

IV. ARLINGTON COUNTY DES ENGINEERING-SPECIAL CONDITIONS

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PROJECT SUMMARY

CAPITAL IMPROVEMENT PROJECT WORK TO CONSIST OF STREETScape IMPROVEMENTS AT TWO (2) INTERSECTIONS WITH 18th STREET N. THESE INTERSECTIONS INCLUDE N. GLEBE ROAD AND N. WAKEFIELD ST. WORK WILL INCLUDE CONSTRUCTION OF: ROAD PAVING AND ASPHALT WORK, CURBS & GUTTERS, SIDEWALKS, WALKWAYS, CURB EXTENSIONS, ACCESSIBLE RAMPS, DRIVEWAY APRONS, STORM SEWER PIPES AND INLETS, RETAINING WALLS, IRRIGATION PIPING, PAVEMENT MARKINGS AND SIGNAGE, TRAFFIC CONTROLS, EROSION AND SEDIMENT CONTROLS, SIGNALIZATION UPGRADES AND RELATED SITE WORK, AND ALL OTHER RELATED INCIDENTAL WORK DESCRIBED AND REQUIRED IN THE CONTRACT DOCUMENTS.

The Contractor shall provide all resources to successfully perform the terms of this contract in accordance with project plans, and in compliance with Arlington County and VDOT Standards and Specifications. The Contractor shall perform the work complete, in place, tested, and ready for continuous service.

All work within the VDOT Right-Of-Way shall be performed in accordance with the VDOT Standards and Specifications, unless otherwise noted. All work within the County Right-Of-Way shall be in accordance with the Arlington County Standards and Specifications, unless otherwise noted.

SUPPLEMENTS TO THE GENERAL CONDITIONS

These Conditions modify the Arlington County Construction General Conditions. All provisions that are not modified or deleted by these Supplemental Conditions shall remain in full force and effect.

The address system used in these Supplemental Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

ARTICLE B – DRAWINGS, SPECIFICATIONS AND RELATED DATA

SC-B.10 TESTS

Add the following new language to Paragraph B.10:

All materials testing shall be in compliance with the Arlington County Materials Testing Specification Reference Guide. This document specifies the method and frequency of testing for Arlington County projects. A copy of this document is included in the bid documents. This shall be incidental to the work and no separate payment will be made.

The Contractor shall engage the services of a geotechnical company, acceptable to both the County and VDOT, to conduct all materials testing per the County and VDOT Specifications.

If it is observed that samples for testing are being improperly taken or that samples are being taken from an area that is not fully representative of all project conditions, then Contractor shall take and test additional samples at the County Project Officer's request from areas designated by the County Project Officer and at the Contractor's expense.

In addition, the Contractor shall provide the County with unfettered site access as needed for VDOT/County personnel or VDOT/County consultants to enter the site, inspect, and perform any additional testing for any and all materials (including soil, concrete, asphalt, etc.).

Compaction results must meet VDOT Specifications and be certified by a Geotechnical Engineer licensed in Virginia. This work shall be at no cost to the County.

SC-B.13 SURVEYS AND CONTROLS

Delete Paragraph B.13 in its entirety and insert the following in its place:

Unless otherwise stated, the County will provide horizontal and vertical reference points necessary for the Contractor to proceed with the Work. The Contractor shall carefully preserve all reference points, and in the case of destruction thereof by the Contractor or due to the negligence of the Contractor or of any subcontractor, the Contractor shall be responsible for expense and damage resulting therefrom and shall be responsible for any mistakes or construction errors that may be caused by the loss or disturbance of such reference points. The Contractor shall be responsible for laying out the Work and shall retain a professional land surveyor licensed in the Commonwealth of Virginia to survey and provide all necessary construction layouts and to establish all control lines, grades, and elevations during construction.

SC-B.14 RECORD DRAWINGS

The Contractor shall maintain a set of red-line drawings. Red-line drawings shall be in accordance with Supplemental Specification 01720, Project Record Documents. A copy of the red line drawings showing work completed shall be submitted monthly to the County prior to the issuance of the monthly progress payment.

For storm, sanitary and water main installations performed with this contract, the contractor shall provide Arlington County with As-Builts that are in accordance with Arlington County DES Construction Standards and Specifications Section 02550, Section 3.3; and Section 02500, Part 3.

ARTICLE C – COUNTY, COUNTY PROJECT OFFICER, AND CONTRACTOR RELATIONS

SC-C.1 STATUS OF COUNTY PROJECT OFFICER OR DESIGNEE

Add the following new language to Paragraph C.1:

The County Project Officer will coordinate and consult with the VDOT Field Inspector as appropriate when working within the VDOT Right-Of-Way.

SC-C.4 INSPECTION OF WORK

Add the following new language to Paragraph C.4:

Contractor shall notify the Project Officer at least 3 working days prior to disturbing any existing, or installing any new, traffic signs, signals, or other traffic control devices. The Contractor shall allow 3 working days for the inspection and approval of the pre-markings prior to placing the permanent markings.

SC-C.9 SUPERINTENDENCE BY CONTRACTOR

Add the following new language to Paragraph C.9:

Emergency Contact:

The Contractor shall have a qualified and experienced person who can clearly communicate technical matters regarding the subject project. This person shall be available via phone to respond to emergency situations on the project 24 hours a day.

Site Supervisor:

The Contractor shall have a qualified and experienced site supervisor who can clearly communicate technical matters on-site at all times when construction activity is occurring or when the site is not in a secure state.

Safety Project Officer:

The Contractor shall have at least one (1) employee certified by VDOT in Advanced Work Zone Traffic Control to be submitted with the proposal, on-site at all times that work is occurring and be responsible for the following:

- Placement, maintenance, and removal of work zone traffic control devices,
- Compliance with permit requirements and conditions, approved plans and specifications, the Virginia Work Area Protection Manual, and the Manual of Uniform Traffic Control Devices.

For each task order, the Contractor shall have at least one (1) employee certified in both OSHA 10 and OSHA 40, to be submitted with the proposal, on-site at all times that work is occurring. The employee shall have served as a Project Safety Officer on at least three (3) prior projects. If the contractor has multiple employees with these requirements, the Contractor shall clearly identify which employee shall serve as the Project Safety Officer.

Environmental Project Officer:

For each task order, the Contractor shall have at least one (1) employee that has successfully completed the VDOT Erosion & Sediment Control Contractor Certification training. The contractor employee shall be

on-site during all land disturbance activities. The Contractor shall be responsible for ensuring compliance with all applicable local, State, and Federal erosion and sediment control regulations and permits during land disturbance activities.

If the Contractor proposes to deviate from the approved Erosion and Sediment Control Plan, it shall be the Contractor's responsibility to coordinate and obtain approval from the County Project Officer prior to implementing any changes.

SC-C.11 LANDS BY COUNTY

Add the following new language at the end of C.11:

The Contractor shall confine all activities at the site associated with construction activities, to include storage of equipment and or materials, access to the work, formwork, etc. To within the designated Limits of Disturbance (LOD).

SC-C.13 PROTECTION OF WORK AND PROPERTY

Add the following new language to Subparagraph C.13.c:

The Contractor shall be responsible for all damages caused by their construction activities. The Contractor shall perform or provide repairs, replacements, and restoration to all property that has been damaged resulting from construction operations performed by the Contractor, and shall meet the following requirements:

1. Restore all areas to conditions that existed prior to construction. Remove and Replace damaged items with items equal to or better than the damaged items.

Add the following new language to C.13:

- g. The contractor shall contact "Miss Utility" at 811 for marking the locations of existing underground utilities (i.e. Water, sewer, gas, telephone, electric, and cable tv) at least 72 hours prior to any excavation or construction. The contractor is required to identify and protect all other utility lines found in the work site area belonging to other owners that are not members of "miss utility". Private water and/or sewer laterals will not be marked by "Miss Utility" or the County. The contractor shall locate and protect these services during construction.

ARTICLE E – LEGAL RESPONSIBILITY AND PUBLIC SAFETY

SC-E.1 SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK

Add the following new language at the end of E.1:

When construction activity reaches in proximity to existing utilities, the trench(es) shall be opened a sufficient distance ahead of the work or test pits shall be made to verify the exact location and inverts of the utility to allow for possible changes in the line or grade as directed by the Project Officer. This shall be incidental to the work and no separate payment shall be made.

SC-E.2 PUBLIC CONVENIENCE

Add the following new language to Paragraph E.2:

The Contractor shall set up controls at the beginning of each work day and take down controls at the end of each work day for the duration of the project. At all times the Contractor shall maintain safe two-way vehicular traffic, and safe accessible pedestrian traffic in conformance with County and VDOT standards. At the end of each work day, the road surface shall be brought flush with the adjacent surface using hot mix asphalt. A minimum of 4" of hot mix asphalt shall be installed. All lanes shall be open for traffic during non-work hours unless otherwise directed in writing by the Project Officer. The Contractor shall maintain all road surfaces within the work area to provide a smooth drivable surface with no significant potholes, dips, or bumps of any kind. Installation and maintenance of temporary repairs shall be considered incidental to the Contract and therefore no additional payment shall be made for this work.

At all times the Contractor shall use the personnel and traffic control signs and devices necessary to comply with the Virginia Work Area Protection Manual and Part VI of the "National Manual on Uniform Traffic Control Devices." The Contractor has sole responsibility for ensuring that its operations are conducted in a safe manner and notwithstanding any other provision to the contrary, shall fully indemnify Arlington County, its officers, agents and employees for any damage or injury related to traffic operations which is caused by negligent or otherwise improper or deficient performance under the Contract or nonperformance of the terms of the Contract. All personnel, signs, barricades and any other items necessary for the maintenance of traffic and safety shall be provided by the Contractor.

When conditions warrant due to traffic volumes, patterns, or special events, the County may suspend or otherwise direct the Contractor's activities to protect the public and or the County's transportation network.

When the project includes a VDOT and/or County approved MOT Plan (or Plans), the Contractor shall strictly abide by this plan. If the Contractor proposes to deviate from the approved MOT Plan for a County road, it shall be the Contractor's responsibility to coordinate and obtain approval from the County Project Officer prior to implementing any changes. If the Contractor proposes to deviate from the approved MOT Plan for a VDOT road, it shall be the Contractor's responsibility to coordinate and obtain approval directly from VDOT prior to implementing any changes.

Prior to any lane closures within the VDOT Right-of-Way, the County Project Officer and VDOT Field Inspector must be notified in advance of such lane closure in accordance with VDOT requirements. The Contractor shall not be entitled to any additional payment for changes to MOT which are the result of the Contractor's work schedule or resource allocation, weather delays, or other factors not controlled by the County.

Failure of the Contractor to correct any MOT deficiency immediately upon notification may result in the project being shut down until the deficiency is corrected, and a reduction from the amount of payment due in the amount of \$1,000.00 per violation. Repeated violations of this provision may result in contract termination.

The Contractor shall install project information signs (size - 36"x48") at least two (2) different locations for each site. Signs will be supplied by the County. Sign posts and incidentals necessary for a complete

installation of the signs shall be furnished by the Contractor. Signs shall be installed at least two (2) weeks prior to the start of the construction. The Contractor shall coordinate the location of the signs with the Project Officer. After the project has been completed the Contractor shall remove and return the signs to the County Project Officer. The cost for this work shall be considered incidental to other items within the Contract and no separate payment will be made.

At the close of each work day, the area of work shall be confined to the smallest area possible, but in no event larger than the area designated in the Construction Documents, so that the maximum use of the street and sidewalk shall be restored and the hazard to traffic reduced to the minimum.

The Contractor shall preserve all bus stops, including maintaining adequate accessibility through and adjacent to the construction for buses and their passengers. The Contractor shall not close, relocate, or otherwise modify a bus stop without prior request of the Project Officer. Any relocation or closure of a bus stop will require at least four weeks advance notice for coordination with the county's bus stop coordinator.

SC-E.10 SITE CLEAN-UP AND WASTE DISPOSAL

Add the following new language to Paragraph E.10:

The County's Earth Products Recycling Yard (located at 4300 29th Street South, Arlington, VA) shall not be used on an as-needed basis for unspecified quantities of waste (due in part to the limited size of the Yard). Although atypical, the Yard may be considered, on a case-by-case basis, for disposal of specific types/quantities of waste from County construction projects. In such cases disposal arrangements must be approved by the County Project Officer, be made in advance, depend on available space and the type/quantity of waste, and comply with certain requirements (for example, concrete shall be broken into pieces no longer than 24" in any dimension, contain less than 20% soil content, and be free of rebar).

SC-E.11 STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

Delete Paragraph 2.

ARTICLE F— PROGRESS AND COMPLETION OF THE WORK

SC-F.2 TIME FOR COMPLETION

Delete Paragraph F.2 and replace with the following language:

It is hereby understood and mutually agreed by and between the Contractor and the County that the Commencement Date, the rate of progress, and the Time for Completion of the Work to be done hereunder are essential conditions of the Contract. The Contractor agrees that the Work shall be started promptly upon receipt of a written Notice to Proceed in accordance with the accepted schedule. Additional time shall not be allowed for holidays or weather delays except as allowed in the contract.

ARTICLE G— MEASUREMENT AND PAYMENT

SC-G.1 PAYMENTS TO CONTRACTOR

Delete Section G.1 and replace with the following language:

The County will make partial payments, to the Contractor monthly on the basis of the Contractor's written estimate of the work performed during the preceding calendar month as approved by the Project Officer or designee. The Contractor's application for payment shall indicate the amount of work completed to date in a format consistent with the accepted bid and as indicated below:

- a. Lump Sum: For lump sum contracts, the Contractor shall provide to the Project Officer a Schedule of Values, and the application for payment will reflect the Schedule of Values and the amount of work completed in those units

For contracts that include multiple lump sum line items, the application for payment shall reflect the percentage of work completed for each lump sum item. If requested by the Project Officer, the Contractor shall provide a Schedule of Values for each lump sum line item in the contract.

- b. Unit Price: The schedule of unit prices in the accepted bid shall be used as the basis for preparing the estimates, and each partial payment shall represent the total value of all units of work completed, computed at the unit prices stated in the Contract, less the aggregate of previous payments.

If Stipulated Price Items are included in the contract, Work on such Stipulated Price Items shall be carried out only upon written order by the Project Officer. The payment for a Stipulated Price Item shall be made by the County to the Contractor at the related unit price specified in the 'Stipulated Price Items' section of the Bid Form on the same basis as the payment for any other regular Bid Item.

In addition to the amount of work completed to date, the application for payment shall indicate the aggregate of all previous payments for each line item and the total payment requested this period.

The Contractor's application for payment will not be reviewed or processed unless an updated schedule is attached. The pay application shall also contain a certification by the Contractor that due and payable amounts have been paid by the Contractor, including payments to subcontractors, for work which previous payment was received by the Contractor from the County.

Payments will be based on actual quantities and site measurements of the approved work taken in the field by the County Project Officer using the Contract Unit Prices. Any Work that is not shown on the approved plans that has not been previously authorized in writing by the Project Officer shall be at the Contractor's expense, and at no cost to the County

No additional payment for any incidentals will be made unless specifically requested through, and authorized by, the County Project Officer prior to the work. Such determination of additional payment will be at the sole discretion of the County Project Officer and will be based upon the determination that there exist exceptional conditions which will necessitate significant expenditures of material and/or labor above and beyond the typical installation conditions which could be anticipated in Arlington County.

SPECIAL CONDITIONS

These Special Conditions augment the General Conditions and include any project-specific requirements.

1. CONSTRUCTION STANDARDS

All work shall conform to project plans and specifications along with the current edition of following County and VDOT construction standards and specifications:

- **The Arlington County Department of Environmental Services (DES) Bike Parking Standards**, a copy of which may be downloaded at no charge from the internet at: <https://info.arlingtontransportationpartners.com/arlington-county-bike-parking-standards>
- **The Arlington County Department of Environmental Services (DES) Construction Standards and Specifications**, a copy of which may be downloaded at no charge from the internet at: <http://topics.arlingtonva.us/building/construction-standards-specifications/>
- **The Arlington County Department of Environmental Services (DES) Traffic Signal Specifications**, a copy of which may be downloaded at no charge from the internet at: <https://transportation.arlingtonva.us/traffic-signal-specification-updates/>
- **The Arlington County Department of Environmental Services (DES) Streetlight Specifications**, a copy of which may be downloaded at no charge from the internet at: <https://transportation.arlingtonva.us/streets/street-lights/lighting-standards-specifications-updates/>
- **The Arlington County Department of Environmental Services (DES) Pavement Marking Specifications**, a copy of which may be downloaded at no charge from the internet at: <http://transportation.arlingtonva.us/streets/traffic-signals/>
- **The Arlington County Department of Parks and Recreation (DPR) Specifications**, a copy of which may be downloaded at no charge from the internet at: <http://parks.arlingtonva.us/design-standards/>
- **The Virginia Department of Transportation (VDOT) Road and Bridge Standards and Specifications**, a copy of which may be downloaded at no charge from the internet at: http://www.virginiadot.org/business/locdes/Standards_TOC.asp and <http://www.virginiadot.org/business/const/spec-default.asp>
- **The Virginia Work Area Protection Manual (WAPM)**, a copy of which may be downloaded at no charge from the internet at: <http://www.virginiadot.org/business/trafficeng-WZS.asp>
- **Manual on Uniform Traffic Control Devices (MUTCD)**, a copy of which may be downloaded at no charge from the internet at:

http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/pdf_index.htm

- **The Arlington County Department of Environmental Services (DES) Dechlorination and Disposal Procedures**, a copy of which may be downloaded at no charge from the internet at: <http://topics.arlingtonva.us/building/discharging-chlorinated-water/>
- **The Supplementary Specifications listed within the Contract.**

In case of a discrepancy, the following order of priority will apply, with the highest governing item appearing first and the least governing item appearing last: The Contract Bid Items, Special Conditions Contract Drawings, Supplemental Specifications, Arlington County Construction Standards and Specifications, External Agency Specifications.

2. PERMITS

Permits required for the project include, but are not limited to:

- **County Land Disturbing Activities (LDA) permit**
- **County Public Right-Of-Way (PROW) permit**
- **County Transportation Right-Of-Way(TROW) permits**
- **County Water Meter and Fire Hydrant permits**
- **VDOT Land Use permit**
- **VDOT Open Cut permit**
-

All fees for County permits will be waived by Arlington County, and fees for non-County permits will be paid by Arlington County.

The County will obtain the County LDA permit, the County RPA permit, VDOT Land Use permit, VDOT Open Cut permit, VSMP Permit and then NVRPA permits prior to the start of work. The Contractor shall transfer the County LDA permit, VDOT Land Use Permit, VDOT Open Cut permit and the VSMP Permit in the Contractors name as the permittee and/or responsible party prior to the start of Work. The Contractor shall complete and sign the VDOT forms and submit to the County Project Officer for submission to VDOT two weeks prior to the start of Work within VDOT ROW.

The Contractor shall provide a Responsible Land Disturber (RLD) that meets all the required qualifications of the permits. The Contractor shall complete and sign the RLD certificate and submit to the County Project Officer prior to the start of Work.

The Contractor shall obtain the County PROW permit, the County TROW permits and the County Water Meter and Fire Hydrant permits. The Contractor is responsible for investigating and satisfying all permit requirements for the above-mentioned permits.

