-7732. Other manufacturers material may be submitted for approval. The fabric shall be installed at the locations directed by the Town Engineer.

CONSTRUCTION:

The fabric shall be non-woven polypropylene fabric weighing 4.6 ounces per square yard as manufactured by Amoco Fabric and Fiber Corporation (ASTM D-3776) typical. The fabric shall also meet the following physical properties:

Thickness 40 mills ASTM-D-177 typical,
Tensile strength 120 pounds ADTM D-4632 typical,
Elongation 50% ASTM D-4632 typical,
Puncture strength 75 pounds ASTM D-4833 typical,
Mullen burst strength 230 PSI, ASTM D-3786 typical, and
Asphalt retention 0.25 gal/sq. yd. typical.

The asphalt sealant shall be asphalt cement grade by viscosity at 60 degrees centigrade (original asphalt) AC-10 for temperatures below 55 degrees Fahrenheit. (Liquid asphalt ASTM-D-946-76). Emulsified asphalt will not be permitted.

The contractor shall be responsible for posting streets 48-hours prior to the beginning of work and repositioning and restoring all motor vehicles obstructing the work area.

1. Site Preparation

The surface on which the fabric is to be placed shall be clean, dry and free of dirt, water and vegetation, cracks between 1/4 inch and wider shall be cleaned out and filled with an asphalt emulsion slurry, a light grade of emulsified asphalt mixed with fine sand or repaired by any other method approved by the Engineer. Large cracks and potholes shall be filled to their depth with hot mix.

2. Tack Coat

Prior to the installation of the fabric a liquid asphalt must be applied to the prepared surface. The rate of tack coat will depend on porosity of the existing pavement. The normal range for the fabric will be from 0.20 gallons/sq-yard of residual asphalt. For this work either AC-10 or AC-20 or equal must be used (depending upon the temperature.

To maintain the specified tack rate, a calibrated distributor truck will be required for all areas where a truck is usable. For areas inaccessible to a truck a hand spray will be permitted. The application temperature for tack must be high enough to assure uniform distribution (300 F to 352 F for grade AC-20). The width of the distribution should be 6-inches wider than the width of the fabric being placed.

NOTE: On streets in this project the fabric will be placed on small areas as well as very large and continuous areas.

Installation of Petromat Fabric

For small areas (1500 linear feet or less) hand held fabric installation units consisting of adjustable disc-type fabric tensions may be used. The unit may be mounted on the front bucket of a tractor or backhoe.

NOTE: Distributors and/or fabric installation units for both large and small jobs are readily available from various manufacturers.

Pavement brush pressure should be light without bending the bristles excessively. The brushes need only touch the pavement at the middle of the unit and be elevated 1/4-inch on the ends. Driving the vehicles straight with as few steering deviations as possible will assure a vertically wrinkly-free installation. Turns should be made gradually. Hand brooming will eliminate any small wrinkles. For large wrinkles, those having a length of one (1) inch or greater, the fabric should be cut and overlapped in the direction of the paving operation. The transverse fabric joints should be overlapped 4" to 6". Longitudinal joints should be overlapped two (2) inches to four (4) inches. Additional tack coat must be applied to the joints to assure proper bonding. Standard pavement operations should immediately follow the fabric installation.

Improper lay-down and installation creating severe wrinkling of the material must be repaired prior to the construction of the overlay, failure to take precautions and repair the affected areas shall be due cause for rejection of the areas in question. No measurement or payment will be made for improperly installed materials.

Fabric installation shall be coordinated with the asphalt operation so that all fabric shall be covered at the end of each working day. The flow of vehicular traffic on installed membrane shall be held to an absolute minimum.

3. Storage

Rolls of fabric should be stored in a dry place. When outdoor storage is required, the rolls should be elevated with a tarp. If exposed to moisture a roll of fabric can absorb three (3) times its dry weight.

HOT MIX OVERLAY

Placement of the hot mix overlay shall immediately follow fabric installation. In the event that the sealant bleeds through the fabric before the hot mix is placed, it may be necessary to blot the sealant by spreading sand or hot mix over the affected areas. This will prevent any tendency for construction equipment to pick up the fabric when driving over it.

Most satisfactory lay down of the hot mix can be accomplished at temperatures below 300 degrees Fahrenheit. Turning of asphalt trucks, vehicles and the paver should be gradual to avoid movement or damage to the membrane.

MEASUREMENT AND PAVEMENT:

Cost of protective non-woven membrane for prevention of reflective cracking and sealing is considered incidental to other line items.

SECTION 520 – PLAIN AND REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT

Line Item 520-01: Reinforced 8" Concrete MSHA Mix No. 9 (Air-Entrained Concrete Paving) (SY)

DESCRIPTION:

Comply with Subsection 520.01 of MSHA unless noted otherwise on Contract Documents.

MATERIALS:

Comply with Subsection 520.02 of MSHA unless noted otherwise on Contract Documents.

Unless noted otherwise on the Contract Documents, sidewalks must be a minimum of 5 inches thick and constructed in accordance with MSHA Standard Specifications Section 603. Handicap ramp installation (new or replacement) must be in accordance with MSHA Standard 655.11/12.

