

TECHNICAL SPECIFICATIONS
ASPHALT PAVING, SITE WORK & SURFACE TREATMENT

1. All work and materials shall be in strict accordance with the [Virginia Department of Transportation Roads and Bridges Specifications](#) for project work and/or [Fairfax County Public Facilities Manual \(PFM\)](#).
2. The Fairfax County Municipal Separate Storm Sewer System (MS4) permit requires the County streets, roads, and parking lots be operated and maintained in manner to minimize pollution to the storm drainage system and waterways, among other things. All work must abide by applicable Fairfax County Standard Operating Procedures (SOPs) to comply with these requirements (Reference Attachment D).
 - a. The Roadway and Parking Lot Construction and Maintenance SOP focuses on specific activities related to roadway and parking lot construction and maintenance that are undertaken by County personnel and/or contractors on County property (Reference Attachment D).
3. If debris, spills, foreign matter, or other pollutants enter into storm drainage structures, storm channels or streams the Contractor is responsible for its immediate removal. If the County has to remove the substance, it will do so at the Contractor expense.
4. On an as needed basis a survey-crew will be required for specific projects. When a survey-crew is requested, the contractor will provide a separate quote with complete price break down appropriate to accomplish the task. Prices on the quote will be mutually agreed upon between the department and the Contractor. The survey-crew must be licensed in the State of Virginia. The department requesting a survey-crew will provide price reasonableness to the contract specialist when requiring this service.
5. Most of the trail inventory is 8 feet wide or less. Typically, trails in parkland are 8 feet wide and walkways are around 5 feet wide for the older trails. These trails typically meander around trees and other features so that large equipment has not been practical to use on trails in the past. Also trail construction in parkland may experience poorly drained soils, heavy vegetation, stream crossings and high water table conditions, all of which should be considered in the Part 2, Section 2 unit prices. Also, parking lot work may require smaller equipment. The residential and service drive road paving work allows for access and usage of large paving equipment.

Note: Many Fairfax County Department of Transportation and some Park Authority trails are now 10 feet wide; however, they still require the use of small equipment.
6. This contract will be used for repairs on a combination of trails, parking lots and for residential roads and service drives along arterial roads such as Route 1. The County does not anticipate using this contract for repairing of arterial roadways other than the adjoining service drives that were aforementioned.

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SECTION 02510: ASPHALT TRAIL

1. GENERAL:

- 1.1. All work under this section is subject to the Special Provisions and General Conditions and Instructions to Bidders which form a part of these specifications, and to be the current editions of the [Fairfax County Public Facilities Manual](#) and [Virginia Department of Transportation Road and Bridge Specifications \(VDOT\)](#). The Contractor shall be responsible for and governed by all the requirements thereunder.

2. SCOPE:

- 2.1. The work consists of the construction of all asphalt trails, including excavation, sub-grade preparation, and finishing, in accordance with the applicable plans and as specified herein.

3. GENERAL REQUIREMENTS:

- 3.1. Construction of the trails shall be done only after excavation and construction work that might damage them has been completed. Damage caused during construction shall be repaired before acceptance by the Owner.
- 3.2. The Contractor shall stake the trail centerline for approval by the Owner prior to construction of the trail.
- 3.3. Existing paved areas, if damaged or removed during the course of this project, shall be repaired or replaced, except as otherwise noted. Workmanship and materials for repair and replacement, except as otherwise noted, shall conform to the specifications herein. Repairs of existing paved areas will not be considered as a basis for additional compensation (Change Order).
- 3.4. Submittals: Product Data, material certificates, and the following:
- a. Job-Mix Designs: For each job mix proposed for the Work.
- 3.5. Installer Qualification: Engage an experienced installer who has completed hot-mix asphalt paving similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
- 3.6. Manufacturer Qualifications: Manufacturer of hot-mix asphalt shall be a registered and approved paving mix manufacturer with authorities having jurisdiction or with VDOT.
- 3.7. Regulatory Requirements: Conform to applicable standards of FCPA and VDOT for asphalt paving work on public property.
- 3.8. Environmental Limitations: Do not apply asphalt materials if substrate is wet or excessively damp or if the following conditions are not met:
- a. Tack and Prime Coats: Per VDOT Sections 310 and 311 respectively
 - b. Asphalt Base Course: Per VDOT Section 315.
 - c. Asphalt Surface Course: Per VDOT Section 315.
- 3.9. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40° F for oil-based materials, 50° F for water-based materials, and not exceeding 95° F.
- 3.10. **AIR POLLUTION NOTE: The use and application of cut-back asphalt for paving is prohibited during April through October (9VAC – 5 -40 – 5510).**