3. SPECIAL CONTRACTOR/SUBCONTRACTOR QUALIFICATIONS

The Contractor shall have three (3) continuous years of services construction contract experience conducting public works infrastructure and street improvement projects in an urban environment. The experience shall be work of similar size and scope, construction, re-construction, and maintenance. The Contractor obtained project experience shall consist of the following:

- State and County streets
- Curbs and gutters
- Sidewalks and walkways
- Driveway aprons
- Storm sewer pipes and inlets
- Wet Utilities
- Pavement markings and signage
- Electrical conduits
- Traffic signals and Street lighting
- Streetscapes and related site work

The Contractor shall provide a complete list of projects completed within the last five (5) years with reference contact information for each project for Bidder qualification verification. Failure to qualify according to the foregoing requirements will result in bid rejection by the Arlington County Purchasing Office. The County will randomly contact at least five (5) of the references provided.

4. RFIs AND SUPPLEMENTAL INSTRUCTIONS

Request for Information (RFIs) shall be submitted in writing by the Contractor using a County RFI form (*sample attached for information only and which is subject to change at the County's discretion*) and transmitted via email to the County Project Officer. Only the Contractor, and not Subcontractors, shall submit RFIs.

RFIs shall only be used to request interpretation or clarification of apparent issues or problems found within the contract documents. The Contractor shall clearly identify and detail the issue and provide its own interpretation within the RFI. Upon receipt of the RFI, the County shall respond to the Contractor via email within five (5) business days.

The following are not considered RFI's and may be rejected by the County if submitted as an RFI by the Contractor:

- Routine project correspondence
- Material or shop drawing submittals
- Substitution requests
- Change orders
- Responses to non-conformance notices

- **Similar project communications**

Responses to RFIs shall not be construed as authorization for a change order.

The County may initiate a change to the contract by noting in the RFI response that a change order will be required. If the Contractor considers an RFI response to be a change to the contract, then the Contractor must notify the County Project Officer in writing immediately.

If changes occur after the individual project assignment is awarded that affect the project plans and specifications, and such change does not affect the contract schedule or cost, then a supplemental instruction may be issued by the County. Supplemental instructions are formal notifications to the Contractor providing additional instructions or to order minor project changes. These adjustments to the project plans and specifications may be the result of RFIs, value engineering, recognition of error/omission, changed conditions, requests for substitutions, etc.

5. WEB-BASED RECORDS DOCUMENTATION

Unless instructed otherwise, the Contractor shall use the web based construction management tool, e-Builder for, but not limited to, submittals, record keeping and document storage of all construction files including, invoices, pay applications, RFIs, approved shop drawings, change orders, construction progress meeting minutes, warranties, equipment specifications and brochures, record drawings, automated alerts and reminders for all functions, and Operation and Maintenance (O&M) Manuals.

6. STAKEOUT AND CUT-SHEETS

The Contractor shall be responsible for laying out the work and shall retain a professional land surveyor licensed in the Commonwealth of Virginia to provide all necessary construction layouts and establish all control lines, grades, and elevation during construction. The Contractor shall submit a copy of all cut-sheets for review, per the Arlington County Specifications. All cut-sheets for layout and construction shall be provided as submittals at least seven (7) calendar days prior to construction of the work included on that cut-sheet. The cost of all necessary surveying services shall be considered incidental to the work and no separate payment shall be made.

7. SCHEDULE, DURATION, AND PHASING REQUIREMENTS

The Contractor shall provide a schedule for all work listed on plans including any additional work not specifically mentioned on plans but was agreed upon with the County prior to work commencing.

Work Duration per task order shall be calculated in accordance with Supplements to the General Condition "SC-F.2 TIME FOR COMPLETION". The Time for completion shall be used as the basis for the project schedule.

Contractor shall make sure that the submittals/shop drawings are reviewed and accepted and materials ordered and delivered on site as no additional time will be granted for this.

8. WORK HOURS

The Contractor shall comply with **normal daytime working hours** as defined in the County Noise Control Ordinance unless otherwise defined by the project plans and specifications or approved by the Project Officer.

The Contractor shall comply with **restricted working hours** of 9:00 am to 3:00 pm when working in Arlington County arterial streets unless otherwise indicated on the Maintenance of Traffic Plans for each project.

The Contractor shall comply with **restricted working hours** as defined by VDOT and as noted on the approved VDOT permit when working within the VDOT Right-Of-Way. For restricted work hours in VDOT ROW, see attached "Lane Closure Guidelines in NOVA District". The Contractor is responsible for satisfying all VDOT Permit requirements found at: <http://www.virginiadot.org/business/fairfax-permits-main.asp>.

In addition, the County reserves the right to restrict working days and hours to accommodate special site conditions as required.

9. GENERAL SITE SECURITY AND CONTROLS

The Contractor is responsible for securing its work area for safety and security. The Contractor shall confine its construction and presence to the Limits of Work, unless otherwise approved by the County Project Officer.

The Contractor shall provide, erect, and maintain barricades, fences, and/or signage as required to protect the general public, workers, and adjoining properties at no additional cost to the County. Before leaving the site at the end of each day, the Contractor shall replace any and all sections of the security fence or barricade moved or removed during work hours.

The Contractor shall maintain clear vehicular access to existing driveways and entrances at all times unless such access is otherwise addressed on County-approved project plans, precluding concrete pouring and curing of such access points, unless otherwise directed by the County Project Officer.

Homeowners shall be notified by the Contractor a minimum of fourteen (14) calendar days in advance of any driveway closure, and driveways can only be closed for a maximum of five (5) calendar days.

The Contractor shall monitor parking of construction personnel's private vehicles and ensure that the public has unobstructed access to and through parking areas.

10. SPECIAL TRAFFIC MAINTENANCE CONSIDERATIONS

Contractor shall provide all traffic control devices necessary for safe passage of motorists, bikers and pedestrians around and thru the construction site. Contractor shall take extra pre-cautions as the site is in the vicinity of a school and that the school utilizes a crossing guard and there is heavy pedestrian and car traffic in and out of school at various times of the day. Safe operations at the signalized intersection during the transfer from the existing traffic signals to the new signal operation shall be the responsibility of the contractor.

11. REQUIREMENTS FOR WORK IN EXISTING ROADWAYS

Existing manhole frames, covers, valve boxes and other appurtenances shall be adjusted to the final grade or replaced, as necessary. Unless otherwise specified, the cost for this shall be considered incidental to work and shall be incorporated into the cost for relevant items. Connections to existing and proposed storm structures are considered incidental and no separate payment will be made.

Removal of concrete pavement, if encountered, will be to the next joint. In some cases, and when approved by the County Project Officer, the Contractor may be allowed to saw cut a neat joint mid-span of the existing concrete pavement. The limits of concrete pavement restoration shall be determined by the County Project Officer.

12. PAVEMENT RESTORATION FOR UTILITY CUTS

Pavement restoration for utility cuts in VDOT Right-Of-Way shall be in accordance with the detail shown in the LUP-OC NOVA Land Use Permit's Special provisions for pavement open cuts.

Pavement restoration for utility cuts in County Right-of-Way shall be in accordance with the Arlington County DES Standard Detail M-6.0 and M-6.1.

Temporary top asphalt installed to provide even grades with the existing roadway before the paving of the entire roadway shall be considered incidental and no payment shall be made by the County for furnishing materials and installation.

13. PAVEMENT MARKING

The Contractor shall have a certified VDOT Pavement Marking Technician present during pavement marking operations. Pavement markings shall be installed prior to opening the roadway to traffic as described in the Supplementary Specifications which includes requirements for temporary pavement markings.

Pavement markings disturbed by construction shall be restored immediately upon restoring pavement and shall be included in the pavement restoration price and shall not be paid as a separate item.

14. TRAFFIC SIGNALS AND STREETLIGHTS

Materials and construction of the communications conduit, streetlights, and traffic signals shall abide by the latest versions of the 'Arlington County Traffic Signal Specifications and Standards' and 'Arlington

County Lighting Specifications and Standards. All materials for these areas shall be approved by Arlington County Transportation Engineering and Operations Bureau. The County Project Officer will facilitate the material specification submissions for review by the Transportation Engineering and Operations Bureau.

The Contractor shall abide by VDOT's requirement to submit signal foundation details for review. These details include but are not limited to soil tests to verify the detail design, along with any other supporting information required by VDOT in their submission package. Details shall be created for each signal pole foundation and shall be for both three feet and four feet diameter foundations. The County will assist only in the submission of these details to VDOT, if requested. The Contractor is responsible for satisfying all VDOT requirements. The Contractor shall incorporate all costs for this in relevant items and no payment will be made by the County. The submission shall be submitted with enough time for VDOT to adequately review it. The Contractor cannot claim any time delay or any additional compensation due to such delay.

Prior to removal of the existing signal equipment and materials, the Contractor shall meet with the Project Officer to verify which equipment will be returned to the County, when and where the returned equipment will be delivered, and which equipment will be disposed. All costs associated with this shall be incidental to other items in the Contract.

As part of the luminaire installation, Contractor shall install house-side shields in each fixture. These shields will be provided by the County. If requested, the County will demonstrate how to install the shields. The Contractor shall contact the Streetlights Operations Team Manager at (703) 228-6531 to obtain the shields prior to ordering any streetlight materials to ensure they will be available at the time of construction, and to request a demonstration on how to install the shields. Failure to do so will be at the Contractor's expense for time if construction is stopped because the shields are not available. The installation of the shields is considered incidental to the contract and no additional payments shall be made for this work.

15. TEST PITS

The contract unit price for test pits (with restoration included within the unit price) shall apply only in the following cases, upon approval of the County Project Officer:

- Utility conflicts shown on the plans provided to the Contractor for construction under this contract, but without test pit information provided by the County.

- Utilities, which are not shown on the plans provided to the Contractor for construction under this contract but are marked by the utility designator prior to construction.

- Utilities, where depth verification is required and noted on the plan documents to be performed during construction or directed by the Project Officer.

Protecting existing utilities is the Contractor's responsibility and any test pits performed to protect the existing utilities shall be incidental to the work and no separate payment shall be made for that purpose.

16. GENERAL EXCAVATION

During construction if the need arises for additional excavation not included in the Contract Documents, the Contractor shall request in writing the need for additional excavation. The Contractor must request approval from the County Project Officer prior to performing the work.

If over-excavation is approved by the County Project Officer, payments will be at the general excavation unit price and will be based on actual site measurements taken by Arlington County personnel using the contract unit prices.

Failure by the Contractor to obtain written approval from the County Project Officer prior to performing any additional excavation will be performed at the Contractor's expense and there will be no cost to the County.

Excavation and shoring of any pits or shafts for trenchless or open trench methods of pipe installation, and any shoring left in place during installation shall be considered incidental to the installation of the pipe and shall be included in the unit price for installation of the pipe.

All sheeting, shoring, and bracing shall be in accordance with the current version of VDOT Specifications. Sheeting and shoring, if utilized may be abandoned in place up to five (5) feet below grade which shall be backfilled, etc. in accordance with the construction documents.

The maximum length of open trench shall be no more than one hundred (100) feet in roadways and three hundred (300) feet elsewhere unless written permission is obtained from the County Project Officer

No excavation shall remain open within the roadway or sidewalk without the approval of the County except when the excavation can be safely bridged with the use of steel plates or other materials acceptable to the County. When areas of excavation do remain open with the use of steel plates, warning signs shall be posted.

Steel plates may not be used within the VDOT Right-Of-Way from November 1st through April 1st. If steel plates are used during the allowable time period of April 2nd through October 31st, then their use shall comply with the most current VDOT Standards and Specifications.

17. BYPASS PUMPING/TEMPORARY FLOW DIVERSION/DEWATERING

The Contractor shall utilize temporary pumps to divert storm, and sanitary sewer flows during construction as required. All equipment used for these purposes shall comply with the requirements of the Arlington County Noise Ordinance. The Contractor shall be responsible for the installation, operation, and removal of the temporary pumps. The Contractor shall be responsible for utilizing pumps sufficient to bypass the normal flow and dewater the work area

The Contractor shall furnish, install, operate and maintain all sumps, pumps, casings, well-points, dewatering device, portable dams/barriers and other equipment needed to perform the temporary flow diversion and dewatering of the construction site as needed for proper execution of the construction work.

The Contractor shall furnish to the County in writing, a plan for diverting flows and removal of water from the work area before beginning the construction work. Acceptance of this plan will not relieve the Contractor of responsibility for completing the work as specified

The cost for bypass pumping shall be incidental to other items in the Contract; therefore, there will be no separate payment for bypass pumping.

18. TREE PROTECTION AND TRIMMING

Minimizing damage to existing trees is very important. The critical root zone of existing trees is shown on the Construction Plans. Construction within the critical root zone of trees to remain requires root pruning to be performed as shown on the approved Plans in advance of the construction. If roots for trees not marked 'to be removed' on the Construction Plans are found during construction, the Contractor shall notify the Project Officer. The Project Officer shall consult with the Arlington County Urban Forester, then the Project Officer shall determine if additional root pruning is required. The additional root pruning performed by the Contractor shall be paid to the Contractor according to the unit price bid for root pruning.

19. BICYCLE PARKING STANDARDS

The R-8# series details in Bike Parking standards supersede Arlington DES Standard Details R-8.0 and R-8.1.

20. ASPHALT PAVEMENTS

Throughout the contract documents, replace the old Marshall mix asphalt designations with the new Superpave asphalt mix designations as follows:

Old (Marshall) mix designations	New (Superpave) mix designations
SM-2A	SM-9.5A
BM-2	BM-25.0A

21. OTHER SPECIAL PROVISIONS

The stone-faced wall shall be similar in appearance and color to the existing stone-faced wall at 1723 N Glebe Road.

All demolition shall be considered incidental to the work. No separate measurement and payment will be made for that purpose. It shall be considered a subsidiary obligation of the Contract under other work to which it relates.

This project is a VDOT LAP (Locally Administered Project) Project. The Contractor shall comply with all the requirements of the VDOT LAP Manual. All compliance to the VDOT LAP Manual shall be considered incidental to the work. No separate measurement and payment will be made for that purpose.

V. SUPPLEMENTAL SPECIFICATIONS
TABLE OF CONTENTS

COUNTY SPECIFICATIONS MODIFIED:

<u>SECTION NO.</u>	<u>DESCRIPTION</u>
01000	GENERAL PROVISIONS AND REQUIREMENTS
01300	SUBMITTALS
01500	TEMPORARY EROSION AND SEDIMENT CONTROL
02100	CLEARING AND GRUBBING
02200	EARTHWORK
02500	GRAVITY SEWERS AND APPURTENANCES
02510	SANITARY SEWERS AND APPURTENANCES
02515	TELEVISED INSPECTION OF SEWERS
02550	WATER MAINS & APPURTENANCES
02600	BITUMINOUS ROADWAY PAVEMENTS
02611	CONCRETE WALKS AND CONCRETE DRIVEWAY ENTRANCE
02612	INTERLOCKING CONCRETE AND BRICK PAVERS
02650	RESTORATION OF ROADWAY
02750	CURB AND GUTTERS
02800	LANDSCAPING
02801	SEEDING AND SODDING
02950	TUNNELING
02951	BORING AND JACKING
13130	BUS STOP SHELTERS AND FURNISHINGS

COUNTY SPECIFICATIONS ADDED:

<u>SECTION NO.</u>	<u>DESCRIPTION</u>
01550	MOBILIZATION
01720	PROJECT RECORD DOCUMENTS
02619	PERMANENT SIGNS
02900	PAVEMENT MARKINGS
04301	REIN
13180	MAINTENANCE AND CONTROL OF TRAFFIC
311300	TREE PROTECTION AND ROOT PRUNING
329100	PLANTING PREPARATION
329200	SEEDING AND SODDING
329300	EXTERIOR PLANTS

SECTION 01000**GENERAL PROVISIONS AND REQUIREMENTS**

This Section shall conform to the Arlington County Construction Standards and Specifications of Section 01000 except as modified herein.

Add the following to Section 01000:

19. Environmental Protection

The Contractor shall implement measures to prevent releases of pollution to the environment and unauthorized discharges to the County's storm drain system or surface waters. The Contractor shall ensure the pollution prevention measures outlined in Section 01500 Erosion and Sediment Control and Pollution Prevention are implemented throughout the duration of the work.

When the work includes an approved Stormwater Pollution Prevention Plan (SWPPP) required under Chapter 60 of the County Code (land disturbance of at least 2,500 square feet), the Contractor shall strictly abide by this plan which includes: a Pollution Prevention (P2) Plan, an Erosion and Sediment Control (ESC) Plan, and a Stormwater Management Plan. If the Contractor proposes to deviate from this approved plan, it shall be the Contractor's responsibility to coordinate and obtain approval from the County Project Officer prior to implementing any changes

SECTION 01300**SUBMITTALS**

This Section shall conform to the Arlington County Construction Standards and Specifications of Section 01300 except as modified herein.

Add the following to Section 01300, section 8. Shop Drawings:

- i. Contractor shall submit 6 (six) copies of all submittals/shop drawings.
- j. The Engineer will review the Shop Drawings within ten (10) Business Days.

Add the following to Section 01300:

Pavement Restoration Limit

Contractor shall submit the extent of the pavement restoration to the County for approval, prior to any saw cuts and/or milling and paving to the existing pavement.

SECTION 01500

TEMPORARY EROSION AND SEDIMENT CONTROL

This Section shall conform to the Arlington County Construction Standards and Specifications of Section 01500 except as modified herein:

Delete specification 01500 in its entirety and replace with:

PART 1- GENERAL

1.1 Description of Work

This work shall consist of implementation of erosion and sediment control and pollution prevention measures throughout the duration of the work to prevent unauthorized non-stormwater discharges or pollution releases to the storm drain system or surface waters.

Where work is governed by an approved Stormwater Pollution Prevention Plan (SWPPP), the Erosion and Sediment Control and Pollution Prevention components of the SWPPP shall apply.

Erosion and sediment control measures shall include, but are not limited to, the use of berms, dikes, dams, sediment basins, fiber mats, silt fences, straw bales, washed gravel or crushed stone, mulch, grasses, slope drains, temporary seeding, and other methods. Erosion and sediment control measures shall be applied to erodible material exposed by any activity associated with the construction, and consistent with federal, state and local regulations.

All non-stormwater discharges to the County's storm drain system, which includes the curb and gutter as well as the underground pipe network, or any open watercourse must comply with the conditions of the County's Virginia Stormwater Management Program, Municipal Separate Storm Sewer System (MS4) Permit. Examples of unauthorized non-stormwater discharges include but are not limited to, wash water, slurry runoff from saw cutting, discharges associated with vehicle, equipment, and/or material washing, concrete wash water, process water, waste water, leaks from portable lavatories, equipment, vehicles and/or waste receptacles. Only clear, uncontaminated stormwater discharges and/or permitted non-stormwater discharges (as specified in a Virginia Pollutant Discharge Elimination System (VPDES permit)) are allowed to be discharged to the storm drain system or surface waters. Contaminants, including but not limited to, volatile organic compounds, petroleum products, metals, PCBs/Pesticides shall not be discharged to the County's storm sewer system.

Related Work Specified Elsewhere

Section 02100- Clearing and Grubbing

Section 02200- Earthwork

Applicable Regulations

Erosion and Sediment Control (Chapter 57 of the Arlington County Code)

Utilities (Chapter 26 of the Arlington County Code)

Stormwater Management (Chapter 60 of the Arlington County Code)

Chesapeake Bay Preservation Ordinance (Chapter 61 of the Arlington County Code)

Trees and Shrubs (Chapter 67 of the Arlington County Code)

Virginia State Water Control Board Regulations

Applicable References

Virginia Erosion and Sediment Control Handbook

Arlington County Stormwater Management Ordinance Guidance Manual

Arlington County Planning Guide to Erosion and Sediment Control

Arlington County Pre-Storm Erosion and Sediment Control Checklist

Arlington County Planning & Field Guide for Pollution Prevention (P2)

Arlington County Tree Protection and Planting Standards

Submittals

Prior to the start of any work that does not require a Land Disturbing Activity (LDA) and SWPPP, the Contractor shall prepare and submit a plan for implementing erosion and sediment control and pollution prevention measures. The plan shall include, but is not limited to, the operations of clearing and grubbing, stripping of topsoil, grading, stabilizing cleared areas, dewatering, spill prevention and cleanup, and the construction of structures at watercourses.