Weather Restrictions:

(a) Temperature and Surface Conditions. Begin concrete placement when the ambient air and surface temperatures are at least 40 F and rising. Discontinue placement whenever the temperature falls below 40 F. These requirements may be waived for incidental concrete construction. Do not place concrete on a frozen base. (b) Precipitation. Have sufficient approved material on hand to cover freshly placed concrete as protection against precipitation. (c) Wind. Cease placement when the Engineer determines that wind conditions may have a detrimental effect on the work. When weather conditions differ from these limits, placement of material enroute is at the Contractor's risk.

CONSTRUCTION:

Comply with Subsection 520.03 of MSHA unless noted otherwise on Contract Documents.

MEASUREMENT AND PAYMENT:

Comply with Subsection 520.04 of MSHA unless noted otherwise on Contract Documents except delete Subsections 520.04.01 and 520.04.02.

SECTION 549 – PAVEMENT MARKINGS

Line Item 549-01: 5" Wide Double Yellow Pavement Markings – (Non-Thermoplastic and Non-Toxic) (LF)
Line Item 549-02: Yellow Pavement Markings (For Curb) – (Non-Thermoplastic and Non-Toxic) (LF)
Line Item 549-03: 12" Wide Solid White Pavement Marking for Crosswalk Yellow – (Thermoplastic) (LF)
Line Item 549-04: 24" Wide Solid White Pavement Marking for Stop Bar – (Thermoplastic) (LF)

DESCRIPTION:

Comply with Subsection 549.01 of MSHA unless noted otherwise on Contract Documents.

Provide pavement markings for following work as indicated on Contract Documents: vehicular parking spaces and ADA symbols, direction arrows and/or stop bars, striping for a vehicular lane, and permanent on-street markings (signs).

MATERIALS:

Comply with Subsection 549.02 of MSHA unless noted otherwise on Contract Documents.

Material shall be nontoxic lead-free waterborne pavement markings.

CONSTRUCTION:

Comply with Subsection 549.03 of MSHA unless noted otherwise on Contract Documents. Delete Subsection 549.03.01.

MEASUREMENT AND PAYMENT:

Comply with Subsection 549.04 of MSHA unless noted otherwise on Contract Documents.

CATEGORY 600 – SHOULDERS (MSHA-BASED)

GENERAL NOTE: The referenced MSHA Sections and Subsections apply unless noted otherwise elsewhere in the Contract Documents. In case of conflict between MSHA specifications and other Contract Documents, the requirements of the other Contract Documents shall apply.

Unless otherwise described in each specification section, in general, work performed under this Division is subject to inspection and acceptance by the Owner prior to payment. Any defective work not accepted must be re-done at no additional cost to the County.

SECTION 602 – CURB, COMBINATION CURB AND GUTTER AND MONOLITHIC MEDIAN

Line Item 602-01: Standard Concrete Curb and Gutter, any type (LF)

DESCRIPTION:

Comply with Subsection 602.01 of MSHA unless noted otherwise on Contract Documents.

MATERIALS:

Comply with Subsection 602.02 of MSHA unless noted otherwise on Contract Documents.

CONSTRUCTION:

Comply with Subsection 602.03 of MSHA unless noted otherwise on Contract Documents.

In addition to meeting the requirements of MSHA Standard Specifications Section 602 concrete curb and gutters must meet the following requirements (unless noted otherwise):

1. Unless noted otherwise, replacement curb and gutter must match the configuration of the curb and gutter that was removed.

2. Curb and gutter must meet the latest DPW&T Standard Concrete Curb and Gutter (STD. 300.01) or MSHA Standard Type “A” (620.02) unless noted otherwise in the Contract Documents.

3. All curb transitions, nose downs and depressed curb (gutter sections) through sidewalk ramps and driveways are included in the work.

4. In the course of work, the Contractor must take care to protect existing curb and gutter, driveway apron or other structures as required in the Contract Documents. Any Contractor-caused damage must be reported to the Owner and must be repaired to the satisfaction of the Owner at no additional cost to the County.

5. Slope requirements for sidewalk ramp curb openings must be in accordance with the American Disabilities Act (ADA).

6. Formwork for curb and gutter work shall be approved by the Right-of-Way Inspector prior to concrete placement.

7. All construction waste and debris must be swept and removed from the Site. **Construction waster and debris must not be swept or washed into the inlets or storm sewer system.**

In addition to meeting the requirements for asphalt in specification section 504 above, asphalt curb (with related sections) must be in accordance with PG-DPW&T's standard detail STD.300.03 in addition to the following requirements:

1. Unless noted otherwise, replacement curb and gutter must match the configuration of the curb and gutter that was removed.

2. Curb and gutter must meet the latest Prince George's County or MSHA Standard Details for curb and gutter.

3. Included in the Work are all curb transitions, nose downs and depressed curb (gutter sections) through sidewalk ramps and driveways.

4. In the course of the Work, the Contractor must take care to protect existing curb and gutter, driveway apron or other structures as required in the Contract Documents. Any Contractor-caused damage must be reported to the Owner and must be repaired to the satisfaction of the Owner at no additional cost to the County.

5. Slope requirements for sidewalk ramp curb openings must be in accordance with the American Disabilities Act (ADA).

MEASUREMENT AND PAYMENT:

Comply with Subsection 602.04 of MSHA unless noted otherwise on Contract Documents.