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4. MATERIALS:

- 4.1. Aggregate base course shall be VDOT Section 208, Type I, Grade No. 21B material.
- 4.2. Stabilization fabric shall be Mirafi 500x, Propex GEOTEX 200ST or approved equal.
- 4.3. VDOT #1 aggregate per VDOT Section 203.
- 4.4. Base course shall be VDOT Section 211, type BM – 25.0 material.
- 4.5. Surface Course shall be VDOT Section 211, Type SM 9.5A asphalt concrete.
- 4.6. Prime Coat shall be low viscosity asphalt such as MC-30 or MC-70 and conform to VDOT Section 210.
- 4.7. Tack Coat shall be VDOT Section 210, Type RC 250.
- 4.8. Pavement-Marking Paint: Alkyd-resin type, ready-mixed, complying with FS TT-P-115, Type I, or AASHTO M-248, Type N.

5. CONSTRUCTION:

- 5.1. The Contractor will stake the trail centerline for approval by the Owner prior to construction of the trail.
- 5.2. Clearing:
 - a. The Contractor following field location of the trail centerline will flag clearing limits for trail construction. The Contractor will obtain approval of the clearing limits from the Owner prior to starting clearing operations for trail construction.
 - b. Areas to be paved shall be cleared of all roots, sod, mulch and other debris not part of the soil, to a depth of at least one-foot below finished grade.
- 5.3. Sub-grade Preparation:
 - a. Sub-grade shall be constructed in accordance with VDOT Section 305.
 - b. The Contractor shall notify the Owner if the sub-grade is found to be unsuitable for adequate leveling and compaction due to moisture content or other conditions.
 - c. Types 1 Trail — Excavation required in the sub-grade shall be completed before fine grading and compaction is performed. When excavation must be performed in completed sub-grade, subsequent backfill and compaction shall be performed as directed by the Owner. Completed sub-grade, after filling and compaction, shall be uniformly and properly graded and have a uniform stable density.
 - d. Existing sub-grade material that will not readily compact as required shall be removed and replaced with satisfactory material. Additional material needed to bring sub-grade to required line and grade and to replace unsuitable material removed shall conform to this section.
 - e. Excavation required in the sub-grade shall be completed before fine grading and compaction is performed. When excavation must be performed in completed sub-grade, subsequent backfill and compaction shall be performed as directed by the Owner. Completed sub-grade, after filling and compaction, shall be uniformly and properly graded and have a uniform stable density.
 - f. Material shall not be stored or stockpiled on prepared sub-grade.
 - g. Disposal of debris and other material excavated and/or stripped under this section, and material unsuitable for or in excess of requirements for completing work of this section shall be disposed of off-site by the Contractor.