Any activity that disturbs greater than or equal to 2500 square feet requires a Stormwater Pollution Prevention Plan per the requirements of Arlington County Code Chapter 60. This plan contains the following elements:

- Erosion and Sediment (E&S) Control Plan
- Pollution Prevention Plan (P2 Plan)
- Stormwater Management Plan (SWMP)
- Virginia Stormwater Management Program (VSMP) Requirements where applicable

Construction work shall not commence until the schedule of work and the methods of operations have been reviewed and approved by the Engineer / Project Officer.

Erosion and sediment controls shall be coordinated with the construction of permanent stormwater management facilities, drainage facilities and other contract work to the extent practicable to assure economical, effective, and continuous erosion and sediment control, and to prevent any damage, clogging, or other negative impacts upon the Work or other property.

Where work is governed by an approved SWPPP, the Contractor shall be responsible for all SWPPP self-inspection and documentation requirements.

Where work is governed by an approved SWPPP, the Contractor shall be responsible for all SWPPP self-inspection and documentation requirements which includes but is not limited to the following:

- A SWPPP box is installed and maintained at project site.
- Permit(s) and applicable documentation are posted near the SWPPP box.

- All sections of the SWPPP are kept complete and up to date throughout the duration of the project. (For example, notation of when erosion and sediment controls (ESC) are installed and information about the types of pollution prevention measures used.)
- Any modifications to controls are documented in the SWPPP, which includes the ESC plan.
- Self-inspections are conducted every four business days or as required.
- Completed and signed inspection reports are kept at the project site.
- Items identified during inspections requiring correction action are properly documented and addressed.
- The ESC Pre-storm checklist provided in the plan / SWPPP is used and followed accordingly.

Permits

The Contractor is responsible for complying with all applicable State, Federal, and Local permits which are required for construction, including, but not limited to:

- Virginia Water Protection Permits issued by the Virginia DEQ
- General Nationwide Permits issued by the US Army Corps of Engineers
- Land Disturbing Activity (LDA) permits (Virginia Stormwater Management Program (VSMP) authority permits) issued by Arlington County
- General Virginia Pollutant Discharge Elimination System (VPDES) Permit for Discharges of Stormwater from Construction Activity issued by Virginia DEQ.

A separate VPDES permit, issued by DEQ may be required for certain non-stormwater discharges such as contaminated groundwater.

Unless otherwise specified as the responsibility of the Contractor in the ITB or contract documents, the County will obtain all applicable permits prior to awarding the contract. Permits will then be transferred to the Contractor.

PART 2 - MATERIALS

Materials shall be at the Contractor's option with the approval of the Engineer/Project Officer in accordance with Arlington County Code, Erosion and Sediment Control Ordinance (Chapter 57).

PART 3 - EXECUTION

3.1- Installation and Maintenance of Erosion and Sediment Controls

Where work is governed by an approved SWPPP, the contractor shall follow the plan and Erosion and Sediment Control Pre-Storm Checklist, which includes but is not limited to the conditions below. Where the work is not governed by an approved SWPPP, the contractor shall meet the conditions below as well as those specified in the Erosion and Sediment Control Pre-Storm Checklist.

- A. The Contractor, prior to starting work, shall properly protect storm drains to prevent pollutants, waste materials, sediment, or non-stormwater discharges from entering the storm drain system. The Contractor shall implement and maintain controls as specified in the Virginia Erosion and Sediment Control Handbook and/or approved Stormwater Pollution Prevention Plan. Controls, practices, and/or devices must be monitored and maintained at all times to ensure proper operation condition.

- B. No grading operations will be allowed until erosion and sediment controls have been installed in accordance with the approved plan conforming to the requirements of Virginia Erosion and Sediment Control regulations and Arlington County Erosion and Sediment Control Ordinance.
- C. The Contractor shall keep stockpiled materials covered and perimeter controls shall be employed to minimize exposure to wind, precipitation, and runoff.
- D. The Contractor shall implement and maintain dewatering methods as specified in Arlington County Construction Standards and Specifications, VA Erosion and Sediment Control Handbook, Arlington County Planning & Field Guide to Erosion and Sediment Control, Arlington County Planning & Field Guide for Pollution Prevention (P2) and/or approved Stormwater Pollution Prevention Plan. Controls, practices, and/or devices used for dewatering operations must be monitored and maintained at all times to ensure proper operation.
- E. The Contractor shall conduct dewatering operations in a manner to prevent sediment or other pollutants from discharging to the County's storm drain system, which includes the curb and gutter, or any surface water. Dewatering operations shall not create any erosion or flooding. Dewatering discharges that contain chemicals, hydrocarbons, or sewage shall not be discharged to the storm drain system. Any discharge from dewatering operations shall be properly filtered prior to being discharged. A dewatering plan with sufficient detail to ensure the proposed dewatering will comply with applicable regulations must be included as part of the erosion and sediment control plan.
- F. The Contractor is responsible for the installation and maintenance of any additional erosion and sediment control (ESC) measures necessary to prevent erosion and sedimentation as determined by the County, including but not limited to the actions listed in the County's Erosion and Sediment Control Pre-Storm Checklist (perimeter controls, slope stabilization, and covering stockpiles). Erosion and sediment controls shall be modified as needed to ensure clear water is discharged from the site. The County reserves the right to order the implementation of other erosion and sediment controls not specifically described herein to correct an erosion or pollution discharge condition.
- G. Control measures shall be properly maintained in accordance with state and local regulations. Immediately after every rainstorm, all control measures shall be inspected and any deficiencies corrected by the Contractor.
- H. Erosion and sediment controls shall be removed when the area has been stabilized and approval has been granted by the construction inspector.
- I. No further work will be allowed until erosion and sediment controls for the applicable phase have been installed in accordance with the approved plan conforming to the requirements of Virginia Erosion and Sediment Control regulations and Arlington County Erosion and Sediment Control Ordinance.

J.

3.2 Pollution Prevention Measures

Where work is governed by an approved SWPPP, the contractor shall follow the plan, which includes but is not limited to the conditions below. Where the work is not governed by an approved SWPPP, the contractor shall meet the conditions below.

- A. The Contractor shall employ good housekeeping at work sites at all times. The Contractor shall collect, remove and legally dispose of all refuse, trash, litter, waste materials, and/or debris generated at the work site as frequently as necessary to prevent pollution releases from the site. Liquid waste must be properly contained prior to being placed into a waste receptacle to prevent leaking. The County, in its sole discretion, may require the Contractor to provide disposal tickets or other information sufficiently demonstrating legal disposal.
- B. The Contractor shall contain, capture, collect and legally dispose of any unauthorized non-stormwater discharge(s), including but not limited to, saw cut slurry from saw cutting operations, concrete / asphalt wash water, waste water, and / or wash water from equipment, material, and/or vehicle washing.
- C. A vacuum system shall be used to collect liquid waste / slurry generated from saw cutting operations to prevent a discharge to a storm drain or surface water. Collected slurry must be disposed of at an approved waste receiving facility (e.g. landfill, soil safe, waste water treatment plant, commercial dump pad).
- D. Methods used for capturing / collecting unauthorized non-stormwater discharges must be on site and operational prior to starting any work that will generate a non-stormwater discharge.
- E. The Contractor shall have designated wash out areas or containers for materials, including but not limited to concrete, asphalt, paint, grout, mortar, stucco, form release oil, curing compounds, and /or sealers.
- F. Construction materials shall be properly stored and secured to ensure no pollutants are released into the environment.
- G. The Contractor shall ensure waste receptacles and portable lavatories are not damaged and/or leaking.
- H. The Contractor shall ensure spill clean-up materials (including but not limited to absorbent materials, spill pads, rags, booms, bags for waste disposal) and tools (including but not limited to shovels, brooms, containers, vacuums) are kept on the work site and accessible at all times. Spills and leaks shall be cleaned up as soon as discovered and wastes properly disposed of at an approved waste receiving facility. Spills shall not be washed into a street, storm drain, or surface waters.

- I. The Contractor shall ensure that the County's procedures for disposing of chlorinated water are followed (DES Construction Standards and Specifications, Section 02550 4.12 Discharge of Chlorinated Water).
- J. The Contractor shall not dump or dispose of anything in a storm drain, street, or stream that is not authorized under the County's VSMP MS4 permit or violates County Code Chapter 26-5 B and/or C.

3.3 Extent of Grading Operations

- A. The Contractor shall limit the surface area of earth material exposed by grubbing, stripping of topsoil and excavation to that which is necessary to perform the next operation within a given area.
- B. Unless specifically authorized by the Project Officer, the grubbing of root mat and stumps shall be confined to the area over which excavation is to be actively conducted within 30 days following the grubbing operations.
- C. The stripping of topsoil shall be confined to the area over which excavation is to be actively prosecuted within 15 days following the stripping operations; and excavation and embankment construction shall be confined to the minimum area necessary to accommodate the Contractor's equipment and work force engaged in the earth moving work.
- D. No disturbed area, including stockpiles, shall remain denuded longer than 7 days without temporary seeding or application of other stabilization practices approved by the Project Officer.

3.4 Tree Protection

- A. The Contractor shall ensure the specifications in the County's Tree Protection and Planting Standards are followed throughout the duration of the work.
- B. The Contractor shall protect all existing trees within a Tree Protection Zone.

PART 4 - MEASUREMENT AND PAYMENT

4.1 Measurement and Payment

- A. Temporary Erosion and Sediment Controls as detailed on the approved plan and as indicated in the bid line item shall be paid in lump sum.

- B. SWPPP administration as detailed under section 1.8 of this specification and as indicated in the bid line item shall be paid in lump sum.
- C. Unless otherwise specified, no separate payment shall be made by the County for maintenance of erosion and sediment controls or implementation of the pollution prevention measures specified on an approved plan, methods, or sequence of work; this work is considered to be a subsidiary obligation to the Contract.
- D. No separate payment shall be made by the County for erosion and sediment controls or pollution prevention measures required to correct conditions created due to the Contractor's negligence, carelessness or failure to install or properly maintain controls in accordance with approved plans.
- E. No separate payment shall be made by the County for changes to the plans which are the result of the Contractor's work schedule or resource allocation, weather delays, or other factors not controlled by the County.
- F. Unless otherwise specified, no separate payment shall be made by the County for implementation of spill clean-up, hauling fees, and/or collection, handling, transport and legal disposal of unauthorized non-stormwater discharges (slurry, waste water, wash water) and/or other waste materials; this work is considered to be a subsidiary obligation to the Contract.
- G. In the event the Contractor repeatedly fails to satisfactorily control sediment and pollution releases, the County reserves the right to employ outside assistance or to use its own forces to provide the corrective measures indicated; the cost of such work, plus engineering costs, will be deducted from payments due to the Contractor for other work.

SECTION 02100

CLEARING AND GRUBBING

This Section shall conform to the Arlington County Construction Standards and Specifications of Section 02100 except as modified herein.

Add the following to Section 02100, PART 2 - MATERIALS:

This section left intentionally blank.

Add the following to Section 02100, PART 3 - EXECUTION:

11. Clearing

The area of clearing (limits of disturbance) shall be maintained within the limits shown on the plans.

The Contractor shall ensure the specifications in the County's Tree Protection and Planting Standards are followed throughout the duration of the work. Trees and other vegetation that will not be removed shall be properly protected to avoid damage and limit adverse impacts. Protection devices around tree protection areas shall be installed and maintained throughout the duration of the work as directed by

the Urban Forester (DPR). There shall be no disturbance inside the boundaries of the tree protection area. Equipment and materials may not be stored inside tree protection areas.

Add the following to Section 02100 PART 4 – Measurement and Payment

The removal of any designated tree smaller than 6" DBH shall be consider clearing and incidental to the WORK. All other tree removal as well shall be considered clearing and incidental to the WORK.

SECTION 02200**EARTHWORK**

This Section shall conform to the Arlington County Construction Standards and Specifications of Section 02200 except as modified herein.

Add the following to Section 02200, PART 1 - GENERAL:

10. Saw Cutting

A vacuum system shall be used to collect liquid waste / slurry generated from saw cutting activities. Collected slurry must be hauled off and disposed of at a proper waste receiving facility (e.g. landfill, soil safe, waste water treatment plant, commercial dump pad).

Modify the following portions of Section 02200:

PART 3 - EXECUTION**18. Dewatering**

At all times during construction the Contractor shall keep all excavations dry and promptly remove all water entering trenches and other excavations until the structures, pipes, and appurtenances to be built therein have been completed and backfilled. Dispose of all water pumped or drained from the work without impact to the Work, traffic, or injury to public or private property, and in compliance with all Local, State, and Federal regulations.

The Contractor shall implement and maintain dewatering methods as specified in Arlington County Construction Standards and Specifications, VA Erosion and Sediment Control Handbook, Arlington County Planning & Field Guide to Erosion and Sediment Control, Arlington Planning & Field Guide for Pollution Prevention (P2) and/or approved Stormwater Pollution Prevention Plan. Controls, practices, and/or devices used for dewatering operations must be monitored and maintained at all times to ensure proper operation condition.

The Contractor shall conduct dewatering operations in a manner to prevent sediment or other pollutants from discharging to the County's storm drain system, which includes the curb and gutter, or any surface water. Dewatering operations shall not create any erosion or flooding. Dewatering discharges that contain chemicals, hydrocarbons, or sewage shall not be discharged to the storm drain system. A dewatering plan with sufficient detail to ensure the proposed dewatering will comply with applicable regulations must be included as part of the erosion and sediment control plan.

PART 4 - MEASUREMENT AND PAYMENT**25. Excavation**

Delete: When explicitly included as a pay item, Excavation will be measured by the cubic yard as illustrated on the approved plans, or as approved by the Project Officer. Excavation in excess of that shown on the approved plans will not be compensated, unless specifically approved in advance by the Project Officer. Payment will include all labor, materials, and equipment and will include excavation, handling, storage and disposal of materials, backfilling, compaction, testing, and all other activities necessary to comply with these Specifications.

Add: When explicitly included as a pay item on the Bid Form, Excavation will be measured by the cubic yard as illustrated on the approved plans, or as approved by the Project Officer. Excavation in excess of that shown on the approved plans will not be compensated, unless specifically approved in advance by the Project Officer. Payment will include all labor, materials,

and equipment and will include excavation, handling, storage and disposal of materials, backfilling, compaction, testing, and all other activities necessary to comply with these Specifications.

26. Fill

Delete: When explicitly included as a pay item, Fill will be measured by the cubic yard in place as illustrated on the approved plans, or as approved by the project Officer, and will include all materials, equipment, and labor to construct the fills or embankments as illustrated on the construction drawings. Unless otherwise specified, back filling of excavations will not be compensated as Fill. Payment will include all clearing and grubbing, preparation, acquisition, transporting, storing, and handling of material, placement, shaping, compaction, and other activities necessary to comply with these Specifications.

Add: When explicitly included as a pay item on the Bid Form, Fill will be measured by the cubic yard in place as illustrated on the approved plans, or as approved by the project Officer, and will include all materials, equipment, and labor to construct the fills or embankments as illustrated on the construction drawings. Unless otherwise specified, Backfilling of excavations will not be compensated as Fill. Payment will include all clearing and grubbing, preparation, acquisition, transporting, storing, and handling of material, placement, shaping, compaction, and other activities necessary to comply with these Specifications.

Testing

Delete: Testing will be considered subsidiary to the Work and no compensation will be approved. If the Project Officer directs testing in excess of that required by the Contract Documents, the Contractor shall be entitled to compensation unless such testing reveals noncompliant work

Add: Materials testing shall be in compliance with County Specification Section 01400, and the Special Conditions of this Contract.

Add:

28. Saw Cutting

The cost for saw cutting shall be incidental to other items in the Contract; therefore, there will be no separate payment for saw cutting.

SECTION 02500

GRAVITY SEWERS AND APPURTENANCES

This Section shall conform to the Arlington County Construction Standards and Specifications of Section 02500 except as modified herein.

Add the following to Section 02500, PART 2 - MATERIALS:

Polypropylene Pipe (PPP)

1. PPP shall conform to ASTM F2881 and AASHTO M330
2. Joint performance shall meet or exceed ASTM D3212

Add the following to Section 02500, PART 3 - EXECUTION:

1. General

5. In the event of a water or sewer emergency, the Contractor shall immediately notify the County's Water Control Center at 703-228-5555 and the Project Officer.

2. Laying Pipe

- D. PPP sewer shall not be installed with less than 2 feet of cover from the top of the pipe to finished grade
- E. PPP shall not be installed at depths greater than 20' without special design analysis

3. Laying Pipe

- J. Install PPP in accordance with ASTM D2321

Modify the following portions of Section 02500:

PART 4 - MEASUREMENT AND PAYMENT

4.2 Manholes

Delete in its entirety and replace with the following:

Manholes for the various internal diameters shall be measured by each up to 8 vertical feet from the top of the manhole cover thereafter the measurement shall be in vertical feet to the invert of the outlet pipe. Payment shall include excavation, backfill, bedding, foundation, base and components, channels, sleeves, frame and cover, intermediate landings, steps, restoration and all other work necessary for a complete installation.

Add the following after subsection 4.4 Excavation Below Grade and Additional Bedding:

4.5 PVC Pipe with Perforated PVC Pipe

PVC pipe with Perforated PVC Pipe for the various materials, classes, and sizes shown on the plans shall be measured in linear feet along the center line of the pipe and shall be measured from inside wall of structure to inside wall of structures. Payment shall include the furnishing of all pipe and fittings, valve box with cap, all necessary tests, excavation, removal and disposal of existing pipes, removal and disposal of unsuitable or surplus material, placement of bedding and backfill as shown in Standard M-3.0, restoration, core drilling, #57 gravel, filter fabric, top soil, sod, and all work incidental to providing a complete PVC pipe with Perforated PVC pipe sewer installation.

4.5a Perforated PVC Pipe in bio-retention

For installation of perforated pipe in a bioretention facility, payment shall only be for the pipe in place. Payment for related items such as excavation, removal and disposal of unsuitable or surplus material, placement of bedding and backfill, #57 gravel and filter fabric will be made separately.

4.6 PVC Cleanout

PVC Cleanout for the various materials, classes, and sizes shown on the plans shall be measured as each. Payment shall include the furnishing of all pipe and fittings, valve box with cap, all necessary tests, excavation, removal and disposal of existing pipes, removal and disposal of unsuitable or surplus material, placement of bedding and backfill as shown in Standard M-3.0, restoration, #57 gravel, filter fabric, and all work incidental to providing a complete PVC Cleanout installation.

4.6a PVC Cleanout in bio-retention

For installation of a PVC clean out in a bioretention facility payment shall only be for the Cleanout in place and payment for related items such as excavation, removal and disposal of unsuitable or surplus material, placement of bedding and backfill, #57 gravel and filter fabric will be made separately.

4.7 Sump Pump Core and Cleanout Connection

Sump Pump Core and Cleanout Connection for the various materials, classes, and sizes shown on the plans shall be measured as each. Payment shall include the furnishing of all pipe and fittings, valve box with cap, all necessary tests, excavation, removal and disposal of existing pipes, removal and disposal of unsuitable or surplus material, placement of bedding and backfill as shown in Standard M-3.0, restoration, radial core drilling, #57 gravel, filter fabric, top soil, sod, proposed connections to storm structures and storm pipes, and all other work incidental to providing a complete Sump Pump Core and Cleanout Connection installation.