SECTION 603 – SIDEWALKS

Line Item 603-01: Commercial Driveway Entrance (per PG DPWT Std. 200.03) (CY)
Line Item 603-02: Concrete Driveway Strips in Alleyway (MSHA Mix No. 3) (CY)
Line Item 603-03: 5 Inch Concrete Sidewalk (SF)

DESCRIPTION:

Comply with Subsection 603.01 of MSHA unless noted otherwise on Contract Documents.

MATERIALS:

Comply with Subsection 603.02 of MSHA unless noted otherwise on Contract Documents.

CONSTRUCTION:

Comply with Subsection 603.03 of MSHA unless noted otherwise on Contract Documents.

Unless noted otherwise on the Contract Documents, sidewalks must be a minimum of 6 inches thick and constructed in accordance with MSHA Standard Specifications Section 603 (and related sections) and PG DPWT Category 100.

Concrete Driveway Aprons must meet requirements provided on applicable PG DPWT Standard 200.01, 200.03 and related details in addition to meeting the requirements of MSHA Standard Specifications Sections 602 and 603.

Formwork for sidewalks and driveway entrances shall be approved by the Right-of-Way Inspector prior to concrete placement.

MEASUREMENT AND PAYMENT:

Comply with Subsection 603.04 of MSHA unless noted otherwise on Contract Documents.

Ramps and sidewalks installed as part driveway entrances are considered incidental to the driveway installation.

CATEGORY 700 – LANDSCAPING (MSHA-BASED)

GENERAL NOTE: The referenced MSHA Sections and Subsections apply unless noted otherwise elsewhere in the Task Order Documents. In case of conflict between MSHA specifications and other Contract or Task Order Documents, the requirements of the other Contract or Task Order Documents shall apply.

Unless specifically specified otherwise in the individual Specification Sections below, the following minimum acceptance and maintenance requirements apply to all plant and seeding installations:

Initial Watering: The Contractor must provide at least one initial watering after planting, sodding or seeding. All watering must be accomplished using a hose with nozzle end breaker or a sprinkler. Water must be applied in sufficient quantities to maintain moist soil to a depth of at least 4 inches. Water must be applied at low water pressure directly to each plant, allowing water to be absorbed into the planting area until saturated, but without runoff. The Contractor must avoid the application of too much water.

The Contractor must water plantings as necessary until Initial Acceptance.

Contractor must be able to supply the required water from a water truck or from a nearby hydrant. When a hydrant is used, the Contractor is responsible for all regulations, permits or expenses necessary to use the public water supply.

Final Cleanup: Prior to Initial Acceptance, the Contractor must remove all trash and materials incidental to the project and dispose of it off-site. All rejected materials must be immediately removed from the site.

Inspection and Initial Acceptance: The Contractor must notify the Owner in writing that the Plantings, sod and/or seeds are installed in accordance with these specifications. The Contractor must request an inspection by the Owner. The inspection shall be performed by the Owner and Contractor within two weeks of written notification from the Contractor. If the installation and plantings are satisfactory, the Owner will provide a Certificate of Initial Acceptance to the Contractor. The Warranty period will begin from the date of the Certificate.

WARRANTY (ESTABLISHMENT AND MAINTENANCE) PERIOD WORK

After Initial Acceptance of any Planting work, and before receiving complete payment for any planting installations, the Contractor must provide a written Warranty to the Owner for the planting work. The Warranty must be provided using the Owner's form or other form acceptable to the Owner. The Warranty must acknowledge the Contractor's responsibility to: establish and maintain all plantings, sodding, and/or seeding, and to replace all deficient work at the Contractor's sole cost. The length of the warranty will vary depending on the nature of the work; see the individual Specification Sections for information on Warranty length. Work to be performed during the Warranty period shall include, but not be limited to:

Maintenance Watering: The Contractor must provide sufficient watering as necessary to maintain the plantings, sodding, and/or seeding in good health throughout the Warranty period. This maintenance watering of planted trees, shrubs, herbaceous plants, sod, and/or seeded areas shall be as required for proper growth and health of the plantings. Water used on plants must be free of any substance harmful to the plants.

During the Warranty period, the Contractor must monitor the water needs of all plant material at least once per month between March 31 and October 31. Additionally, the Contractor shall perform more frequently water monitoring visits in periods of low rain (defined as any two-week period with less than an inch of rain at the Site). When the Contractor identifies the need for watering, the Contractor must notify the Owner of the timing of the Contractor's planned watering. After Owner notification, the Contractor shall proceed with its planned watering – whether the Owner attends the watering or not.

While the Owner has no obligation to monitor watering, the Owner may notify the Contractor if the Owner feels that the Contractor has failed to properly water plantings. If so notified, the Contractor must start watering within 24 hours of that notification. The Contractor must provide watering until all plant material has been properly watered as approved by the Owner. All required watering must be completed within five calendar days of Owner notification.

Contractor must be able to supply the required water from a water truck or from a nearby hydrant. When a hydrant is used, the Contractor is responsible for all regulations, permits or expenses necessary to use the public water supply.

Maintenance: The Contractor shall be responsible for all maintenance during the Warranty period including but not limited to: watering, invasive plant control, fence maintenance, stake and guy maintenance, and mowing (as applicable). See individual Sections for additional requirements.