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- h. The Owner before placement and preparation of the aggregate base course shall approve graded and compacted sub-grade.
 - i. Type 2 Trail listed in the pricing schedule— After completion of work defined in 5.2, all soil shall be smooth graded, and compacted to the highest percent that the conditions will allow. Upon owner's approval of this subgrade, the contractor will then be allowed to proceed with the installation of the stabilization fabric and the installation and compaction of the VDOT #1 aggregate.
- 5.4. Aggregate Base Course:
- a. Construction of the aggregate base course and shoulders shall conform to VDOT Section 309.
 - b. The aggregate base course shall not be placed on muddy or frozen sub-grade.
 - c. The compacted aggregate base course shall be a minimum of four inches.
 - d. Base course material that will not readily compact as required shall be removed and replaced with satisfactory materials. Additional materials needed to bring base course to required line and grade and to replace unsuitable material removed shall conform to this section.
 - e. Aggregate used to stabilize poor sub-grade conditions shall be applied in lifts less than or equal to six inches thick, compacted measure. Each lift shall be separately compacted to the specified density.
 - f. Rolling shall begin on the low side and progress toward the high side of the trail cross section. Rolling shall continue until material does not creep or wave ahead of roller wheels.
 - g. Surface irregularities that exceed 1/2 inch as measured by means of a 10-foot long straightedge, shall be replaced and properly compacted.
 - h. The sub-grade and base course shall be kept clean and uncontaminated. Less select materials shall not be permitted to become mixed with gravel. Materials spilled outside pavement lines shall be removed and the area repaired.
 - i. All drainage pipe and structures shall be placed in conjunction with the base course application as located on the plans. Pipe shall be installed and completely covered by compacted base course prior to placement of asphalt surface course.
 - j. The Owner before placement of the asphalt surface course shall approve graded and compacted aggregate base course.
- 5.5. Surface Course:
- a. Construction of the asphalt concrete surface course shall comply with VDOT Section 315. Compaction and rolling shall comply with VDOT Specifications.
 - Asphalt shall be placed when the base temperature is 40 degrees Fahrenheit and above. Base temperature readings shall be taken before paving and sent to the Project Manager for confirmation.
 - Asphalt temperature readings shall be taken at the hopper before paving and sent to the Project Manager for confirmation. Asphalt shall not be placed if the SM-9.5 Hot Mix is less than 200 degrees Fahrenheit as measured at the hopper.
 - b. The asphalt concrete shall be uniformly spread and compacted to a depth of two inches, minimum.

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- c. Deliveries shall be timed to permit spreading and rolling all material during daylight hours, unless artificial light, satisfactory to the Owner is provided. Loads that have become wet shall not be accepted. Hauling over freshly laid or rolled material will not be permitted.
- d. In places not accessible to a roller, the mixture shall be compacted with hand tampers. Hand tampers shall weigh a minimum of 50 lb. and shall have a tamping face less than or equal to 100 sq. in. Mechanical tampers capable of equal compaction will be acceptable in areas in which they can be employed effectively.
- e. Portions of pavement courses that become mixed with foreign material or are in any way defective shall be removed, replaced with fresh mixture, and compacted to density of surrounding areas. Asphalt concrete spilled outside the lines of finished pavement shall be immediately and completely removed. Such material shall not be employed in the work.
- f. Joints shall present the same texture, density, and smoothness as other sections of the course. A continuous bond shall be obtained between portions of existing and new pavements and between successive placement of new pavement. New material at joints shall be thick enough to allow for compaction when rolling. Compaction of pavement, base, and sub-grade at joints shall be such that there is no yielding of new pavement relative to existing pavement when subjected to traffic.
- g. If more than seven days since tack coat has been placed, the contact surfaces of previously constructed pavement, manholes, and similar structures shall be thoroughly cleaned and painted with a thin uniform coating of tack coat immediately before new asphalt concrete is placed.
- h. Variations in smoothness of the finished surface shall be less than or equal to 1/4 inch when tested with a 10-foot straightedge, applied both parallel to and at right angles to the centerline of the trail. At joints with existing pavement, and at other locations where a flush transition is required, the pavement elevation tolerance shall not exceed 1/4 inch following VDOT standards for dust control. Irregularities exceeding these amounts or which retain water on the surface shall be corrected by removing defective work and replacing it with new material conforming to this section.
- i. Finished surfaces of pavement shall have a minimum cross slope of 1/4 inch per 1 foot and a maximum of 3/4 inch per 1 foot. The trail surface shall not be crowned.

5.6. Junction and Taper:

- a. When a new asphalt trail meets an existing gravel trail, the end of the asphalt section shall be sloped gradually over a minimum three-foot distance and backfilled with VDOT Section 203, No. 10 coarse aggregate to create a smooth junction. Backfill shall be compacted to 90% capacity.
- b. When a new asphalt trail meets an existing asphalt trail, the two shall meet with a flush butt joint. The contact area of the old trail shall receive tack coat prior to placement of the new asphalt. The junction shall be smooth and square. The difference in elevation between the new and existing trail sections shall not exceed 1/4 inch.