SECTION 02510

SANITARY SEWERS AND APPURTENANCES

This Section shall conform to the Arlington County Construction Standards and Specifications of Section 02510 except as modified herein.

Add the following to Section 02510 PART 4 – MEASUREMENT AND PAYMENT :

4.10 Excavation and Demolition

Excavation and demolition shall be considered incidental to the work.

SECTION 02515

TELEVIEWED INSPECTION OF SEWERS

This Section shall conform to the Arlington County Construction Standards and Specifications of Section 02515 except as modified herein.

Add the following to Section 02515:

PART 3 – EXECUTION

Add the following at the end of subsection 3.2. Documentation

- E. The Contractor shall report any evidence of illicit discharges or illicit connections to the storm drain system to the Department of Environmental Services.

SECTION 02550**WATER MAINS & APPURTENANCES**

This Section shall conform to the Arlington County Construction Standards and Specifications of Section 02550 except as modified herein.

Modify the following portions of Section 02550:

PART 3 – EXECUTION

Delete listed sections and replace with the following:

Subsection 3.4-G Disinfection of Water Mains

1. When each pipe length has been placed and shut off, disinfect each section of the water main.
 - Provide all labor, materials and equipment to perform the disinfection operations in compliance with all state and local regulations. Disinfection shall conform to AWWA C601 and C51 requirements.
- 3.a. Preliminary Flushing of Mains: All mains shall be flushed prior to disinfection except when the tablet method of disinfection is used. The mains shall be flushed at a minimum velocity of 3 feet per second and all points in the main shall receive a minimum of five (5) consecutive minutes of flushing at this velocity, until the water runs clear.

Subsection 3.4-J Bacteriologic Test

1. After chlorination, hydrostatic testing and final flushing, and before the water main is placed in service, samples shall be collected from the main and tested for enteric bacterial contamination and shall show the absence of coliform organisms. At least two (2) sets of consecutive satisfactory bacteriological samples shall be obtained from the distribution system before the system can be placed into service.

Samples shall be collected in one of the following manners:

- A. At all accessible locations not exceeding 1,200 feet apart in the line downstream from where the pipe was filled with water. After the initial samples are taken, resample after 16 hours.

-OR-

- B. At all accessible locations not exceeding 1,200 feet apart in the line downstream from where the pipe was filled with water. Allow main sit for 16 hours without water movement, then take first set of samples with a second set of samples after a 15 minute waiting period.

Samples shall be taken through the use of sample tap consisting of a corporation cock and copper tube or through other accessible appurtenances on the main. Samples shall be collected by a representative of the testing laboratory.

Add the following to Section 02550:

PART 1– GENERAL

Add the following at the end of subsection 1.4. Applicable References

Arlington County Municipal Separate Storm Sewer System Permit
Arlington County De-chlorination Policy Acknowledgement form
Arlington County De-chlorination Plan form
Arlington County De-chlorination and Disposal Procedures
Virginia Department of Health Water Works Regulations (VR 355-18-000)

PART 3 – EXECUTION

Add the following at the end of subsection 3.4. Construction Standards

- M. Unless otherwise directed, Contractors are expressly prohibited from operating any water valves or appurtenances. Contractors shall submit all requests for valve operations to the Project Officer at least 3 working days in advance of the required operation.
- N. In the event of a water or sewer emergency, the Contractor shall immediately notify the County's Water Control Center at 703-228-5555 and the Project Officer.

SECTION 02600

BITUMINOUS ROADWAY PAVEMENTS

This Section shall conform to the Arlington County Construction Standards and Specifications of Section 02600 except as modified herein.

Modify the following portions of Section 02600:

Base Course

Delete: The base course shall be bituminous concrete consisting of course and fine aggregate combined with asphalt cement, resulting in a mixture of Type BM-2 in conformance with Section 211 of the VDOT Specifications.

Add: The base course shall be bituminous concrete consisting of course and fine aggregate combined with asphalt cement, resulting in a mixture of Type BM-25.0A in conformance with Section 211 of the VDOT Specifications.

Surface Course

Delete: The surface course shall be bituminous concrete consisting of crushed stone, crushed slag, or crushed gravel and the fine aggregate, slag or stone screenings, or combination thereof, combined with asphalt, cement, resulting in a mixture of Type SM-2A in conformance with Section 211 of VDOT Specifications.

Add: The surface course shall be bituminous concrete consisting of crushed stone, crushed slag, or crushed gravel and the fine aggregate, slag or stone screenings, or combination thereof,

combined with asphalt, cement, resulting in a mixture of Type SM-9.5A in conformance with Section 211 of VDOT Specifications.

1.5 Traffic Marking

Delete: Traffic marking will be provided by the County.

Add: Traffic marking will be provided by the Contractor.

Add the following to Section 02600 PART 4 – MEASUREMENT AND PAYMENT

4.3 Excavation and demolition shall be considered incidental to the work.

SECTION 02611 CONCRETE WALKS AND CONCRETE DRIVEWAY ENTRANCES

This Section shall conform to the Arlington County Construction Standards and Specifications of Section 02611 except as modified herein.

Modify the following portion of Section 02611 PART 4 – MEASUREMENT AND PAYMENT:

Delete in Section 4.4:

Excavation shall be measured in cubic yards in its original condition based on the cut sheets and typical section. Payment shall be in cubic yards as described in Section 02201.

Add in Section 4.4:

Excavation and demolition shall be considered incidental to the work.

SECTION 02611 CONCRETE WALKS AND CONCRETE DRIVEWAY ENTRANCES

This Section shall conform to the Arlington County Construction Standards and Specifications of Section 02611 except as modified herein.

Modify the following portion of Section 02611 PART 4 – MEASUREMENT AND PAYMENT:

Delete in Section 4.4:

Excavation shall be measured in cubic yards in its original condition based on the cut sheets and typical section. Payment shall be in cubic yards as described in Section 02201.

Add in Section 4.4:

Excavation and demolition shall be considered incidental to the work.

SECTION 02612**INTERLOCKING CONCRETE AND BRICK PAVERS**

This Section shall conform to the Arlington County Construction Standards and Specifications of Section 02612 except as modified herein.

Modify the following portion of Section 02612 PART 4 – MEASUREMENT AND PAYMENT:

Delete in Section 4.2:

Excavation shall be measured in cubic yards in its original condition based on the cut sheets and typical sections. Payment shall be in cubic yards as described in Section 02201.

Add in Section 4.2:

Excavation and demolition shall be considered incidental to the work.

SECTION 02650**RESTORATION OF ROADWAY**

This Section shall conform to the Arlington County Construction Standards and Specifications of Section 02650 except as modified herein.

Add the following to Section 02650 PART 4 – MEASUREMENT AND PAYMENT

4.5 Excavation and demolition shall be considered incidental to the work.

SECTION 02750**CURB AND GUTTERS**

This Section shall conform to the Arlington County Construction Standards and Specifications of Section 02750 except as modified herein.

Add the following to Section 02750 PART 4 – MEASUREMENT AND PAYMENT

4.3 Excavation and demolition shall be considered incidental to the work.

SECTION 02800**LANDSCAPING**

Delete SECTION 02800 in its entirety.

SECTION 02801**SEEDING AND SODDING**

Delete SECTION 02801 in its entirety.

SECTION 02950**TUNNELING**

This Section shall conform to the Arlington County Construction Standards and Specifications of Section 02950 except as modified herein.

Add the following to Section 02950 PART 4 – MEASUREMENT AND PAYMENT :

Excavation and demolition shall be considered incidental to the work.

SECTION 02951**BORING AND JACKING**

This Section shall conform to the Arlington County Construction Standards and Specifications of Section 02951 except as modified herein.

Add the following to Section 02951 PART 4 – MEASUREMENT AND PAYMENT :

Excavation and demolition shall be considered incidental to the work.

SECTION 13130**BUS STOP SHELTERS AND FURNISHINGS**

This Section shall conform to the Arlington County Construction Standards and Specifications of Section 13130 except as modified herein.

Add the following to Section 13130, PART 2 - MATERIALS:

PART 2 – MATERIALS**2.3 Concrete Pad**

Add: See detail on plan sheet 45 of 46.

Modify the following to Section 13130, PART 3 - EXECUTION:

PART 3 – EXECUTION**3.1**

Delete 3.1 in its entirety and replace with the following:

The Contractor is responsible for the pick-up and delivery of the bus stop shelter units and site furnishings from the Arlington County's Bus Shelter Storage yard located at 1425 N. Quincy Street, Arlington VA 22207. Contractor shall coordinate the pick-up with assigned County staff at least forty-eight (48) hours prior to the delivery.

Modify the following to Section 13130, PART 4 – MEASUREMENT AND PAYMENT:

PART 4 – MEASUREMENT AND PAYMENT

Delete Part 4 in its entirety and replace with the following:

1. Bus shelters shall be measured as each. Payment will be at the unit price stated in the bid proposal and shall include pick-up and delivery from the Arlington County bus shelter storage yard, labor and incidentals necessary for a complete installation of the bus shelter unit and the supporting bus shelter concrete pad.
2. Site furnishings (Bench, litter receptacle, newspaper corral, leaning rail and bicycle rack) shall be measured as each. Payment will be at the unit price stated in the bid proposal and shall include pick-up and delivery of new furnishings from the Arlington County bus shelter storage yard, labor and incidentals necessary for a complete installation of the site furnishings.

COUNTY SPECIFICATIONS ADDED:

SECTION 01550

MOBILIZATION

PART 1 - GENERAL

This work shall consist of performing preparatory operations, including moving personnel and equipment to the project site; paying bonds and insurance premiums; and establishing field offices and other facilities necessary to allow work to begin on a substantial phase of the Contract.

PART 4 - MEASUREMENT AND PAYMENT

Payment for mobilization shall be based on bid form. The payment will be a multiplier (expressed as percentage) to be added to the total amount of the Total Bid Amount. This price shall also include demobilization. There will be no escalation for mobilization percentage multiplier for the initial contract term and the extensions thereafter

Payment for mobilization for each site will be made in two equal installments. The first installment of 50% of the unit price for mobilization will be made on the first progress estimate following partial mobilization and initiation of construction work. The second installment will be made on the next progress estimate following completion of substantial mobilization, including erection of field offices.

No additional payment will be made for demobilization and remobilization because of shutdowns, suspensions of work, or other mobilization activities.

In case of Change Order outside the project area, mobilization shall be included in the price for other appropriate items.

In case of a Change Order within the project area, mobilization shall be considered as incidental and included in the unit bid price for mobilization. There will be no separate measurement and payment made for this work.

SECTION 01720

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 Purpose of Section

This section outlines the requirements for keeping record drawings (As-Built Drawings) and other data in accordance with the General Conditions and in accordance with the following specifications.

1.2 Record Drawings

- A. The Contractor shall maintain one complete set of drawings specifically for the purpose of recording changes during the construction of the project. During the course of construction, the Record Drawings shall be updated daily by the end of each working day.
- B. Record Drawings will be neat, accurate and complete. The Record Drawings will be available for periodic inspection by the Engineer.
- C. Record Drawings shall include the following, as a minimum:
 - 1. Details not shown on original Contract Drawings.
 - 2. Actual locations (horizontal and vertical) of all utilities uncovered during the course of the work.
 - 3. Any changes in grade and location of duct banks and appurtenances.
 - 4. Any changes, additions or deletions made by Change order or Addenda.
 - 5. Final coordinates of all structures built or modified under this Contract.
 - 6.
- D. The Contractor shall certify the Record Drawings as accurate and complete.

1.3 Submission Requirement

The Contractor shall submit the Record Drawings (both in digital format and 2 full size hardcopy sets) to the Project Officer upon substantial completion of the Project. Final payment will not be issued until the Record Drawing has been accepted by the Project Officer. The Contractor shall

make any necessary corrections and resubmit until acceptable to the County Project Officer.

PART 4 - MEASUREMENT AND PAYMENT

Project Record Documents are considered a subsidiary obligation of the contract, and therefore no payment will be made for this work.

SECTION 02619

PERMANENT SIGNS

PART 1 – GENERAL

1.1 Description of the Work

Provide all necessary labor, materials and equipment to provide, fabricate, and install the permanent signs, posts, and connections as shown on plans, details, and these specifications. All work under this section is subject to the Special and General Conditions and Instruction to Bidders which form a part of these specifications and to the current editions of the Arlington County Construction Standards and Specifications Manual and Virginia Department of Transportation Road and Bridge Specifications (VDOT). The Contractor shall be responsible for and governed by all the requirements thereunder.

PART 2 – MATERIALS

- 2.1 All traffic control signage shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
- 2.2 Sign anchors bases, or sleeve bases shall meet current AASHTO, FHWA, and VDOT requirements for breakaway and yielding and shall be galvanized or stainless steel.
- 2.3 Sign posts set in earth shall be U-type rolled rail post (2 lbs/foot) with full length punching of 3/8-inch diameter holes spaced 1 inch on center starting 1 inch from each end. Posts shall be re-rolled steel or an equivalent steel. Posts shall conform to the mechanical requirements of ASTM A-499-81, Grade 60 (Hot-Rolled Carbon Steel Bars and Shapes Re-Rolled from Rail Steel). All posts are to be hot dipped zinc galvanized.
- 2.4 The use of other than U-type posts at any location requires approval from Arlington County.
- 2.5 Where square posts are permitted the following standards must be met.
 - 2.5.1 Steel posts shall conform to ASTM A570, Grade 50 for Hot-Rolled Carbon Sheet Steel.

- 2.5.2 Post cross section shall be square formed from 14 or 12-gauge steel and shall be welded at the corner.
- 2.5.3 Posts shall be straight and have a smooth finish.
- 2.6 Banding used with saddles and buckles to fasten sign panels to streetlight or signal poles shall be stainless steel with a minimum width of ¾ inch.
- 2.7 Saddles shall be stainless steel with stainless steel bolts.
- 2.8 Buckles shall be stainless steel with a minimum width of ¾ inch.
- 2.9 Fasteners shall be 3/8" O.D. galvanized bolts with nylon washer for the sign front and galvanized hex nut and washer for the sign back.
- 2.10 Sign surface image shall conform to applicable portions of Sections 247 and 701 of the VDOT Road and Bridge Specifications. The sign colors and backgrounds shall conform to the details. Colors and shop drawings of signs shall be approved by the Owner prior to fabrication. Sign shall be drilled for bolts prior to painting
- 2.11 Post footings shall be Class A-3 concrete per Section 03100 of the Arlington County Construction Standards and Specifications Manual

PART 3 – EXECUTION

- 3.1. The signs shall be installed in locations as shown on the plans.
- 3.2. Posts located in earth shall be anchored or driven to a minimum depth of 36 inches.
- 3.3. Driving caps shall be used when driving posts following the manufacturer's instructions.
- 3.4. Posts located in concrete sidewalk or concrete medians A 12-inch minimum diameter cylindrical excavation to depth shown on detail shall be made to install the sign post. The post shall extend 36" (thirty-six inches) minimum below finished grade.
- 3.5. Concrete for footings shall be poured in accordance with the requirements outlined in the Section 03100 of the Arlington County Construction Standards and Specifications Manual.

- 3.6. The sign shall be centered on the post and fastened with the specified bolts. The lower edge of the signs shall be to the dimension above finished grade as shown on the details for each sign type.

PART 4 – MEASUREMENT AND PAYMENT

4.1 New Traffic Sign

New Traffic Signs as shown on the Drawings and as specified herein shall be measured in units of each, complete-in-place. Payment will be at the contract unit price per each, and shall include the furnishing of all signs, posts, concrete, fastening materials, and other material required to provide a complete sign installation, as well as all other work incidental to providing a complete installed sign.

4.2 Relocate Traffic Sign

Relocate Traffic Sign as shown on the Drawings and as specified herein shall be measured in units of each. The Project Officer may allow the Contractor to reuse the sign, post, or related hardware for re-installation at the new location, subject to approval by the Project Officer. If the Project Officer determines that the sign, post, or hardware is damaged or does not meet this specification; and that the reinstallation of any or all of the materials will not result in a satisfactory traffic sign installation the Contractor shall furnish and install new materials as required to provide a complete-in-place traffic sign.

PART 1 – GENERAL**1.6 Description of The Work**

Provide all labor, materials, tools, equipment, transportation, supplies, and incidentals to establish the location of pavement markings, install pavement markings, and reflectorized material on specified pavements in accordance with these specifications, the MUTCD, and as directed by the Engineer.

This work shall also include furnishing and installing colored coating for bicycle lanes.

PART 2 - MATERIALS**2.1 Pavement Markings**

Pavement Markings shall conform to the requirements of Section 246 of the VDOT Road and Bridge Specifications.

2.2 Glass Beads

Glass Beads shall conform to the requirements of section 234 of the VDOT Road and Bridge Specifications.

2.2 Colored Asphalt Coating

Colored asphalt coating shall be Street Bond CL by Quest Construction Products or County approved equal. Color shall be Emerald Green. Verify color with County prior to ordering.

PART 3 – EXECUTION**1.1 Timing of Installation**

The Contractor shall have a certified Pavement Marking Technician present during pavement marking operations.

Pavement markings shall be installed on new roadways prior to opening the roadway to traffic. Pavement marking installation shall be completed within the time limits herein on roadways where the pavement markings have been removed or obscured and the roadway is open to traffic unless otherwise directed by the Engineer. Installation of Type B, Class VI, pavement markings on asphalt roadways are not applicable to these requirements if they are inlaid with the last pass of the asphalt roller or directly after the asphalt roller using a separate roller. Installation of edge lines on roadways where the existing pavement markings have been removed or obscured are also required within these time limits unless otherwise indicated by the Engineer. Exceptions to the below time limits will be granted only for weather restrictions, and installation of epoxy resin pavement markings on new pavement shall not commence until after 24 hours of final surface placement.

Pavement marking installation on roads having traffic volumes of 10,000 ADT or more shall be completed within 24 hours after the end of the workday where the pavement markings were removed or obscured.

Pavement marking installation on roads having traffic volumes between 3,000 and 10,000 ADT shall be completed within 48 hours after the end of the workday where the pavement markings were removed or obscured.

Pavement marking installation on roads having traffic volumes of less than 3,000 ADT shall be completed within 72 hours after the end of the workday where the pavement markings were removed or obscured.

1.2 Provision for Temporary Markings

If the Contractor will not have pavement markings installed within the time limits specified, the Contractor shall install Type D construction pavement markings within the same time limits and maintain such until the final pavement markings can be installed. The cost of installing, maintaining, and removing the Type D construction pavement markings shall be borne by the Contractor at no cost to the County.

When establishing the location of pavement markings, the Contractor may mark the locations on the roadway by installing pre-markings.

Pre-markings shall be accomplished using Type D (removable, any class) tape, chalk, or lumber crayons except special pavement markings such as stop lines, crosswalks, messages, hatching, etc., shall be made using chalk or lumber crayons. Pre-markings shall be of the same general color as the pavement markings being pre-marked. When tape is used as pre-marking, pre-marking shall consist of 4-inch by 4-inch-maximum squares or 4-inch-maximum diameter circles spaced at 100-foot-minimum intervals in tangent sections and 50-foot-minimum intervals in curved sections. At locations where the pavement marking will switch colors, e.g., gore marking, the ends of the markings may be pre-marked regardless of the spacing. When chalk or lumber crayon is used as pre-marking, the entire length of the pavement marking may be pre-marked.

Pre-markings shall be installed whereby their installation shall not affect the adhesion of the pavement markings. When Type D tape is used as the pre-marking and the lateral location of such pre-markings to the final pavement markings exceeds 6 inches, the pre-markings shall be removed at no cost to the County.