Final Inspection: The Contractor will conduct a Final Inspection with the Owner at the end of each Warranty period. It will be the Contractor's responsibility to notify the Owner at least two weeks before the anticipated meeting. Any planting installation that does not meet the Task Order Documents and/or the Warranty must be corrected or replaced by the Contractor at its own expense.

Replacements and Conditions: The Contractor must meet the required Warranties for replacement of deficient plantings. During the Warranty period, the Contractor will not be responsible for plant material that has been damaged due to vandalism, fire, relocation or other activities beyond the Contractor's control as determined by the Owner. The Contractor is responsible for maintaining adequate protection against deer (and other animal) damage, as specified in the specifications, during the Warranty period.

The cost of the Planting Warranty work (including watering, maintenance, care and replacement) will not be paid for directly. Cost is incidental to other cost Line Items and Sections. If the Contractor fails to perform any Warranty work, the Owner has the right to perform the work and back-charge the Contractor.

SECTION 705 – TURFGRASS ESTABLISHMENT (BY SEEDING)

Line Item 705-01: Permanent Stabilization By Seed & Mulch (LS)

DESCRIPTION:

Comply with Subsection 705.01 of MSHA unless noted otherwise on Task Order Documents.

This section specifies the establishment of turf by seeding as specified in the Task Order Documents. The work includes soil preparation, seeding, fertilizing, liming as required, mulching, overseeding and re-fertilizing of all areas designated for turf establishment.

MATERIALS:

Comply with Subsection 705.02 of MSHA unless noted otherwise on Task Order Documents.

Submittals:

1. At least one month prior to proposed seeding date, the Contractor must submit: proposed seeding schedule, manufacturer's certificates of seed purity and guarantees of germination in accordance with Maryland Seed Law, and soil test results to the Owner for review and approval. Proposed seed must be approved by the Owner prior to installation.

2. Before the seed is applied to the site, the Contractor must provide the Owner the seed tickets and manufacturer's invoice for the seed to be installed. The seed tickets and seed mixture being installed must match the mixture approved by the Owner.

3. Warranty: After the Contractor receives a Certificate of Initial Acceptance from the Owner, the Contractor must submit a written Warranty covering the establishment and maintenance of turfgrass installation. The Warranty period shall begin from the date of the Certificate of Initial Acceptance.

Seed and other Materials:

1. Seed must be fresh, clean, new seed crop composed of the following varieties mixed in the proportion shown and tested to the following minimum percentages of purity and germination.

   Minimum standards for percent purity and percent germination of turfgrass:

Turfgrass species	% Purity	% Germination
Kentucky bluegrass	90	80
Perennial ryegrass	95	85
Tall fescue	95	80
Fine fescues	95	80

APPROVED BLUEGRASS		APPROVED PERENNIAL RYE		APPROVED TALL FESCUE	
Merit	Limosine	Opni	Greenland	Amigo	Houndog
Fairfax	Liberty	Bright Star	Prizm	Apache	Jaguar
Blacksburg	Julia	Cutter	Assure	Bonanza	Mesa
Preakness	Midnight	Repell II	Affinity	Chieftain	Mustang
Cynthia	Penn Pro	Prelude II	Seville	Finelawn I	I Olympic
Eclipse	Touchdown	APM	Rivera II	Finelawn 5GL	Rebel II
Georgetown	Dawn	Palmer II	Advent	Guardian	Shenandoah Tribute

2. Limestone applications must be determined by the soil test results and recommendations as approved by the Owner. Pulverized limestone must contain 50% calcium oxide equivalent (CaO or Ca Mg O) and ground to such fineness that at least 50% will pass through a 100 mesh sieve and 90% will pass through a 20 mesh sieve.

3. Fertilizer applications must be determined by soil test results and recommendations as approved by the Owner. Fertilizer must be 100 percent organic-based fertilizer and meet the following specifications:

    a. Organic Fertilizer (5-3-4) – The organic fertilizer must be 100% organic based fertilizer (free of synthetic materials). The fertilizer may be derived of fish by-products, cottonseed meal, alfalfa meal, feather meal, rock phosphate, kelp meal, cocoa meal, blood meal, dried whey, natural nitrate of soda, natural sulfate of potash, and magnesium sulfate, and must meet the following chemical requirements:

Total Nitrogen (N)	5.00%
Water Soluble Nitrogen	1.50%
Water Insoluble Nitrogen	3.50%
Available Phosphate (P_2O_5)	3.00%
Soluble Potash (K_2O)	4.00%

4. Mulch

    a. Straw: Straw must meet the requirements of MSHA Section 920.04.01.
    b. Wood Cellulose Fiber: Wood cellulose fiber must meet the requirements of MSHA Section 920.04.02.

5. Straw Mulch Binder must be bound with a suitable binder or straw must be rolled thoroughly with a crimping roller in several directions to prevent erosion of the soil and/or mulch.

6. Any erosion control blanket, installed to facilitate soil stabilization and grass growth, must be comprised of natural, biodegradable (in less than 9 months), material. Acceptable materials include: 1) straw matting with jute netting and 2) wood fiber matting with no netting (example: Curlex). The use of plastic, polypropylene or nylon netting is not acceptable.

CONSTRUCTION:

Comply with Subsection 705.03 of MSHA unless noted otherwise on Task Order Documents.

1. All areas disturbed by construction must be seeded unless noted otherwise in the Task Order Documents and as directed by the Owner. Areas that are not disturbed must NOT be seeded.