1.3 Pavement Markings

Pavement markings shall be white or yellow markings as required by the MUTCD for the specific location or as specified by the Engineer and shall be installed in accordance with the manufacturer's recommendations and approved by the Engineer. The Contractor shall furnish a copy of the manufacturer's installation recommendations to the Engineer.

1.4 Pavement Line Markings

Pavement line markings shall consist of stop lines, crosswalks, and solid or skip lines used for, but not limited to, dividing lanes, marking edges, channelizing, outlining and marking safety zones around objects, and forming islands and parking lot stalls. Crosswalks and stop lines shall be installed using Type B, Class I or IV, markings. Solid lines or skip lines shall be installed using Type A or Type B markings as specified.

1.5 Pavement Message Markings

Pavement message markings shall be installed using Type B, Class I, IV, or VI, markings and shall include, but not be limited to, school zone markings, railroad crossing markings, disabled parking symbols, elongated arrows, word messages, etc.

The word SCHOOL shall be formed with characters that are 10 feet in height where permitted by the normal roadway width. School zone markings shall extend transversely across both lanes of two-lane roadways and across two or more approach lanes of roadways of three or more lanes.

Disabled parking symbols shall be 41 inches in height, 36 inches in width, and shall use a 4-inch stroke width for the lines.

1.6 Application

The Contractor shall protect the public from damage attributable to pavement marking operations. The Contractor shall be responsible for the complete preparation of the pavement surface, including, but not limited to, removing dust, dirt, loose particles, oily residues, curing compounds, concrete laitance, residues from eradication, and other foreign matter immediately prior to installing pavement markings.

The pavement surface shall be dry at the time of installation. Marking material shall not be applied within 24 hours following rain or other inclement weather.

Liquid markings shall be applied so as to prevent splattering and overspray and shall be protected from traffic until track free by the use of guarding or warning devices as necessary. If a vehicle crosses a marking and tracks it or if splattering or overspray occurs, the affected marking and resultant tracking shall be removed and new markings applied at the Contractor's expense.

Equipment shall also be thoroughly cleaned between changes in colors of materials. Pavement markings shall have clean and well-defined edges without running or deformation; shall be uniform, free of waviness; shall be straight on tangent alignment; and shall be on a true arc on curved alignment.

1.7 Tolerance

The widths of pavement markings shall not deviate more than 1/4 inch on tangent nor more than 1/2 inch on curves from the required width. The length of the gap and the length of the individual stripes that form skip lines shall not deviate more than two inches. The length of the gap and individual skip line shall be of such uniformity throughout the entire length of each that a normal striping machine will be able to repeat the pattern and superimpose additional striping upon the existing marking.

1.8 Glass Beads

Glass beads shall be applied at the rate specified herein and shall be evenly distributed over the entire surface of the marking. Beads shall be applied to the surface of liquid markings by a bead dispenser attached to the applicator that shall dispense beads simultaneously on and in the just-applied marking. The bead dispenser shall be equipped with a cut-off control synchronized with the cut off of the applied marking material so that the beads are applied totally to the completed line.

Beads shall be applied while the liquid marking is still fluid. Approximately 70 percent of beads shall be buried in the marking, and the remaining 30 percent shall be 50 to 60 percent embedded in the surface. Beads installed on crosswalks and stop lines on roadways with curbs only (no gutter) may be hand applied for two feet at the end of each line next to the curb with 100 percent of the beads embedded 50 to 60 percent in the surface.

Markings found to be unacceptable shall be removed, and new markings applied at the Contractor's expense.

1.9 Type A Markings

Paint may be applied to asphalt concrete and hydraulic cement concrete pavements. Paint shall not be applied over existing pavement markings of other materials unless the existing marking is 90 percent removed. Paint may be applied over existing paint markings. Paint shall be applied with a line painting machine that is capable of hot spraying paint directly onto the pavement surface with a uniformity of feed through its nozzles for widths of 4 through 8 inches. The machine shall be capable of applying two pavement stripes, either solid or skip, at the same time when double line markings are required. Paint tanks on the equipment shall be equipped with a mechanical agitator and paint shall be thoroughly mixed and heated such that it will not track within 60 seconds after its application.

Non-truck mounted equipment shall be self-propelled and regulated to allow for calibration of the amount of material applied. Glass beads shall be applied to the surface of the paint at the rate of 6 pounds per gallon of paint.

1.10 Type B Markings

Equipment shall be capable of providing mixing, heating, and agitation of material. Material shall be uniformly heated throughout the system in accordance with the manufacturer's recommendations. Thermoplastic material shall be maintained in the heating kettle and applied to the road surface at a minimum temperature of 400 degrees F. Heating kettles shall be equipped with an automatic thermostatic control device. The Contractor shall furnish a properly calibrated infrared instrument for the purpose of measuring the actual temperature of molten thermoplastic material.

Multi-component material shall be applied using internally injected guns for the mixing of catalyst and hardener.

Non-truck mounted equipment for application of thermoplastic material shall be of the screed extrude type with a screw driver or shall be self-propelled and regulated to allow for calibration of the amount of material applied. Non-truck mounted equipment for application of polyester and epoxy resin material shall be self-propelled and regulated to allow for calibration of the amount of material applied.

1.11 Thermoplastic (Class I)

Thermoplastic (Class I) material shall be applied only on asphalt concrete pavements and shall be applied by screed extrude, ribbon gun, or spray equipment. Alkyd thermoplastic may be applied directly after the paving operations; however, hydrocarbon thermoplastic shall not be applied less than 30 days after the paving operations.

Alkyd and hydrocarbon materials shall not be mixed together. Equipment shall be thoroughly cleaned before types of material are changed.

Thermoplastic shall not be applied over existing pavement markings of other materials unless the existing marking is 90 percent removed. Thermoplastic may be applied over existing thermoplastic markings. For concrete bridge decks that occur in asphalt roadways, Type B, Class VI, tape shall be used.

Primer/adhesive shall be applied to asphalt concrete surfaces more than 2 years old and shall be from the same manufacturer as the thermoplastic.

Glass beads shall be applied to the surface of the marking at the rate of 7 pounds per 100 square feet.

1.12 Polyester Resin (Class II)

Polyester resin (Class II) material shall be applied only on hydraulic cement concrete pavements. Polyester resin shall not be applied over existing pavement markings of other materials unless the existing marking is 90 percent removed.

Polyester resin may be applied over existing polyester resin markings.

Glass beads shall be applied to the surface at the rate of 8 pounds per gallon of material.

1.13 Epoxy Resin (Class III)

Epoxy resin (Class III) material shall be applied only to asphalt concrete pavement more than 1 day old and hydraulic cement concrete pavement. Epoxy resin shall not be applied over existing pavement markings unless the existing marking is 90 percent removed.

Glass beads shall be applied by the gravity method to the surface at the rate of 25 pounds per gallon of material.

1.14 Plastic Backed Preformed Tape

Plastic-backed preformed tape shall be installed in accordance with the manufacturer's recommendations and as denoted herein. Tape may be applied to asphalt concrete and hydraulic cement concrete pavements. Tape may be installed immediately following the final

rolling of the new asphalt concrete surface. Tape shall not be applied over existing pavement markings of other materials unless the existing marking is 90 percent removed.

Primer/adhesive shall be used for all installations except when tape is applied immediately following the final rolling of the new asphalt concrete surface and shall be from the same manufacturer as the tape.

Tape for pavement line markings shall be applied by an application cart as recommended by the manufacturer. Tape shall be tamped into place with a tamper cart with the weight as recommended by the manufacturer. The use of a vehicle to ride over the markings for tamping will not be permitted.

1.15 Eradication

Eradication of pavement markings for restriping when required shall be in accordance with the requirements of Section 512 of the VDOT Road and Bridge Specifications except only 90 percent removal of the existing markings is required.

1.16 Colored Asphalt Coating

Installers shall be accredited by the manufacture. Materials shall be installed in accordance with the manufacturer's written instructions. The Contractor shall apply a minimum of two coats.

PART 4 – MEASUREMENT AND PAYMENT

4.1 Pavement Line Marking

Measurement of pavement line markings (type, class, width) shall be per linear foot of line furnished and installed.

No additional measurement will be made when more than one line can be installed on a single pass such as center line with no-pass line, double center line, double lane line, reversible lane line, or two-way left turn center line.

Payment for pavement line markings (type, class, width) shall be per linear foot and shall include all labor, materials, tools, equipment, transportation, supplies, and incidentals required to furnish and install the line markings as specified.

No deduction will be made for the unmarked area when the marking includes a broken line such as, skip lane line.

4.4 Colored Asphalt Coating

Measurement of colored asphalt coating shall be per square foot of area completed. Payment for colored asphalt coating shall be per square foot and shall include all labor, materials, tools, equipment, transportation, supplies, and incidentals required to complete the coating.

SECTION 04301 REINFORCED MASONRY RETAINING WALL

PART 1 – GENERAL

1.1 Description of the Work

Provide all plant, labor, materials and equipment for the construction of reinforced masonry retaining walls as called for on the approved plans and as detailed in the Construction Standards and specified herein.

1.2 Related Work Specified Elsewhere

Section 03100 – Concrete Formwork, Reinforcement and Materials

Section 04100 – Mortar and Grout

Section 04200 – Masonry Units

1.3 Applicable Specifications

Virginia Department of Transportation, Road and Bridge Specifications (VDOT)

PART 2 – MATERIALS

2.1 Mortar

Mortar shall conform to Section 222 of the VDOT specifications

2.2 Stone

Stone shall conform to Section 204 and 503.03a of the VDOT specifications

2.3 Gravel Backfill

Porous backfill shall clean crushed stone or gravel aggregate size no. 57 or 68 and shall conform to Section 205 of the VDOT specifications

2.4 Grout

Grout shall conform to Section 218 of the VDOT specifications

2.5 Masonry Block

Masonry block shall conform to Section 222 of the VDOT specifications

2.6 Steel Reinforcement

Steel Reinforcement shall conform to Section 223 of the VDOT specifications

2.7 Filter Material

Filter material shall be Mirafi 140, Typar 3401 or approved equal

SECTION 04301**REINFORCED MASONRY RETAINING WALL****PART 3 – EXECUTION**

Construct reinforced masonry retaining walls in conformance with the approved plans and details. Stabilize earth wall with shoring or bracing as needed. Protect construction components from weather to insure proper placement and curing. Provide sample of bluestone cap and stone veneer to Project Officer for review and approval prior to execution.

PART 3 – MEASUREMENT AND PAYMENT

Reinforced masonry retaining walls shall be measured as each based on the approved plans and details.

Payment shall include but not limited to all materials, labor, formwork, sheeting, shoring, excavation, backfill, testing of materials, labor, material and equipment necessary for a complete and structural sound retaining wall in place.

SECTION 13180**MAINTENANCE AND CONTROL OF TRAFFIC****PART 1 – GENERAL**

This work shall consist of maintaining and protecting workers, vehicular and pedestrian traffic through areas of construction within the limits of the project and over the approved traffic detours. All work shall be in accordance with the latest Arlington County Construction Standards and Specifications, Virginia Department of Transportation (VDOT) Road and Bridge Specifications, the Manual on Uniform Traffic Control Devices (MUTCD), and the Virginia Work Area Protection Manual (WAPM), the standard drawings, and the Contract, as directed by the Project Officer.

1.1 Description of Work

Provide all plant, labor, supervision, materials, and equipment to install, maintain, relocate, and remove all temporary traffic control devices.

1.2 Related Work Specified Elsewhere**1.3 Applicable Specifications**

- A. Virginia Department of Transportation (VDOT)
- B. VDOT Road and Bridge Specifications
- C. Manual on Uniform Traffic Control Devices (MUTCD)
- D. Virginia Work Area Protection Manual (WAPM)
- E. Occupational Safety and Health Act, State & Federal (OSHA)

1.4 Quality Assurance**27. Work Zone Traffic Control Certification**

The Contractor shall have at least one (1) employee who is certified by VDOT in Basic Work Zone Traffic Control; and who will be responsible for the placement, maintenance and removal of work zone traffic control devices within the project limits in compliance with the permit requirements and conditions, the approved plan, specifications, the Virginia Work Protection Manual and the Manual of Uniform Traffic Control Devices. An

Employee certified by VDOT in the Intermediate Work Zone Traffic control shall be on-site to provide supervision during work zone adjustments or changes to traffic control due to field conditions. This employee shall provide evidence of this certification upon request from Arlington County personnel.

PART 2- MATERIALS

2.1 General

Material shall conform to the requirements of the applicable VDOT specification.

2.2 Signalization, Barricades, Channelizing Devices, Safety Devices, and Pavement Markings

Signalization, barricades, channelizing devices, safety devices, and pavement markings shall conform to the requirements of Division VII of the latest VDOT specifications and the MUTCD.

2.3 Temporary Pavement Markers

Temporary pavement markers shall conform to the requirements of VDOT Section 235, Retroreflectors.

2.4 Construction Pavement Markings

Construction pavement markings shall conform to the requirements of VDOT Section 231 (Paint), and Section 246 (Pavement Marking).

2.5 Portable Changeable Message Signs

Portable changeable message signs shall meet the requirements of Section 512.03 subsection q of the VDOT Road and Bridge Specifications.

PART 3- EXECUTION

This section shall conform to the VDOT Specification Section 512.03.

PART 4- MEASUREMENT AND PAYMENT

Payment for MOT shall be based on the bid form. The payment will be a multiplier, expressed as a percentage, to be added to the total amount of the project assignment cost (applied only to the amount being invoiced). There will be no escalation for MOT percentage multiplier for the initial contract term and the extensions thereafter

The Contractor shall not be entitled to any additional payment for changes to MOT which are the result of the Contractor's work schedule or resource allocation, weather delays, or other factors not controlled by the County.

Payment for maintenance of traffic is full compensation for providing the proper pedestrian and vehicular traffic controls during all stages of construction and includes furnishing, preparing, fabricating, installing, maintaining, removing, relocating, repairing, or replacing pedestrian and vehicular traffic control devices and signs as necessary, and all other materials, labor, hardware, equipment, tools, supplies, and incidentals. Contractor shall be responsible for acquiring VDOT permit for any revision during construction and/or as required by the project contract to the approved traffic control plan.

Payment for maintenance of traffic for each site will be made as partial payments. The first installment of 50 per cent of the unit price for maintenance of traffic will be made on the first progress estimate following partial mobilization and initiation of construction work for the particular site. The remaining 50% of the contract lump sum price bid will be paid on each subsequent estimate based on the percent of work completed at the site all the way through Final Acceptance of work. The Project Officer shall have the authority to decide on the appropriate payment for each subsequent estimate.

SECTION 311300

TREE PROTECTION AND ROOT PRUNING

PART 2 - GENERAL

28.

1.01 SUMMARY

29.

A. This Section includes the following:

a. Protection of existing trees to remain:

- i. Pruning of existing trees roots that are affected by execution of the Work, whether temporary or permanent construction.
- ii. Aeration and Root Protection Matting
- iii. Tree Protection Fencing

Provide all labor, materials, tool and equipment as required to have tree protection applied on all areas called for on plans.

In addition to the specifications contained herein, Work shall be performed in accordance with the Arlington County Department of Parks & Recreation Design Standards for Tree Protection and Trimming as shown on plans and available online at:

<http://parks.arlingtonva.us/design-standards/>

Related Sections:

- i. 02200 Earthwork
- ii. 02100 Clearing and Grubbing
- iii. 01500 Erosion and Sediment Control and Pollution Prevention
- iv. 329000 Exterior Plants
- v. 329200 Seeding and Sodding

1.02 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of planting soil.
- B. Imported Topsoil: Soil obtained off-site that meets the specifications herein for topsoil and is suitable for use in planting soil/backfill soil mixture when existing soil quantities are insufficient. Refer to Section 329100 "Planting Preparation."
- C. Planting Soil/Backfill Soil Mixture: Existing soil modified as specified to be suitable for planting. Refer to Section 329100 "Planting Preparation."

SECTION 311300

TREE PROTECTION AND ROOT PRUNING

- D. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill, before placing planting soil.
- E. ISA: International Society of Arboriculture
- F. CBAY: Chesapeake Bay, typically referring to CBAY watershed.
- G. Urban Forester/County Urban Forester: Refers to the Arlington County Urban Forester
- H. Landscape Architect: Refers to an Arlington County Landscape Architect or their designee.

1.03 SUBMITTALS

- A. Product Data: For each type of product indicated in Section 2.0
- B. Certification: From Contractor's arborist, certifying that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.
- C. Maintenance Requirements: From Contractor's arborist, for care and protection of trees affected by construction during and after completing the Work.
- D. Contract arborist Qualifications: Contractor shall submit a copy of valid ISA certification to the Project Officer for approval with confirmation by Urban Forester.
- E. List products to be used and firms, including qualifications to perform work.
- F. Provide schedules for performance of work.

1.04 QUALITY ASSURANCE

- A. Contractor shall ensure that tree and plant protection methods are implemented by an arborist Certified by the International Society of Arboriculture (ISA) to provide for the care of the trees and plants impacted by construction activities. Provide ISA certification verification to Project Officer per section 1.03 "Submittals" prior to beginning work.
- B. The Contractor shall identify to the Project Officer at least one authorized on-site Point of Contact (POC) who is, by training or experience, familiar with the policies, regulations and standards applicable to the work being performed. The POC and the certified arborist may be the same individual.
- C. Crews shall be directly supervised by an ISA certified arborist.

SECTION 311300

TREE PROTECTION AND ROOT PRUNING

- D. All workers, through related training and on the job experience, shall be familiar with the technical aspects of arboricultural work and equipment used in such operations.
- E. Trucks and mechanized equipment shall not enter tree protection areas.
- F. Stump grinding shall be with small machines specifically designed for that purposes. No stumps shall be excavated except as described herein. Stumps shall be ground not more than 8" below grade and care must be taken to minimize damage to root of the trees to remain.
- G. No stump grinding within tree protection areas.
- H. All work in or near tree protection areas shall be carefully performed by Contractor in order to avoid damage to tree trunks, branches, root system, and other existing plant materials and soils that are to remain.
- I. Silt shall not be allowed to collect in preservation or reforestation areas. Silt accumulating in preservation areas shall constitute damage and will require remedial activity. All silt shall be removed from preservation areas within 24 hours of siltation. The methods and procedures for silt removal within tree preservation and reforested areas shall be approved by the Project Officer with confirmation by the Urban Forester.
- J. Tree Pruning Standard: Comply with ANSI A300 (Part 1), "Tree, Shrub, and Other Woody Plant Maintenance--Standard Practices (Pruning)."
 - a. Pruning shall remove only dead, dying, damaged or broken limbs greater than 1" – 1.5" in diameter.
 - b. Pruning for clearance shall be reviewed and approved by Project Officer with confirmation by the Urban Forester.

- K. Urban Forester Notification: The Contractor shall notify the Project Officer 72 hours prior to the following events, so that the County's Urban Forester can be notified and present at a pre-construction site meeting (refer to Section 3) and to observe work:

- vi. Tree protection fencing installation
1. Tree or root-pruning operations.
 2. Work within tree protection zones.
 3. Tree planting.