2. Soil must be tested by an accredited soil testing laboratory for acidity (pH), phosphorous (P_2O_5), potassium (K_2O), soluble salts concentrations and organic matter.

3. All areas to be seeded must conform to the finished grades as specified on the Task Order Documents and be free of all weeds, trash, debris, brush, clods, stones and other foreign materials larger than 3 inches in diameter or length that would interfere with seeding, or future grass maintenance. All gullies, washes or disturbed areas that develop subsequent to final dressing must be repaired prior to seeding.

4. Seeding must be performed from March 1 through May 15 or August 1 through October 20 unless otherwise approved by the Owner.

5. Seeding must not be performed on frozen ground or when the temperature is 32°F (0°C) or lower.

6. Before seeding, all soils must be loosened with rototillers, disk harrows, chisel plows, or other Owner-approved equipment, to a minimum depth of 4 inches. All stones over ¾ inch in any dimension must be removed from the top 4 inches of soil by use of a “Rock Hound” or other means. Fertilizer and limestone application may be accomplished at this time according to the results of the soil test. Fertilizer and limestone must be evenly distributed on the seed bed areas and worked into ground to a depth of 3 inches.

7. All seeding equipment must be calibrated before application to the satisfaction of the Owner so that the materials are applied accurately and evenly to avoid misses and overlaps. Seed installed by a broadcast spreader capable of placing seed at the specified rate. The minimum seed application rate is 250 pounds per acre.

   Hydroseeding applications must meet MSHA Section 705.

8. Seed must be applied within the top ¼ inches of the soil in two different directions. The Contractor must maximize the seed/soil contact by firming soil around the seed with a cultipacker or other similar equipment.

9. Initial Watering must be provided as described in Category 700.

10. The Contractor must mulch and tack all seeded areas within 24 hours after seeding in accordance with MSHA Sections 705.03.09 and 705.03.10.

Initial Acceptance: After the Contractor has completed its initial seeding (including soil preparation, seeding, fertilizing, liming as required, mulching and initial watering), the Contractor shall submit a request for Initial Acceptance. An Owner Inspection will be conducted to verify completion. If complete, an Initial Acceptance Certificate will be issued by the Owner at that time.

Warranty:

1. The Contractor must provide a written establishment, maintenance, and replacement Warranty on all permanent turf seeding. The length of the Warranty shall be the longer of: a) one year or b) until adequate grass coverage is obtained. The Warranty must guarantee a 95% survival rate per 1000 square foot area.

2. The Warranty period shall begin upon the date of the Initial Acceptance Certificate.

3. As necessary, the Contractor must reseed all areas experiencing a less than an ninety-five percent (95%) survival rate at its sole cost. As practicable, reseeding shall be performed prior to May 15 of the year following Initial Acceptance.

4. If Soil Stabilization matting is used (per Section 709), it shall be included as part of the turfgrass seeding Warranty. See Section 709 for further information.

Establishment and Maintenance of Newly Seeded Areas:

1. Establishment and Maintenance of grass areas requires fertilizing, watering, mowing, weeding, and re-seeding as necessary to obtain an Owner-approved stand of grass. It must continue until the end of the Warranty period. Until Final Acceptance, the Contractor shall refertilize all of the grassed areas during each seeding seasons. The actual timing and rate of application of the refertilization shall be decided by the Owner, consistent with MSHA 705.03.16. Proper maintenance of the turf will continue until the project is finally accepted.

2. Flooded, washed-out, rilled or otherwise damaged or defective areas of seeding, mulch, grade, swales or berms must be reconstructed and all grades re-established in accordance with the grade plans or other specifications.

3. The Contractor is responsible for all mowing until Final Acceptance. Mowing must not remove more than one-half of the grass blade length. Heavy mowing, resulting in grass piles, must be "double mowed" or piles must be removed by the Contractor. Height of the grass must be maintained at 3 inches, unless otherwise specified by the Owner.

4. The following are examples of deficiencies that will result in the Owner's non-acceptance of the work:

    a. Improper Grades:

        - Low or high spots on flat ball field-type areas.
        - Improper drainage such as swales, low areas, rip-rapped outlets and paved areas.
        - Washed out or rilled areas.
        - Exposed rock and log debris

    b. Turf Grass Conditions:

        - Poor or thin stand; improper application of seed, dead grass; use of seed mixtures other than specified in the specifications.
        - Improper fertilizer application – Uneven spreading, insufficient amounts, or failure to re-fertilize during extended acceptance.
        - Persistent weeds established in turf areas.

Final Acceptance: When: 1) the Contractor has established adequate (at least 95%) turfgrass establishment, and 2) a minimum of 11 months has elapsed since the date of the Initial Acceptance Certificate, the Contractor shall submit a request for Final Acceptance. Owner and/or Regulatory Inspections will be conducted to verify completion. If complete, a Final Acceptance Certificate will be issued by the Owner at that time.

If Establishment is not complete at the time of the Inspection, the Contractor shall take immediate steps to establish adequate coverage during the next planting season. Re-inspections will occur until Final Acceptance.

MEASUREMENT AND PAYMENT:

Turfgrass establishment shall be measured and paid for at the Task Order Unit Price shown on the Schedule of Unit Prices. Payment must be full compensation for furnishing and incorporating seed including all, materials, labor, equipment, tools, maintenance and Warranty and incidentals necessary to complete the work as specified in the Task Order Documents.

Turfgrass Establishment including preparing soil, preparing seed bed, applying fertilizer, seed mixes, seed additives, overseeding, reseeding, mulching, securing mulch, and repairing unacceptable areas will be measured and paid for at the Task Order unit price per square yard.

The Contractor shall be paid 100% of the Unit Price after Initial Acceptance and the County's receipt of the Contractor's written Warranty.

The cost of all Warranty work is incidental to the Unit Price; the Contractor shall perform all Warranty work at no additional cost. **If the Contractor fails to perform any Warranty work, the Owner has the right to perform the work and back-charge the Contractor.**

SECTION 715 – TREE ROOT PRUNING

Line Item 715-01: Tree Root Pruning (LF)

DESCRIPTION:

Comply with Subsection 715.01 of MSHA unless noted otherwise on Contract Documents.

This work consists of tree root pruning which is necessary to preserve the life of existing trees within the limits of disturbance as indicated on the Contract Documents.

MATERIALS:

Comply with Subsection 715.02 of MSHA unless noted otherwise on Contract Documents.

All tools and work must be in accordance with accepted arboricultural practices and as approved by the Owner.

CONSTRUCTION:

Comply with Subsection 715.03 of MSHA unless noted otherwise on Contract Documents.

This work must be field supervised by a Maryland Licensed Tree Expert. Carefully identify and flag the exact location of the root pruning trench as specified on the Contract Documents. Before root pruning, all tree protection measures must be in place according to Maryland National Park and Planning Commission Forest Conservation Law. No roots must be cut within a minimum of ***three*** trunk diameters (measured ***at DBH***) without expressed approval by the Owner. Roots less than 1.5 inches diameter can be cleanly pruned using handsaws, pruners, loppers or sharp vibratory knife. Roots of 1.5 inches diameter or larger must be cleanly pruned by hand with handsaws, pruners, loppers, or other specifically designed root pruning equipment as soon as the root is encountered. Root pruning must be performed to the depth of excavation or 24 inches, whichever is less. All blades must be cleaned before each cut when working with trees or roots that have visible signs of defects or decay. During root pruning, the roots must be cleanly severed and excavation must not cause tearing or ripping of tree roots. The tree roots must not remain exposed to air during pruning activities. All exposed roots and cut ends must be kept moist with damp burlap or covered with an Owner-approved soil until final grade is established. Root pruning must not be undertaken when the soil on site is wet and when more than the top 1 inch of soil is frozen. The Contractor must follow the American National Standard for Pruning, ANSI A300-2008 or most recent version. Debris will generally be reused onsite; if it cannot be onsite, the Contractor must dispose of debris offsite at no additional compensation. A standard detail for root pruning is provided in the Contract Documents.

MEASUREMENT AND PAYMENT:

Comply with Subsection 715.04 of MSHA unless noted otherwise on Contract Documents.

The Unit Price payment per the Schedule of Unit Prices will be full compensation for all material, labor, equipment, tools, and incidentals (including any required coordination with utility companies, and the services of the Maryland Registered Tree Care Expert) necessary to complete the work. The work includes removal of debris and/or stockpiling of debris on site for reuse.

CATEGORY 900 – MATERIALS (MSHA-BASED)

GENERAL NOTE: The material specifications of MSHA Category 900 shall apply as referenced in other Specification Sections. The material specifications of MSHA Category 900 are not repeated below. Following are only modifications to the referenced MSHA material specifications:

SECTION 901 – AGGREGATES

1. In addition to conformance with MSHA Section 901 (Tables 901 A and B), aggregate must conform to the following ASTM/AASHTO gradation table (M 43). Washed aggregate and river rock/gravel must also conform to ASTM C-33.

SIZES OF COARSE AGGREGATE, (AASHTO M 43) (inches)																
Size number	Nominal size square openings(1)	Amounts finer than each laboratory sieve (square openings), percentage by weight														
		4	3-½	3	2-½	2	1-½	1	¾	½	3/8	No. 4	No. 8	No. 18	No. 50	No. 100
1	3-½ to 1-½.	100	90 to 100		25 to 60		0 to 15		0 to 5							
2	2-½ to 1-½.			100	90 to 100	35 to 70	0 to 15		0 to 5							
24	3-½ to ¾.			100	90 to 100		25 to 60		0 to 10	0 to 5						
3	2 to 1.				100	90 to 100	35 to 70	0 to 15		0 to 5						
357	2 to No. 4.				100	95 to 100		35 to 70		10 to 30		0 to 5				
4	1-½ to ¾.					100	90 to 100	20 to 55	0 to 15		0 to 5					
467	1-½ to No. 4.					100	95 to 100		35 to 70		10 to 30	0 to 5				
5	1 to ½.						100	90 to 100	20 to 55	0 to 10	0 to 5					
56	1 to 3/8						100	90 to 100	40 to 75	15 to 35	0 to 15	0 to 5				
57	1 to No. 4.						100	95 to 100		25 to 60		0 to 10	0 to 5			
6	¾ to 3/8.							100	90 to 100	20 to 55	0 to 15	0 to 5				
67	¾ to No. 4.							100	90 to 100		20 to 55	0 to 10	0 to 5			
68	¾ to No. 8.							100	90 to 100		30 to 65	5 to 25	0 to 10	0 to 5		
7	½ to No. 4.								100	90 to 100	40 to 70	0 to 15	0 to 5			
78	½ to No. 8.								100	90 to 100	40 to 75	5 to 25	0 to 10	0 to 5		
8	3/8 to No. 8.									100	85 to 100	10 to 30	0 to 10	0 to 5		
89	3/8 to No. 16.									100	90 to 100	20 to 55	5 to 30	0 to 10	0 to 5	
9	No. 4 to No. 16.										100	85 to 100	10 to 40	0 to 10	0 to 5	
10	No. 4 to 0 (2).										100	85 to 100				10 to 30