SECTION 311300

TREE PROTECTION AND ROOT PRUNING

PART 2 - PRODUCTS

2.01.1 MATERIALS

- A. Temporary Tree Protection Fence: Unless otherwise indicated in approved plans, tree protection fence shall be two-inch wire mesh fabric measuring 72 inches in height mounted on 1.9" O.D. steel pipes driven 24 inches into the ground, placed 120 inches on-center maximum. Refer to Arlington County DPR standard detail on approved plans.
- B. Tree Protection Signs: Shall be of heavy-duty sheet aluminum or weatherproof plastic material measuring 12 inches by 18 inches. Signs shall state "NO ENTRY, TREE PROTECTION AREA, CALL 703-228-6557 TO REPORT VIOLATIONS" in both English and Spanish. Signs shall be mounted on fence every 50 feet maximum.
- C. Topsoil: Refer to Section 329100 – Plant Preparation.
- D. Bark Mulch: Refer to Section 329100 –Plant Preparation
- E. Temporary Root Protection Matting: If required in approved plans, temporary root protection matting shall be a double-sided geocomposite, geonet core, non-wove covering such as Tendrain 770-2, as manufactured by Tenax Corporation, Baltimore, MD or approved equal. Six (6) inches of wood chip mulch shall be applied to area to receive root protection matting prior to installation. Matting shall be installed in a single layer.
- F. Landscape nails: When required, spikes shall be 12" as indicated on the drawings.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Prior to the construction activities, the Contractor shall meet on-site with the Project Officer and
- B. Temporary Tree Protection Fencing: Install temporary tree protection fencing and signs around tree protection zones to protect remaining trees and vegetation from construction damage. Maintain temporary fence and remove when construction is complete after approval by Project Officer with confirmation by the County Urban Forester.
- C. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.
- D. No personnel, vehicles, equipment, construction materials, or construction debris shall be allowed inside the tree protection areas at any time during construction without the written permission of the Project Officer.

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TREE PROTECTION AND ROOT PRUNING

- E. consent of the Project Officer with confirmation by the Urban Forester. If a violation is observed, the Contractor will be notified by the Project Officer and shall immediately rectify the situation. Continued and subsequent violations will result in a fine of \$500 per day of violation.
- F. Special Demolition Procedures:
 - 1. Demolition of walks and hardscape within tree protection areas shall be directly supervised by an ISA certified arborist.
 - 2. Mechanized equipment shall not enter tree protection areas (TPAs) or reforestation areas.
 - 3. Backfill of voids created by demolition within the TPAs and reforestation areas shall be loosely placed topsoil. Only the amount of topsoil necessary to fill the void without spreading over existing grades shall be allowed.

3.02 EXCAVATION

- A. Install shoring or other protective support systems to minimize sloping or benching of excavations if indicated in the approved plans.
- B. Do not excavate within tree protection zones, unless otherwise indicated.

- C. Where utility trenches are required within tree protection zones, Contractor shall perform root pruning prior to trenching.
- D. Where excavation is proposed within the critical root zone of trees to remain, Contractor shall perform root pruning as indicated in approved plans prior to excavation.
- E. Where new finish grade is indicated below existing grade around trees, Contractor shall slope grade outside of tree protection zones. Maintain existing grades within tree protection zones.

3.3 ROOT PRUNING:

- A. When required, root pruning locations will be indicated on the approved plans. Exact location and depth shall be determined on site with Project Officer and Urban Forester during the pre-construction meeting.
- B. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots with clean, sharp pruning instruments; do not break or chop. All root pruning shall be performed by an ISA certified arborist. Refer to Arlington County Department of Parks & Recreation Design Standards "Tree Protection and Trimming" as shown on plans and available online at:

<http://parks.arlingtonva.us/design-standards/>

SECTION 311300

TREE PROTECTION AND ROOT PRUNING

3.4 TREE REPAIR AND REPLACEMENT

- A. Promptly repair trees damaged by construction operations within 24 hours. Treat damaged trunks, limbs, and roots according to Arlington County Urban Forester or contract arborist's written instructions.
- B. The Contractor shall be responsible for any damage to trees within the Tree Protection Area caused by the Contractor's personnel, vehicles, or equipment at the site. Any damage to a tree to remain shall result in a payment by the Contractor to the Project Officer for the amount of damage based on the latest edition of the Council of Tree and Landscape Appraisers Guide for Plant Appraisal published by the International Society of Arboriculture (ISA). All trees are to be valued as landscape trees.

3.5 DISPOSAL OF WASTE MATERIALS

- A. Burning is not permitted.
- B. Disposal: Remove excess excavated material and displaced trees from Owner's property and legally dispose.

30. PART 4 – MEASUREMENT AND PAYMENT

- 4.1 The measurement of TREE PROTECTION FENCE shall be for LINEAR FOOT of fence including all appurtenances as delivered to the site, furnished, installed, maintained and removed at project completion in accordance with the plans and specifications.
- 4.2 The unit price for Tree Protection Fence shall include the cost of all labor, materials, equipment and incidental expenses necessary to complete the work.
- 4.3 The measurement of ROOT PRUNING shall be for LINEAR FOOT of pruning root pruning performed on the project in accordance with the plans and specifications.
- 4.4 The unit price for ROOT PRUNING shall include the cost of all labor, materials, equipment and incidental expenses necessary to complete the work.
- 4.5 The measurement of ROOT PROTECTION MATTING shall be for SQUARE FOOT of matting as delivered to the site, furnished, installed, maintained and removed at project completion in accordance with the plans and specifications.
- 4.6 The unit price for ROOT PROTECTION MATTING shall include the cost of all labor, materials, equipment and incidental expenses necessary to complete the work including anchor/landscaping nails, in accordance with the approved plans and specifications. Unless otherwise specified on the approved plan, excavation for ROOT Protection Matting installation is considered incidental to the work and shall not be paid separately.

SECTION 329100

PLANTING PREPARATION

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes erosion control materials, soil amendments, mulching and topsoil.
- B. Provide all labor, materials, tools and equipment as required to have topsoil, planting soil mix, soil stabilization, amendments, and mulch applied per the specifications on all areas disturbed by construction to receive plant materials as indicated in the approved plans.
- C. Related Sections:
 - a. Section 02200 Earthwork
 - b. Section 02100 Clearing and Grubbing
 - c. Section 311300 Tree Protection and Root Pruning
 - d. Section 01500 Erosion and Sediment Control and Pollution Prevention
 - e. Section 329200 Seeding and Sodding

f. Section 329300 Exterior Plants

D. In addition to the specifications contained herein, Work shall be performed in accordance with the:

- a. Drawings and general provisions of the contract, including general and supplementary conditions
- b. Arlington County Department of Parks & Recreation Design Standards as shown on the plans and available online at:

<http://parks.arlingtonva.us/design-standards/>

1.02 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of planting soil.
- B. Imported Topsoil: Soil obtained off-site that meets the specifications herein for topsoil and is suitable for use in planting soil/backfill soil mixture when existing soil quantities are insufficient.

SECTION 329100

PLANTING PREPARATION

- C. Planting Soil/Backfill Soil Mixture: Existing soil modified as specified to be suitable for planting.
- E. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill, before placing planting soil.
- F. ISA: International Society of Arboriculture
- G. CBAY: Chesapeake Bay, typically referring to CBAY watershed.
- H. Urban Forester/County Urban Forester: Refers to the Arlington County Urban Forester
- I. Landscape Architect: Refers to an Arlington County Landscape Architect or their designee.

1.03 SUBMITTALS

- A. Samples of all materials specified shall be submitted to the Project Officer for approval with coordination of the Landscape Architect. All approvals shall be in writing.
- B. Samples:
 - a. Existing Topsoil: Provide 1-pound sample of existing topsoil with the following soil test reports.

- i. Fertility: pH, nitrate nitrogen, ammonia nitrogen, phosphate phosphorous, potassium, calcium, magnesium, zinc, iron, manganese.
 - ii. Suitability: total salinity, boron, sodium, potassium, calcium, magnesium, chloride, sulfate.
 - iii. Physical properties including organic content and particle size distribution.
- b. Imported Topsoil: If imported topsoil is required, Contractor shall provide a 1-pound sample of the imported topsoil with the soil test reports as noted above for "Existing Topsoil."
- c. Bioretention Filter Media: The Bioretention Filter Media must be from a pre-approved vendor. A listing of Arlington County pre-approved and certified vendors is included in the bid proposal attachments (see "PREAPPROVED VENDORS/SUPPLIERS OF ARLINGTON COUNTY CERTIFIED BIORETENTION FILTER MEDIA").
- d. Mulches and Organic Matter/Compost: Sample of mulch and organic matter/compost may be requested in lieu of inspection.

SECTION 329100

PLANTING PREPARATION

- e. Product certificates: Contractor shall submit for each type of manufactured product, to be approved by the Project Officer in coordination with Landscape Architect or Urban Forester and complying with the following:
 - a. Manufacturer's certified analysis for standard products.
- f. Geotextile/Soil Stabilization/Erosion Control Fabric: Sample

1.04 QUALITY ASSURANCE

- A. Contractor shall have all existing and furnished topsoil to be used for seeding and sodding, and for planting areas tested by a state laboratory or recognized commercial soil-testing laboratory in order to determine recommendations for the types and quantities of soil amendments. The results of this test will determine the rates and types of fertilizers, lime, soil conditioners, and other amendments, if necessary.
 - a. Soil tests shall use a representative sample of on-site soils. If existing soil has been undisturbed and is suitable as determined by the soil test, no additional amendments are required.
 - b. Adjustments should be made based on soil test results.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All materials shall conform to those stipulated below, unless otherwise approved in writing by the Project Officer with confirmation by the Landscape Architect or County Urban Forester.
- B. Specified materials to be applied in amounts and methods herein stipulated.
- C. Delivery tickets indicating date, weight, analysis and vendor's name, to be submitted to Project Officer.

2.02 SOIL AMENDMENTS

- A. Lime: Application rates for liming materials and lime material type chosen shall be determined by required soil tests and approved by the Project Officer in coordination with the Landscape Architect or Urban Forester.

SECTION 329100

PLANTING PREPARATION

- a. When required and unless test results indicate otherwise, lime material shall be dry and free flowing pulverized limestone, hydrate lime or burnt lime that contains at least 50% total oxides (calcium oxide plus magnesium oxide). Ground limestone shall be ground to such fineness that at a minimum of 50% will pass through a 100% mesh sieve and 98% - 100% will pass through a 20 mesh sieve. Lime material shall meet the Virginia Agricultural Liming Materials Act, Code of Virginia Section 3.1-126.1.
- B. Fertilizer: Fertilizer type and application rate shall be determined by results of required soil tests and approved by the Project Officer in coordination with the Landscape Architect or Urban Forester:
 - a. When required and unless test results indicate otherwise, commercial-grade complete fertilizer will be of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
 - i. Composition: 10 percent nitrogen, 20 percent phosphorous, and 10 percent potassium, by weight.
 - b. All fertilizers shall be uniform in composition, free flowing, and suitable for application with approved equipment.
 - c. Fertilizers shall be delivered to the site fully labeled according to applicable state fertilizer laws and shall bear the name, trade name, or trademark and warranty of the product.

- C. Delay mixing fertilizer with planting soil if planting will not proceed within 2 days.
- D. Spread fertilizer and lime with approved equipment.

2.03 EXISTING TOPSOIL

- A. Existing, native surface topsoil formed under natural conditions with the duff layer retained during excavation period and stockpiled.
 - a. Contractor shall verify suitability of stockpiled soil to produce or to be amended to produce viable planting soil for lawns and planting beds as described herein.
- B. Existing topsoil is to be used to extent possible for lawn areas and is to be amended per the specifications to become the Planting Soil/Backfill Soil Mixture for use in planting pits and bed areas.

SECTION 329100

PLANTING PREPARATION

- C. Prior to use for lawn areas or in planting soil mix, Contractor shall remove all stones, roots, plants, sod, clods, and clay lumps larger than 1/2 -inch in any direction, pockets of coarse
- D. sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris and other extraneous materials that are harmful to plant growth.
- E. After removal of debris and extraneous materials noted above, the Contractor shall obtain soil tests for the existing soil per the requirements in section 1.04 "Quality Assurance."
- F. Contractor shall submit soil test results to the Project Officer for approval with confirmation by the Landscape Architect or Urban Forester.
- G. Contractor shall supplement the existing soil as recommended in soil test results to achieve a viable planting soil for lawns and/or planting beds. Contractor shall supplement with imported topsoil per the specifications from off-site sources when quantities of approved, existing topsoil are insufficient for lawns and planting beds.
- H. Contractor shall submit a sample of the topsoil that has been amended based on soil test results for approval by the Project Officer with confirmation by Landscape Architect or Urban Forester prior to use in lawn areas or planting beds or pits.
- I. Topsoil installed on grade shall attempt to match existing soil texture, except for situations where clay subsoil exists. In the event that clay subsoil exists, use loam or silt loam topsoil.
- J. Imported topsoil rather than existing topsoil is to be used for planting in bioretention areas, unless otherwise indicated on the approved plans.

2.04 PLANTING SOIL MIX/BACKFILL SOIL MIXTURE

- A. The planting soil mix (also known as backfill soil mixture) shall consist of existing topsoil that has been approved for planting per the specifications above and approved organic matter.
- B. The planting soil mix/backfill soil mixture shall be composed of $\frac{3}{4}$ approved existing topsoil and $\frac{1}{4}$ approved organic matter as described in the Arlington County DPR Standard planting details, unless otherwise indicated by the Project Officer with confirmation by the Landscape Architect or Urban Forester.

2.05 IMPORTED TOPSOIL

- A. Contractor shall add imported topsoil when required on the drawings, when quantity of existing topsoil is insufficient or when determined to be necessary due to soil testing results.

SECTION 329100

PLANTING PREPARATION

- B. Topsoil shall be the natural, original surface soil, a sandy loam uniform in composition and shall be in a friable condition and shall contain less than 3 percent subsoil, hardpan material, stones and clods larger than 1/2 inch in diameter in any direction. It shall also be free of sticks, tree or shrub roots, debris and other material undesirable for plant growth. The area and the topsoil shall be free of undesirable plant such as, but not limited to, Bermuda grass, nut sedge, mug wort or noxious weeds as set forth in the Federal Seed Act.
- C. The topsoil shall contain at least 5 percent organic matter. It shall be a sandy loam consisting of at least 5 but not more than 20% clay, at least 10 but not more than 80% sand. It shall have a pH between 5.5 to 6.5. Soluble salts (salinity) shall not exceed 500 ppm. Soil fertility shall be "High" in natural nutrients based on the coordinated ratings in pounds per acre as established by the National Soil and Fertilizer Research Committee.
- D. Topsoil which has been manufactured by blending materials which individually do not meet the requirements of this specification will not be accepted even though the resulting blend meets the organic matter, mechanical analysis, pH and soluble salts requirements. Agricultural limestone at not more than 5 pounds per cubic yard of topsoil any be used to adjust the pH provided it is well mixed in a manner which does not destroy the structure of the soil.

2.06 IMPORTED TOPSOIL FOR BIO-RETENTION AREAS

- A. If bioretention is specified in the approved plans, the bioretention filter media shall be ordered from a pre-approved Arlington County vendor per the Construction Documents. A listing of Arlington County pre-approved and certified vendors is included in the bid proposal attachments (see "PREAPPROVED VENDORS/SUPPLIERS OF ARLINGTON COUNTY CERTIFIED BIORETENTION FILTER MEDIA").

2.07 MULCHES AND ORGANIC MATTER

- A. Straw Mulch for Seeded Areas: Provide air-dry, clean, mildew and seed-free, salt hay or

threshed straw of wheat, rye, oats or barley.

- B. Wood Chip Bark Mulch for Planted Areas: Wood Chip Bark Mulch shall be double-shredded hardwood bark mulch, uniform in size and free of stones, clods, non-organic debris or other foreign material and aged for at least 6 months from an approved source. Insufficiently or improperly aged mulch containing high bacterial counts or high levels of bark or other materials resistant to decomposition shall not be used. Mulch shall not contain the trunk of trees.
- C. Organic Matter/Compost Mulch: Well-composted, trash-free, stable, and weed-free organic matter such as composted bark, leaf mold or other plant debris material that has been composted to a point of decay and is mature.
 - a. pH ranges of 5.5 to 8; moisture content 35 to 55 percent by weight
 - b. 100 percent passing through 1-inch sieve
 - c. Peat moss shall not be used.
 - d. Organic amendments shall be commercially prepared and shall comply with the U.S. Compost Council Seal of Testing Assurance Program's Test Methods for the Examination of Composting and Compost (STA/TMECC) criteria, or as modified in approved plan documents.

2.08 SOIL STABILIZATION/EROSION CONTROL FABRIC

- A. ECS-2B Double New Straw Biodegradable Rolled Erosion Control Product, or an approved equal shall be used in all planting beds/reforestation areas.
 - a. Shall meet Type 2.D specifications for ECTC and HFWA FP-03 Section 713.17
 - b. Shall have two (2) layers of organic jute netting sewn together with biodegradable thread.
 - c. Overlap sections 12" and secure with manufacturer's recommended steel wire staples, 6 inches long.
- B. Erosion-Control Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended steel wire staples, 6 inches long.
- C. Erosion-Control Fiber Mesh: Biodegradable burlap or spun-coir mesh, a minimum of 0.92 lb/sq. yd with 50 to 65 percent open area. Include manufacturer's recommended steel wire staples, 6 inches.
- D. Erosion-Control Mats: Cellular, non-biodegradable slope-stabilization mats designed to isolate and contain small areas of soil over steeply sloped grades, of 3 inch nominal mat thickness. Include manufacturer's recommended anchorage system for slope conditions.

- a. Products: Subject to compliance with requirements and plan documents, the products below, or an approved equivalent, be used:

- i. Invisible Structures, Inc.; Slopetame 2
- ii. Tenax Corporation – USA; Tenweb.

A. PART 3 - EXECUTION

3.01 PREPARATION

SECTION 329100

PLANTING PREPARATION

- A. All identified areas within the project limits shall have approved topsoil mix spread on them and be prepared for seeding and sodding by bringing ground surfaces to grades shown on the drawings. Planting pits and bed areas identified on the approved plans shall be prepared in accordance with the applicable DPR Landscape Standard details.
 - a. No seeding shall be done on frozen ground or when the temperature is 32F or lower. Refer to specification 329200, "Seeding and Sodding." Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties, sidewalks and areas.
 - b. Rototilling shall not be performed within the critical root zone of trees to be preserved.
 - c. The soil shall not be tilled or amended when the soil's moisture capacity is above field capacity or when the soil is frozen.
 - d. Contractor shall identify utilities, existing irrigation and underground utilities. All areas on either side of the utility marking shall be amended by hand.
 - e. Contractor shall verify that no foreign or deleterious material or liquid has been deposited in soil within a planting area.
 - f. Contractor shall proceed with installation only after both unsatisfactory conditions have been corrected and rough grading has been completed and approved by the Project Officer in coordination with the Landscape Architect or Urban Forester.
 - g. Contractor shall protect structures, utilities, sidewalks, pavements and other facilities, trees, shrubs and plantings from damage caused by planting operations.
 - a. Protect adjacent and adjoining areas from hydro-seeding and hydro-mulching overspray.
 - b. Protect grade stakes set by others until directed to move them.

- h. Surfaces shall conform to finish grade, free of water retaining depressions, soil friable, free of clay and of uniformly firm texture.
- B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 6 inches. Remove stones larger than 1/2 inch in any direction and sticks, roots, rubbish, and other extraneous matter including grass vegetation and turf and legally dispose of them off of Arlington County property. Do not mix into surface soil.

SECTION 329100

PLANTING PREPARATION

- a. Thoroughly blend planting soil mix off-site before spreading or spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil mix. Delay mixing amendments with soil if planting will not proceed within 2 days.
 - b. Loosen surface soil to a depth of at least of 6 inches. Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top 4 inches of soil. Till soil to a homogeneous mixture of fine texture.
 - c. Spread planting soil mix to a depth of 4 inches but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
- C. Unchanged Subgrades: If lawns are to be planted in areas unaltered or undisturbed by excavating, grading, or surface soil stripping operations, prepare surface soil as follows:
 - a. Remove stones larger than 1/2 inch in any dimension and sticks, roots, trash, and other extraneous matter. Legally dispose them off of Arlington County property. Do not mix into surface soil
 - b. Loosen surface soil to a depth of at least 6 inches, apply soil amendments and fertilizers according to the planting soil mix proportion and mix thoroughly into the top 4 inches of soil.
- D. Finish Grading: Grade landscape areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Adjust for the thickness of sod, where applicable. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit fine grading to areas that can be planted in the immediate future.
- E. If bioretention areas are specified in the approved plans, the Contractor shall construct these areas in accordance with the Virginia DEQ Stormwater Design Specification No. 9, Version 2.0, January 1, 2013.
- F. Contractor shall avoid unnecessary compaction of the soil during grading.