(1) In inches, except where otherwise indicated. Numbered sieves are those of the United States Standard Sieve Series.
(2) Screenings. Where standard sizes of coarse aggregate designated by two or three digit numbers are specified, the specified gradation may be obtained by combining the appropriate single digit standard size aggregates by a suitable proportioning device which has a separate compartment for each coarse aggregate combined. Blending must be done as directed by the Laboratory.

2. SUBMITTALS: The Contractor must submit, for Owner approval, sample aggregate material a minimum of thirty days prior to starting work.

3. Sand (Fine Aggregate): In addition to conformance with MSHA Section 901 (Tables 901 A and B), sand for bioretention facilities and other applicable infiltration facilities must be double-washed and otherwise conform to ASTM Standard C33 for fine aggregate.

SECTION 919– GEOTEXTILES

1. Geotextile Filter Fabric (Non-Woven): In addition to conformance with MSHA Subsection 919, Non-Woven geotextile filter fabric must conform to Table H.1 in the MDE “2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control.” The fabric must have minimum grab strength of 200 pounds and minimum puncture strength of 450 pounds. Note: This item will not be paid when fabric is incidental to other work (e.g., riprap).

CATEGORY 1000 – GENERAL (NON MSHA-BASED)

GENERAL NOTE: The specification sections in this Category are not based on the MSHA.

SECTION 1000 - UTILITIES

Attention of the Contractor is directed to the presence of water, sewer, gas mains, electrical wires conduit, communications cables, poles and house service connections in the street, highway or shoulder areas (both overhead and underground) in which the project is to be performed. The Contractor shall exercise special care and extreme caution to protect and avoid damage to utility company facilities as described in the preceding sentence. The Contractor shall take into consideration the adjustments and installations by public utilities in the areas within the limits of this Contract. In the event of a water or sewer main break, the Contractor shall immediately notify the WSSC and the County's Project Engineer.

Prior to ordering any storm drain or water/sewer main materials, the Contractor shall locate and test pit (as approved by the County's Project Engineer) any underground facilities that appear to be in conflict in order to determine if conflicts exist. In the event that conflicts may be possible, this information shall immediately be forwarded to Cottage City's representative for review and resolution. Material ordered prior to obtaining test pit information will not be considered in any request from the Contractor for any equitable adjustments due to existing utility conflicts.

At least seventy two (72) hours prior to the placement of any new traffic signal related equipment being installed near existing or proposed utility lines (foundations, poles, etc.), the Contractor shall contact the various utility companies, the Project Engineer, the County's Traffic Signal Engineer, and representatives of the appropriate MSHA agencies to arrange a field meeting to discuss the proposed construction.

The Contractor shall locate all existing utilities and be responsible for their safety. Should any existing utilities be damaged or destroyed due to the operations of the Contractor, the damaged or destroyed components shall be immediately replaced or repaired as necessary to restore the utility to a satisfactory operating condition. These repairs or replacements shall be at no additional expense to Cottage City or the owner of the utility.

The existing utilities requiring relocation or adjustments shall be relocated or adjusted by the agency responsible for their maintenance or by the owner of the utility unless otherwise indicated in the Contract Documents.

The Contractor shall notify all utilities involved, including but not limited to the Washington Suburban Sanitary Commission, the Washington Gas Light Company, the Potomac Electric Power Company, Southern Maryland Electric Power Company, Baltimore Gas and Electric Company and Verizon Maryland, Inc., at least one (1) week prior to starting work on the streets in which there are water, electric, and telephone services so that these organizations may have their representatives present. The Contractor shall assist the utility companies as necessary by providing line and grade for structure adjustments.

Except when otherwise directed by the Engineer, all necessary adjustments to Washington Gas Light Company surface structures will be made using adjustment rings manufactured by Bingham & Taylor. The Contractor shall be responsible for obtaining these items from the utility companies at no cost and will install them at the direction of the Engineer, at no cost to the County.

All surface adjustments to WSSC facilities, such as water and sewer manholes, water valve boxes, etc., must be physical adjustments in accordance with these Special Provisions. The use of rite height adjustment rings on WSSC facilities is not allowed.

The primary supervision and inspection of the adjustment, construction, and/or relocation will be performed by the Engineer in cooperation with the Systems Inspection Group of the Commission. The materials required for the work on the WSSC facilities shall include, but not be limited to: pipe, pipe fittings, manhole frames and covers, tapping assemblies, valves, copper pipe, concrete and backfill material. All materials shall comply with and be constructed in accordance with the WSSC General Conditions and Specifications. (NOTE: Manhole frames and covers and water valve boxes that are in need of replacement shall be provided by the WSSC. Manhole frames and covers and water valve boxes damaged by the Contractor shall be his responsibility to replace.)
Prior to the start of construction, the Contractor shall arrange a meeting with the WSSC representative to walk the project to determine which manhole frames and covers and water valve boxes are damaged and are to be replaced.