- G. Contractor shall ensure appropriate slopes of the swales, berms and final grades.
- H. Immediately following each day's work, contractor shall clean all dirt, excess soil, debris and trash from the site. Contractor shall protect and store additional soils in stockpiles protected from saturation, erosion, weed growth and contamination with plastic sheeting or tarps.

SECTION 329100

PLANTING PREPARATION

- I. Amendments for seeding and sodding areas shall be applied after determining by soils test as follows:
 - a. Lime as specified shall be spread uniformly over designated area. Rate depends on soil tests. Soil tests shall be made before lime application at 8 to 10 plugs per acre taken by the method prescribed the United States Department of Agriculture.
 - b. Fertilizer shall be spread after the lime has been applied. Rate shall be as recommended per the soil tests.
 - c. Fertilizer shall be spread with approved equipment and at an even rate over the area to be seeded or sodded.
 - d. Work lime and fertilizer into top 4 inches of topsoil and grade to smooth surface ready for seeding.
- J. Restore areas if eroded or otherwise disturbed after finish grading and before planting.
- K. Prepared lawns and planting areas shall be inspected and approved by Project Officer in coordination with Landscape Architect prior to seeding, sodding or planting.
- L. If the graded areas develop volunteer weed growth, the growth shall be eliminated at the expense of the Contractor.

3.02 SOIL STABILIZATION MATERIALS

- A. Prepare planting area as specified.
- B. Moisten prepared planting area before planting if surface is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- C. Install Soil Stabilization from top of slope, overlapping joints by 12 inches, working downward, and as recommended by material manufacturer for site conditions. Fasten as recommended by material manufacturer.
- D. Plant shrubs, trees and perennials through Soil Stabilization fabric by carefully separating fabric layers to allow space for planting.

- E. Remove non-biodegradable stabilization materials after plant establishment.

SECTION 329100

PLANTING PREPARATION

B. PART 4 - MEASUREMENT AND PAYMENT

- 4.01 The measurement of PLANTING MIX to be paid for shall be per CUBIC YARD of planting mix in accordance with the plans, specifications and to the satisfaction of the Project Officer.
- 4.02 The unit price for PLANTING MIX shall include the cost of furnishing all labor, materials, equipment and incidental expenses, including but not limited to soil amendments, organic matter, and soil stabilization materials, necessary to complete the work, all in accordance with the plans, specifications and approval of the Project Officer.
- 4.03 The measurement of BIORETENTION FILTER MEDIA to be paid for shall be per CUBIC YARD of planting mix in accordance with the plans, specifications and to the satisfaction of the Project Officer.
- 4.04 If bioretention is explicitly called for in the approved plans, the unit price for BIORETENTION SOIL MEDIA shall include the cost of furnishing all labor, materials, equipment and incidental expenses, including but not limited to soil amendments, organic matter, and soil stabilization materials, necessary to complete the work, all in accordance with the plans, specifications and approval of the Project Officer.
- 4.05 The measurement of WOOD MULCH to be paid for shall be per CUBIC YARD of Mulch in accordance with the plans, specifications and to the satisfaction of the Project Officer.
- 4.06 The unit price for WOOD MULCH shall include the cost of furnishing all labor, materials, equipment and incidental expenses necessary to complete the work, all in accordance with the plans, specifications and approval of the Project Officer. Does not include excavation.

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SEEDING AND SODDING

PART 1 - GENERAL

1.02 SUMMARY

The work includes, but is not limited to the provision of all material, services, labor, and equipment necessary to perform the following as required per the plans for the establishment of turf, meadow grasses and/or wildflowers:

- a. Seeding
 - b. Sodding
 - c. Hydro-seeding
 - d. Plugging
- B. Related Sections:
- a. Section 02200 – Earthwork
 - b. Section 329100 – Planting Preparation
 - c. Section 311300 – Tree Protection and Root Pruning

- d. Section 329300 – Exterior Plants
- e. Section 01500 – Erosion and Sediment Control and Pollution Prevention
- C. In addition to the specifications contained herein, Work shall be performed in accordance with the:
 - a. Drawings and general provisions of the contract, including general and supplementary conditions.
 - b. Arlington County Department of Parks & Recreation (DPR) Design Standards as shown on the plans and available online at:

<http://parks.arlingtonva.us/design-standards/>

1.02 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of planting soil.
- B. Imported Topsoil: Soil obtained off-site that meets the specifications herein for topsoil and is suitable for use in planting soil/backfill soil mixture when existing soil quantities are insufficient. Refer to Section 329100 "Planting Preparation."
- C. Planting Soil/Backfill Soil Mixture: Existing soil modified as specified to be suitable for planting. Refer to Section 329100 "Planting Preparation."
- D. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill, before placing planting soil.

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SEEDING AND SODDING

- E. ISA: International Society of Arboriculture
- F. CBAY: Chesapeake Bay, typically referring to CBAY watershed.
- G. Urban Forester/County Urban Forester: Refers to the Arlington County Urban Forester
- H. Landscape Architect: Refers to an Arlington County Landscape Architect or their designee.

1.03 SUBMITTALS

- B. Samples of all materials shall be submitted to the Project Officer for approval with confirmation by the County Landscape Architect prior to delivery to site.
- C. Contractor shall submit qualifications per section 1.04 "Quality Assurance" to Project Officer for approval.

C. Samples:

- a. Seed Mix: Certification of grass seed including the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and the date of packaging.
- b. Sod: Sod grower's name, together with substantiating information as to field location from which sod is to be cut and species, percent purity and mixture of grass sod to be applied. Samples or photos of sod mix may be requested in lieu of inspection.
- c. Special Seed Mixes: Contractor shall submit product data per section 2.03.

1.04 QUALITY ASSURANCE

A. Contractor qualifications:

- a. Evidence of completion of at least three (3) projects of similar nature and scope to this project completed within the last five (5) years that have resulted in successful turf and meadow establishment
- b. Contractor shall be a member in good standing of either the Professional Land care Network or the American Nursery and Landscape Association.
- c. Experience: Three to Five years' experience in turf installation.

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- B. Contractor shall maintain an experienced full-time supervisor on Project site when work is in progress.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All materials shall conform to those stipulated below, unless otherwise approved in writing by the Project Officer with confirmation by the Landscape Architect.
- B. Specified materials to be applied in amounts and methods herein stipulated.
- C. Delivery tickets indicating date, weight, product data including all analyses for purity and other information as required herein, and vendor's name, to be submitted to Project Officer for approval.

2.02 SEED

- A. Grass seed shall be fresh, clean, dry new crop seed complying with purity and germination requirements stipulated herein. All cultivars must be on the current "Virginia Turfgrass Variety Recommendations" or in the top 25 for transitional zone sites-overall of the latest National Turfgrass Evaluation Program (NTEP) as approved by Project Officer with confirmation by the Landscape Architect. The Turf-type Tall Fescue component shall be

comprised of a minimum of two cultivars with each cultivar comprising neither less than 30 percent nor more than 70 percent of the blend. The use of K-31 Tall Fescue or Common Kentucky Bluegrass in the mix is prohibited. The mix shall have 2.5 percent maximum inert matter, 0.5 percent maximum crop seed, and 0.1 percent maximum weed seed and 0.0 percent noxious weed. The mix shall comply with the current Virginia Seed Law and Virginia Seed Regulations and approximate the following:

<u>Kind of Seed</u>	<u>% by Weight</u>	<u>% Purity</u>	<u>% Germination</u>
Turf-type Tall Fescue	80	97	85
Bluegrass	10	97	80
Perennial Ryegrass	10	97	90

- B. Substitution of seed type or percent only on approval of Project Officer in coordination with Landscape Architect. Seed to be free of noxious weed seed.

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SEEDING AND SODDING

2.03 SOD

Cultivated Grass Sod shall be certified and obtained from State Certified nurseries and have been grown on natural native mineral soils comparable to those afforded at the job site. Sod containing netting is not acceptable. Sod grower's information and sod information to be submitted for approval by Project Officer per section 1.03 "Submittals." Failure to obtain advance approval will constitute grounds for rejection of all sod delivered to the site. Invoices for all sod to clearly state point of origin and have attached to them a facsimile of the Grower's Nursery Certificate issued by the U.S. Department of Agriculture or Certified Delivery Ticket per truckload. All grass sod shall meet the following basic requirements.

- a. Sod shall be free of disease and soil borne insects.
- b. Sod shall be free of clover, broadleaf weeds and noxious weeds. Sod considered free of such weeds if less than 2 such plants are found per 100 square feet of area.
- c. Sod shall be of uniform color and density and contain:

Kind of Seed	% by Weight
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Turf Type Tall Fescue 90

Kentucky Bluegrass 10

- d. All cultivars must be on the current approved list of the Virginia Turfgrass Variety Recommendations and the sod shall be certified by the Virginia Sod Certification Program. Provide appropriate certifications at the time of installation.
- e. Sod sample shall be submitted to and approved by Project Officer in coordination with the Landscape Architect before cutting. Sod placed on the job shall conform to the approved sample or shall be removed and replaced at the Contractor's expense.
- f. Sod shall have been mowed prior to stripping and shall have been maintained for a minimum of three months.
- g. Sod shall be relatively free of thatch. Thatch build up that significantly detracts from the appearance of the sod may be sufficient cause for rejection.

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SEEDING AND SODDING

- h. Sod shall be machine stripped at a uniform soil thickness of approximately ¾-inch. Measurement for thickness to exclude tip growth and thatch.
- i. Individual pieces of sod shall be cut to supplier's standard width and length. Maximum allowable deviation from standard widths and lengths shall be 5%. Broken pads, torn or uneven ends shall not be permitted.
- j. Root development shall be such that standard size pieces will support their own weight and retain their size and shape when suspended vertically from a firm grasp on uppermost 10% of the area.
- k. Under moderate moisture conditions, weight shall not exceed 7 pounds per square foot. Minimum weight shall not be less than 4 lbs. per square foot.

2.04 SPECIALTY SEED (WILFLOWERS, BIORETENTION, and/or REFORESTATION)

- A. When specialty seed is explicitly specified in approved plans, and unless otherwise indicated, the specialty seed mix shall be as follows:
 - a. Virginia Northern Piedmont Riparian Mix variation. Fresh, clean and dry new seed, of mixed species as follows:

- i. 22% River Oats, PA/VA Ecotype (*Chasmanthium latifolium*)
- ii. 15% Indiangrass, PA Ecotype (*Sorghastrum nutans*)
- iii. 15% Virginia Wildrye, PA Ecotype (*Elymus virginicus*)
- iv. 10% Beaked Panicgrass, VA Ecotype (*Panicum anceps*)
- v. 10% Little Bluestem, NC Ecotype (*Schizachyrium scoparium*)
- vi. 10% Deertongue, 'Tioga' (*Panicum clandestinum*)
- vii. 10% Autumn Bentgrass, PA ecotype (*Agrostis perennans*)
- viii. 8% *Chamaecrista fasciculata*, (Partridge pea)

- b. Seed carrier: Inert material, sharp clean sand mixed with seed at a ratio of not less than two parts seed carrier to one-part seed.

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- B. Contractor shall supply the germination test results and the percent purity of the seeds upon delivery to the site to the Project Officer. All seed shall be cleaned, processed, analyzed for purity, stored, and germination tested before being used. Every seed variety contains different germination rates and requirements.
- C. Execution:
 - a. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
 - b. Brush seed into top 1/8 inch of soil, roll lightly and water with light spray.
 - c. Protect seeded areas by applying compost mulch within 24 hours after completing seeding operations. Soak areas, scatter mulch uniformly to a thickness of 3/16 inch and roll surface smooth.
 - d. Water newly planted areas and keep moist until established.

2.05 SOILS & SOIL AMENDMENTS

- A. Refer to Section 329100 "Plant Preparation" soils and soil amendment specifications.

2.06 MULCHES/ ORGANIC MATTER

- A. Refer to Section 329100 "Plant Preparation" for mulch specifications.

2.07 SOIL STABILIZATION/EROSION CONTROL FABRIC

- A. Refer to Section 329100 "Plant Preparation" for specifications.

A. PART 3 - EXECUTION

3.01 PREPARATION

- A. Refer to Section 329100 "Plant Preparation" for specifications.

3.02 SEEDING - GRASS

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SEEDING AND SODDING

- A. All areas within the project limits that are not shown for paving, sodding, or special treatment shall be seeded with the specified seed mix.
- B. Seeding shall take place between August 15th and October 15th or between March 15th to May 15th. Approval from Project Officer/Landscape Architect will be required before seeding is to begin.
- C. Use 4" of prepared topsoil as base for areas to be seeded.
- D. No seeding shall be done during windy weather (winds over 5 mph) or when ground is wet or otherwise non-tillable. No seed shall be done on frozen ground or when the temperature is 32 or lower.
- E. Seed shall be uniformly distributed by hydro-seeding methods as specified:
 - a. Slurry
 - i. Seed as specified at a rate of 350 lbs./acre.
 - ii. Mulch: virgin wood fiber type applied at a rate of 1200 lbs./acre.
 - iii. Tackifier: Guar type or approved equal applied at a rate of 40 lbs./acre.
 - iv. Fertilizer: 19-19-19 granular applied at a rate of 500 lbs./acre.
 - v. Lime: Flowable liquid lime at a rate of 5 gallons per acre.
 - vi. Dye: Slurry must be green with dye added if not included with the mulch.
 - vii. Application rate: 3000 gallons per acre. Agitation must be maintained throughout mixing and application.
 - viii. Slurry shall be applied within 8 hours of the start of mixing.

- ix. In lieu of hydro-seeding, seed may be drilled or an alternate method may be used. If an alternate method is used, seeding will have to be run in two directions. The second direction being at right angles to the first direction. Requests for using alternate methods shall be approved by the Project Officer prior to application of seed.
- x. Sow seed at the rate of 5 to 8 lb/1000 sq. ft.
- xi. Rake seed lightly into top 1/8 inch of topsoil, roll lightly, and water with fine spray.
- xii. Protect seeded areas with slopes not exceeding 6:1 by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/acre to form a continuous blanket 1-1/2 inches in loose depth over seeded areas. Spread by hand, blower, or other suitable equipment.

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SEEDING AND SODDING

- xiii. Areas indicated on plan or exceeding 6:1 slope shall be protected with erosion control fabric, jute mat, or similar slope protection, installed according to manufacturer's written instruction, and/or as approved by the Project Officer.

3.03

SODDING

- A. All sod shall be transplanted within 24 hours from the time it is harvested unless stacked at its destination in a manner satisfactory to the Project Officer. Do not lay down if dormant or if the ground is frozen or muddy.
- B. All sod in stacks shall be kept moist and protected from exposure to air and sun and from freezing. Any sod permitted to dry out may be rejected whenever, in judgment of Project Officer, its survival after placing is doubtful. No payment shall be made for rejected sod. In any event, no more than forty-eight hours shall lapse between cutting and planting of sod is permitted.
- C. Before placing or depositing sod upon any surfaces, all shaping and redressing of such surfaces as described under Seeding Soil Preparation shall be completed. The bed area for sod shall be dug out so that when the sod is installed the adjacent soil will be flush with the top of the sod root mat. Areas shall be watered lightly before the placing of sod; sod shall not be placed on dry surfaces. Completed areas to be sodded shall be a smooth, uniform, well-tilled surface true to line and cross section. Any raking required shall be done immediately prior to placement of the sod at no additional cost to Owner.

- D. No sod shall be placed at any time temperature is below 32 degrees Fahrenheit. No frozen sod shall be used and no sod shall be placed upon frozen, powder dry or excessively wet soil.
- E. Use 4" of prepared topsoil as base for areas to be sodded.
- F. Sod shall be lifted from trucks or storage piles by hand and placed with closed joints and no overlapping. All cracks, seams and voids shall be closed with small pieces of sod. After laying sod shall be sprinkled thoroughly and then tamped. "Tamping" consists of firmly closing seams between strips by use of hand tampers or approved rollers. All sod shall be thoroughly rolled after closing all seams. Correct any slipping of sod.

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SEEDING AND SODDING

- G. Adequate water and watering equipment must be on hand before sodding begins and sod shall be kept moist until root system adheres to original seed bed and becomes established and accepted by Project Officer.
- H. Sod shall be laid with long edges parallel to contours, except in swales or ditches where it shall be placed perpendicular to the flow line. Only sod placed in swales or ditches shall be staked using 2 stakes per roll of sod. Stakes shall be wood wedges ½" x 1" x 12". Successive strips to be neatly matched and all joints staggered. Sod will be laid in all areas indicated on landscape plans.

3.04 REFORESTATION

- A. Prepare planting area per the specifications.
- B. Reforestation process:
 - a. Reforestation seed mix shall be applied prior to installation of Erosion Control Fabric. Rake seed lightly into the top 1/8 inch of soil, roll lightly and water with fine spray.
 - i. Do not use wet seed or seed that is moldy or otherwise damaged.
 - ii. Do not seed against existing trees or vegetation to remain within reforested area limits.
 - iii. Top dress seed by applying composted mulch within 24 hours after seeding operation. Soak areas, scatter mulch uniformly to a thickness of 1/2 inch and roll surface smooth.
 - b. Install erosion control fabric from top of slope, overlapping joints by 12 inches, working downward, and as recommended by material manufacturer for site conditions. Fasten as recommended by material manufacturer.

- c. Moisten prepared planting area before planting if surface is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- d. Plant shrubs, trees and perennials through erosion control fabric by carefully separating fabric layers to allow space for planting.

C. Remove non-degradable erosion-control measures after grass establishment period.

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SEEDING AND SODDING

3.05 PROTECTION

- A. Install post and rope barriers around seeded areas. Tie cloth or ribbon to rope at 10' intervals.
- B. Install "KEEP OFF LAWN" signs at appropriate locations.
- C. Remove non-biodegradable erosion control measures after plant establishment period.

3.06 MAINTENANCE

- A. Maintain surfaces and supply additional topsoil where necessary, including areas affected by erosion.
- B. Water to ensure uniform seed germination and to keep surface of soil damp:
 - a. Each watering shall consist of 1 gallon per 3 sq. yd. of seed or sod
 - b. Apply water slowly so that surface of soil will not puddle and crust
- C. Cut lawn areas when grass reached height of 3". Maintain minimum height of 2". Do not cut more than 1/3 of blade at any one mowing.
- D. After first mowing of lawn, water grass sufficiently to moisten soil from 3" to 5" deep.
- E. Reseed damaged grass areas showing root growth failure, deterioration, bare or thin spots and erosion.

3.07 GUARANTEE

- A. The Contractor shall be responsible for maintaining all sodded and seeded areas in a healthy, vigorous condition in accordance with Section 3.05 "Maintenance" at his/her own expense until all contracted work is completed and accepted by Project Officer with confirmation by the Landscape Architect or Urban Forester.
- B. The Contractor shall, at his own expense, replace any seed or sod which has died or been damaged during the establishment period.
- C. Cost of seed and sod will be withheld from final payment until final approval is given by Project Officer.

3.08 ACCEPTANCE

- A. Seeded areas of turf will be accepted when an even, healthy, close and uniform stand of turf, 3" tall, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10sq. ft. and bare spots not exceeding 4 by 4 inches is properly established. Bare spots in excess of 4" shall be re-seeded at a rate per section 3.02 of this specification.
- B. Speciality seeded areas will be accepted upon application. A three year warranty applies to all specialty seeding. Re-seeding will be required in the second growing season where the perennial plant density is observed to be less than one plant per square foot.
- C. Sodded areas shall be accepted provided all requirements, including maintenance, have been complied with and sod is well established in a healthy, vigorous growing condition. Reestablish lawns that do not comply with requirements and continue maintenance until lawns are satisfactory.
- D. Upon completion, all debris and waste material resulting from seeding/sodding/mulching activities shall be removed from the project area and legally disposed of. Any damaged areas shall be restored to their original condition.
- E. Upon acceptance by Project Officer at Final Completion, Arlington County shall assume all lawn maintenance responsibilities.

B. PART 4 - MEASUREMENT AND PAYMENT

- 4.01** The measurement of SEEDING to be paid for shall be per SQUARE YARD of seeded grass in accordance with the approved plans and specifications.
- 4.02** The unit price for SEEDING shall include the cost of furnishing all labor, materials, equipment and incidental expenses necessary to complete the work, including but not limited to erosion control, topsoil, mulch, protection and maintenance, all in accordance with the approved plans and specifications.
- 4.03** The measurement of SPECIALTY SEEDING to be paid for shall be per SQUARE YARD of reforestation seed mix in accordance with the approved plans and specifications.
- 4.04** The unit price for SPECIALTY SEEDING shall include the cost of furnishing all labor, materials, equipment and incidental expenses necessary to complete the work, including but not limited to erosion control, topsoil, mulch, protection and maintenance, all in accordance with the approved plans and specifications.
- 4.05** The measurement of SOD to be paid for shall be per SQUARE YARD of sod installed in accordance with the approved plans and specifications.

VI. INSURANCE REQUIREMENTS

Review this section carefully with your insurance agent or broker prior to submitting a bid or proposal. See the Insurance Checklist (part of the Bid or Proposal Forms) for specific coverages applicable to this Contract. The term "Contract," as used in this section, shall mean the fully executed Agreement covering the Work entered into between the County and the Contractor.

1. General

- 1.1 The Contractor shall provide insurance as specified in the Insurance Checklist found on the last page of the bid or proposal form.
- 1.2 The Contract with the Contractor will not be executed by the County until the Contractor has obtained, at its own expense, all of the insurance called for hereunder and such insurance has been approved by the County; additionally, the Contractor shall not allow any sub-contractor to start Work on any subcontract until all insurance required of the sub-contractor has been so obtained and approved by the Contractor. The Contractor shall submit to the County Purchasing Agent copies of all required endorsements and documentation of coverage consistent with the requirements herein or, alternately, at the County's request, certified copies of the required insurance policies in compliance with the insurance requirements. All endorsements and documentation shall state this Contract's number and title.
- 1.3 The Contractor shall require all sub-contractors to maintain during the term of this Agreement, Commercial General Liability insurance, Business Automobile Liability insurance, and Workers' Compensation, Employers' Liability insurance, or any other insurance required by the Contract in the same manner and form as specified for the Contractor. The Contractor shall furnish sub-contractor evidence of insurance and copies of endorsements to the County Purchasing Agent immediately upon request by the County and/or prior to the sub-contractor's performance of Work related to this Contract.
- 1.4 If there is a material change or reduction in coverage, nonrenewal of any insurance coverage or cancellation of any insurance coverage required by this contract, the Contractor shall notify the Purchasing Agent immediately. It is the Contractor's responsibility to notify the County upon receipt of a notice indicating that the policy will not be renewed or will be materially changed. Any policy on which the Contractor has received notification from an insurer that the policy has or will be cancelled or materially changed or reduced must be immediately replaced with another policy consistent with the terms of this Contract and in such a manner that there is no lapse in coverage, and the County immediately notified of the replacement. Not having the required insurance throughout the Contract is considered a material breach of this Contract and grounds for termination. The Contractor shall also obtain an endorsement providing to the County thirty (30) days advance notice of cancellation or nonrenewal (ten days for nonpayment of premium. A copy of that endorsement shall be provided to the County Purchasing Agent prior to the execution of this Contract or any Contract extension thereafter.

- 1.5 No acceptance and/or approval of any insurance by the County shall be construed as relieving or excusing the Contractor, any surety, or any bond, from any liability or obligation imposed under this Agreement.
- 1.6 Arlington County, and its officers, elected and appointed officials, employees, and agents are to be named as additional insureds under all coverages except Workers' Compensation, Professional Liability, and Automobile Liability, and the endorsement must clearly identify the County as an additional insured permitted to enjoy all the benefits under the applicable policy of insurance. The certified policy, if requested, must so state coverage afforded under this paragraph shall be primary as respects the County, its officers, elected and appointed officials, agents and employees. The following definition of the term "County" applies to all policies issued under the Contract and to all applicable endorsements:
- "The County Board of Arlington County and any affiliated or subsidiary Board, Authority, Committee, or Independent Agency (including those newly constituted), provided that such affiliated or subsidiary Board, Authority, Committee, or Independent Agency is either a Body Politic created by the County Board of Arlington County, Virginia, or one in which controlling interest is vested in Arlington County; and Arlington County Constitutional Officers."
- 1.7 The Contractor shall be responsible for the Work performed under the Contract Documents and every part thereof, and for all materials, tools, equipment, appliances, and property of any description used in connection with the Work. The Contractor assumes all risks for direct and indirect damage or injury to the property or persons used or employed on or in connection with the Work contracted for, and of all damage or injury to any person or property wherever located, resulting from any action, omission, commission or operation under the Contract, or in connection in any way whatsoever with the contracted Work.
- 1.8 The insurance coverage required shall remain in force throughout the Contract or as otherwise stated in the Contract Documents or these Insurance Requirements. If the Contractor fails to provide acceptable evidence of current insurance within seven (7) days of written notice at any time during the Contract, the County shall have the absolute right to terminate the Contract without any further obligation to the Contractor.
- 1.9 Contractual and other liability insurance provided under this Contract shall not contain a supervision, inspection or engineering services exclusion that would preclude the County from supervising or inspecting the Work as to the end result. The Contractor shall assume all on-the-job responsibilities as to the control of persons directly employed by it and of the sub-contractors and any persons employed by the sub-contractor and/or carriers delivering and receiving materials from the Project.
- 1.10 If any policy contains a warranty stating that coverage is null and void (or words to that effect) if the Contractor does not comply with the most stringent regulations governing the Work, such policy

shall be modified so that coverage shall be afforded in all cases except for the Contractor's willful or intentional noncompliance with applicable government regulations.

- 1.11 All policies shall include the following language: "The insolvency or bankruptcy of the insured or of the insured's estate will not relieve the insurance company of its obligations under this policy."
- 1.12 All policy forms must "Pay on behalf of" rather than "Indemnify" the insured.
- 1.13 Nothing contained in these Insurance Requirements or the Contract Documents shall be construed as creating any contractual relationship between any sub-contractor and the County. The Contractor shall be as fully responsible to the County for the acts and omissions of its sub-contractors and of persons employed by them as it is for acts and omissions of persons directly employed by it.
- 1.14 Precaution shall be exercised by the Contractor at all times for the protection of persons, (including employees) and property. All existing structures, utilities, roads, services, trees and shrubbery shall be protected against damage or interruption of service at all times by the Contractor and its sub-contractors during the term of the Contract, and the Contractor shall be held responsible for any damage to property occurring by reason of its Work under the Contract whether identified on the Contract Documents or not.
- 1.15 For any claims related to this Work, The Contractor's insurance shall be deemed primary and non-contributory to all other applicable coverage and in particular with respect to Arlington County, its representatives, officials, employees, and agents. Any insurance or self-insurance maintained by Arlington County shall be excess and noncontributory of the Contractor's insurance. The Contractor shall waive its right of subrogation for all insurance claims.
- 1.16 If the Contractor does not meet the insurance requirements set forth by the Contract Documents, alternate insurance coverage or self-insurance, satisfactory to the Purchasing Agent, may be considered. Written requests for consideration of alternate coverages including the Contractor's most recent actuarial report and a copy of its self-insurance resolution to determine the adequacy of the insurance funding must be received by the County Purchasing Agent at least ten (10) Working days prior to the date set for receipt of bids or proposals. If the County denies the request for alternate coverages, the specified coverages will be required to be submitted. If the County permits alternate coverage, an Addendum to the Insurance Requirements will be prepared and distributed prior to the time and date set for receipt of bids or proposals.
- 1.17 All required insurance coverages must be acquired from insurers authorized to do business in the Commonwealth of Virginia and acceptable to the County. The insurers must also have a policy holders with a rating of "A-VII" in the latest edition of the A.M. Best Co.'s Insurance Reports, unless the County grants specific approval for an exception, in the same manner as described in 1.16 above.
- 1.18 The Contractor shall be responsible for payment of any deductibles applicable to the coverages.

1.19 The Contractor must disclose the amount of any deductible or self-insurance component applicable to the General Liability, Automobile Liability, Professional Liability, Intellectual Property or any other policies, if any. The County reserves the right to request additional information to determine if the Contractor has the financial capacity to meet its obligations under a deductible. Thereafter, at its option, the County may require a lower deductible, funds equal to the deductible be placed in escrow, a certificate of self-insurance, collateral, or other mechanism in the amount of the deductible to ensure additional protection for the County.

2. Contractor's Insurance:

2.1 The Contractor shall purchase the following insurance coverages, including the terms, provisions and limits shown in the Insurance Checklist.

2.1.1 Commercial General Liability - Such Commercial General Liability policy shall include any or all of the following as indicated on the Checklist:

- i. General aggregate limit is to apply per project;
- ii. Premises/Operations;
- iii. Actions of Independent Contractors;
- iv. Products/Completed Operations to be maintained for five (5) years after completion of the Work;
- v. Contractual Liability, including protection for the Contractor from claims arising out of liability assumed under this Contract;
- vi. Personal Injury Liability including, including but not limited to, coverage for offenses related to employment and copyright infringement;
- vii. Explosion, Collapse, or Underground (XCU) hazards.

2.1.2 Business Automobile Liability, including coverage for any owned, hired, or non-owned motor vehicles, Uninsured Motorists coverage, and automobile contractual liability.

2.1.3 Workers' Compensation - statutory benefits as required by Virginia law or the U.S. Longshoremen's and Harbor Workers' Compensation Act, or other laws as required by labor union agreements, including standard Other States coverage; Employers' Liability coverage. The policy shall not contain any provision or definition which would serve to eliminate third party action over claims, including exclusion for bodily injury to an employee of the insured, employees of the premises owner, or employees of the general contractor to which the insured is subcontracted; or employees of the insured's sub-contractor.

2.1.4 General Environmental Remediation Projects

In addition to the Insurance Requirements specified in the general provision or elsewhere in the Contract Documents, the Contractor shall not commence Work under this Contract until all insurance as required hereafter has been obtained, and certified copies, naming the County as an additional insured, of such insurance have been submitted and accepted by the Purchasing Agent.

- i. An environmental remediation contractor or sub-contractor shall be responsible for purchasing and maintaining Business Automobile Liability insurance and Workers' Compensation insurance as described in 2.1.2 and 2.1.3.
- ii. Acceptance by Arlington County of insurance submitted by the Contractor does not relieve or decrease in any manner the liability of the Contractor for performance of environmental remediation Work under the Contract.
- iii. The Contractor is responsible for any losses, claims, and costs of any kind, which exceed the Contractor's limits of liability, or which may be outside the coverage scope of the policies. The limits and coverage requirements may be revised at the option of the Arlington County Risk Manager. The requirements outlined shall in no way be construed to limit or eliminate the liability of the Contractor, which arises from performance of Work under the Contract.

2.1.5 Contractors Pollution Liability (CPL) Policy

- i. Minimum liability limits required shall be \$1,000,000 Per Loss and \$2,000,000 Total All Losses, including, but not limited to, property damage, bodily injury, loss of use, and clean-up costs.
- ii. Limits must be dedicated to Work performed under this Contract only, unless prior approval by the Arlington County Risk Manager has been obtained. The policy of insurance shall contain or be endorsed to include the following:
 - a. Pollution coverage as respects asbestos, lead, VOC and PCB's.
 - b. "Covered Operations" designated by the CPL policy must specifically include all Work performed under this contract. (This would include and not be limited to excavation, off-site incineration of soils, demolition, asbestos abatement, drum removal and disposal, in-situ vapor extraction, etc.) and exclusions or limitations affecting Work performed under this contract must be deleted. (i.e., lead, asbestos, pollution, testing, underground storage tanks, radioactive matter, etc.)
 - c. Contractor must comply with all applicable DOT and EPA requirements.
 - d. Premises/Operations.
 - e. Broad form property damage.
 - f. Products/Completed Operations coverage for a minimum of five (5) years after Final Payment.

- g. Contractual liability coverage in accordance with ISO policy form CG 00 01 11 85. Modifications to the standard provision will not be acceptable if they serve to reduce coverage.
- h. Cross liability/severability of interest.
- i. The scope of Work and all related activities under this Contract shall be scheduled as "Covered Operations" under this policy.
- j. Coverage is included on behalf of the insured for covered claims arising out of the actions of independent contractors. If insured is utilizing sub-contractors, the CPL policy must use "By or On behalf of" language with regards to coverage.
- k. Loading and unloading exclusions must be amended so as to include coverage for mobile equipment and automobiles.

2.1.6 Asbestos and Lead Based Paint Abatement Projects

- i. Minimum Liability Limits shall be \$1,000,000 Per Occurrence and \$2,000,000 Aggregate. Limits must be dedicated to Work performed under this Contract only, unless otherwise approved by the Arlington County Risk Manager. The policy shall be written with a minimum annual aggregate combined single limit for Bodily Injury and Property Damage as shown on the Insurance Checklist. This limit can be inclusive of defense costs.
- ii. The policy of insurance shall contain or be endorsed to include the following:
 - a. Coverage for Asbestos/Lead-Based Paint Abatement operations as described in the contract. Specific lead endorsement evidencing this project must be provided, if applicable.
 - b. Pollution coverage as respects Asbestos/Lead-Based Paint for all phases of the abatement process.
 - c. Transportation coverage for the hauling of ACM/Lead-Based Paint from the project site to the final disposal location, as evidenced by the contractor or applicable waste hauler. Contractor must comply with all applicable D.O.T. regulations.
 - d. Premises/Operations.
 - d. Broad Form Property Damage.
 - f. Products/Completed Operations coverage for a minimum of five (5) years after project completion.
 - g. Contractual Liability coverage in accordance with ISO policy form CG 00 01 11 85. Modifications to the standard provision will not be acceptable if they serve to reduce coverage.
 - h. Cross Liability. Any "Insured vs. Insured" – type language must be deleted or amended to "Named Insured vs. Named Insured."
 - i. The policy shall not exclude Asbestos/Lead Based Paint bodily injury to employees of Arlington County so long as their designated job duties do

not require them to be in the regulated asbestos/lead based paint abatement area.

- j. If the policy or any endorsement contains a provision which limits or eliminates bodily injury or property damage coverage based on final air fiber clearance levels, the policy shall be modified so that it is consistent with the clearing level (FCC) and the appropriate analytical testing protocol contained in the project specifications.
- k. Personal Injury.
- l. Independent Contractors.
- m. Hostile fire coverage is to be provided.

2.1.7 Environmental Impairment Liability, including coverage of insureds' on-site clean up, with the following minimum limits of liability:

Bodily Injury and Property	2,000,000 each occurrence
Damage Liability	4,000,000 annual aggregate

The County Board of Arlington County, Virginia, is to be named in Additional Name Insured or a Broad Form Contractual Endorsement may be added to the policy as respects any liability that may arise out of or result from the handling of Work on this Project including specifically but without limitation thereto, the indemnity provisions in the Agreement. Such policies will be endorsed to provide that they are primary to an insurance carried by the County Board of Arlington County, Virginia.

2.1.8 Should any of the Work hereunder involve the cleanup, remediation and/or removal of bio-solids, bio-hazards waste, or any hazardous or toxic materials, trash, debris, refuse, or waste, the Contractor shall provide, or shall require its sub-contractor performing the Work to provide, the following coverage in addition to the above requirements:

- a) Environmental Liability and Cleanup Coverage – with limits of not less than \$2,000,000 per occurrence.
- b) Business Automobile Liability – for transportation or regulated and/or hazardous waste, products, or materials with limits of not less than \$1,000,000, per occurrence. Said coverage shall include County as an additional insured and shall include both the MCS-90 and CA 9948 (or equivalent) endorsements, which shall be specifically referenced on the certificate of insurance.

- 2.2 The Contractor shall take reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to, its employees on the job, and others. The Contractor shall comply with all applicable provisions of federal, state and municipal safety laws, insurance requirement's, standard industry practices, the requirements of the operations and this contract, the Contractor, directly through its sub-contractors, shall effect and properly maintain at all times, as required by the conditions and progress of the Work, necessary safeguards for safety and protection of the public, including securing areas, posting danger signs, placarding, labeling or posting other forms of warning against hazards.**

3. Commercial General or other Liability Insurance - Claims-made Basis:

- 3.1 If Commercial General or other liability insurance purchased by the Contractor has been issued on a claims-made basis, the Contractor must comply with the following additional conditions. The limits of liability and the extensions to be included as described in the Insurance Checklist remain the same. The Contractor must either:
- i. Agree to provide insurance, copies of the endorsement and certified documentation evidencing the above coverages and naming the County as an additional insured for a period of five (5) years after final payment under the Contract. Such documentation shall evidence a retroactive date, no later than the beginning of the Contractors or sub-contractors' Work under this Contract, or
 - ii. Purchase an extended (minimum five [5] years) reporting period endorsement for the policy or policies in force during the term of this Contract and evidence the purchase of this extended reporting period endorsement by means of a copy of the endorsement itself. The extended reporting period will begin upon final payment under the Contract.
4. Builder's Risk Insurance
- 4.1 The Contractor shall purchase and maintain builders risk insurance with a limit equal to the initial Contract Amount and any amendments to the Contract which affect the project cost on a replacement cost basis. Builder's risk insurance shall be maintained until Final Payment under the Contract has been made or until no person or entity other than the County has an insurable interest in the covered property, whichever is earlier. The builders risk insurance shall include the County as defined in Section 1.6, Contractor, sub-contractors and sub-sub-contractors as named insureds.
- 4.2 Insurance shall be on an all-risks policy form including the perils of fire, theft, vandalism, malicious mischief, lightning, wind, force majeure, collapse, and earthquake. Coverage is to apply for demolition occasioned by enforcement of any applicable legal requirements, and Architect's fees. Coverage for the peril of flood shall not be required unless otherwise required in the Contract Documents.
- 4.3 Unless otherwise provided in the Contract Documents, the Builders Risk insurance shall also cover materials to be incorporated into the project which are stored off the site.
- 4.4 The Contractor shall purchase and maintain Boiler and Machinery insurance, if required by the contract documents or by law, with a limit satisfactory to the County. The Boiler and Machinery insurance shall cover objects during installation and until Final Acceptance by the County. The County shall be included as a named insured.
- 4.5 Any loss under Builder's Risk insurance shall be payable to the County as fiduciary for the insureds, as their interests may appear, subject to any mortgagee clause. The Contractor shall pay sub-contractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require sub-contractors to make payments to their sub-sub-contractors in similar manner. The County, as fiduciary, shall have the right to adjust and settle a loss with insurers.
- 4.6 The insurance company providing the builders risk coverage shall grant permission for the County to partially occupy or use the premises under construction prior to final acceptance without removing or affecting the coverage.