The Contractor shall have no claims for any delay that may occur in changing or relocating any of the services. The County will charge any expense to which it may be put by the operations of the Contractor to him and will deduct the same from any monies due or to become due to him. The Contractor will be responsible for any adjustment of utility structures required by the normal prosecution of the work and shall bear the cost thereof.

The Contractor shall also call "Miss Utility" on 1-800-257-7777 at least forty eight (48) hours in advance of construction, between the hours of 7:00 am and 5:00 pm, Monday through Friday.
Working around or protecting existing aerial and underground utilities, regardless of ownership (State, County, public or private); removal of temporary materials from the adjusted utilities prior to the placement of hot mix asphalt; installation of temporary utility service connections; cooperation with the owners of the utilities and with other Contractors will not be measured for payment and the cost will be incidental to the items specified in the proposal.

SECTION 1007 – CERTIFIED TESTING AND INSPECTION SERVICES

DESCRIPTION:

The Contractor must provide Certified Inspection and Testing services as required to determine all material compliance with Contract and Project Document requirements including testing and inspection services required by Project permits. These services include but are not limited to: allowable soil bearing pressures, compaction tests, verification of adequacy of fill material, and concrete material testing as specified on the Contract and Project Documents.

MATERIALS: NA

CONSTRUCTION:

The provider(s) of all inspection and testing services, including geotechnical and/or structural inspection and testing services, must be approved by the Owner prior to commencement of the Work. All inspection and testing reports, including geotechnical and material reports must be clearly produced and submitted by the Contractor to the Owner and Engineering Consultant as part of the construction Record Documents.

The Contractor must provide compaction and geotechnical analysis of fill material placed under this Contract.

This Section requires the services of a Certified Engineer registered in the State of Maryland as well as the technical staff under the supervision of the Certified Engineer conducting soil tests in accordance with the requirements of the Contract Documents.

MEASUREMENT AND PAYMENT:

Certified Testing and Inspection Services will not be paid for separately; they shall be included in the unit costs for related line items requiring inspection(s) and/or testing.

Payment for related line items may be withheld by the Owner pending receipt of certified inspection/testing reports indicating compliance with Contract and Project Documents.

SECTION 1012 – GRAVEL FILTER MEDIA

Line Item 1012-01: MSHA Washed No. 57 Stone (CY)

DESCRIPTION:

This work consists of providing and installing washed gravel filter media in Sand Filters, Bioretention and other filtration stormwater facilities.

MATERIAL:

Unless otherwise noted, the gravel surrounding underdrain pipes must meet MSHA size #57 stone (MSHA 901) as specified on Contract Documents. Gravel must be washed prior to installation.

CONSTRUCTION:

Installation must provide a minimum of 6 inches of cover around underdrain pipes and must be in accordance with the requirements stated in the Contract Documents and other Sections of these specifications.

PAYMENT:

Gravel Filter media shall be paid at the Unit Price shown on the Schedule of Unit Prices. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to satisfactorily complete the work.

CATEGORY 2000 – ALLOWANCES

Delete this note before finalizing specifications.

SECTION 2001 – GENERAL ALLOWANCE

Line Item 2001-01: General Allowance (LS)

DESCRIPTION: This Section provides administrative and procedural requirements for a General Allowance (in the amount of $115,000.00) for additional work within the general scope of the Work.

An Allowance is a monetary contingency amount established in the Project Documents and included in the Project Sum to compensate the Contractor for its performance of additional Unit Price Work, if any, consistent with the Project Documents, upon written direction from the Contract Administrator.

An Allowance shall only be used for Work already defined by Unit Prices in the Project. Reference the Contract for other Change Work.

EXECUTION: Additional work, utilizing the General Allowance, must be approved in writing by the Contract Administrator prior to the performance of any additional work.

The General Allowance shall be adjusted (reduced) based on the increase of line item quantities, above the Project quantity, multiplied by pre-determined Unit Prices in the Contract.

The Contractor, upon its discovery of an overrun in the quantities of any line item(s) in the Project Sum must notify the Contract Administrator of its discovery and must, upon request, provide all supporting documentation justifying the overrun. The work covered by an Allowance must be purchased on the basis of the Unit Price(s) specified in the Contract Documents. Upon the County's verification and approval of the overrun and overrun amount, the County will direct the Contractor, in writing, to reduce the Allowance by the amount of the overrun. **All invoices submitted after such written direction must indicate the reduction in the Allowance and the change (increase) in referenced line item quantities.**

The Contractor must submit all invoices and/or delivery slips to justify actual quantities of line item work.

All time required for the performance of work covered by the General Allowance is conclusively presumed to be included in the Contract (or Project) Time. For other Change Work, the Contractor must demonstrate a Delay and request an extension of time in writing in accordance with the Contract.

At the end of the Contract, the Contract Sum must be reduced by an appropriate Contract Modification to reflect the deletion of any remaining value in the Allowance.

Use any contingency allowance only as directed in writing by the Contract Administrator.