

TABLE OF CONTENTS

PART 2 – TECHNICAL INFORMATION & REQUIREMENTS

1.0	DESIGN-BUILDER’S SCOPE OF WORK	3
1.1	Project Description	3
1.2	Anticipated Scope of Work	3
1.3	Anticipated Design Services	4
1.4	Anticipated Environmental Services	4
1.5	Anticipated Right of Way and Utilities	5
1.6	Anticipated Construction Services	5
2.0	PROJECT TECHNICAL INFORMATION & REQUIREMENTS.....	5
2.1	Standards and Reference Documents	6
2.1.1	Standards, Specifications, and Reference Documents	6
2.1.2	RFP Information Package	9
2.2	Environmental	12
2.2.1	Environmental Document	12
2.2.2	Cultural Resources	13
2.2.3	Section 4(f) Resources	14
2.2.4	Water Quality Permits	15
2.2.5	Threatened and Endangered Species	17
2.2.6	Hazardous Materials	18
2.2.7	Environmental Compliance	19
2.3	Roadway/ Trail	20
2.4	Survey	21
2.5	Bridges	22
2.5.1	Bridge over Route 895	22
2.5.2	All Other Bridges	22
2.5.3	Shop Drawings	23
2.5.4	Safety and Acceptance Inspection for the Proposed Bridges	23
2.6	Geotechnical Work	24
2.6.1	Minimum Pavement Sections	26
2.6.2	Alternative Performance Specifications	27
2.6.3	Geotechnical Requirements	27
2.7	Hydraulics	29
2.7.1	General	29
2.7.2	Hydrologic and Hydraulic Analysis (H&HA)	29
2.7.3	Drainage	30
2.7.4	Post Construction Stormwater Management Plan and Erosion and Sediment Control Plan	31
2.7.5	Post Construction Stormwater Management Facilities	33
2.7.6	Other Drainage Requirements	33
2.8	Traffic Control Devices	33
2.8.1	Traffic Signals	33
2.8.2	Signs	37
2.8.3	Pavement Markings / Markers	37
2.8.4	Guardrail	37
2.9	Transportation Management Plan (TMP)	37
2.9.1	Temporary Traffic Control Plans	38
2.10	Right of Way	39
2.11	Utilities	44
2.12	Landscape Architecture	47

~~September 25, 2012~~ Addendum #1 – October 29, 2012

2.12.1 Safety Fencing	48
2.12.2 Trail Intersections with Roadways.....	48
2.13 Quality Assurance / Quality Control (QA/QC).....	48
2.13.1 Design Management.....	49
2.13.2 Construction Management	49
2.14 Plan Preparation	52
2.14.1 Geopak and MicroStation.....	52
2.14.2 Software License Requirements	52
2.14.3 Drafting Standards	53
2.14.4 Electronic Files.....	53
2.14.5 Plan Submittals	53
2.14.6 Right of Way Plans	55
2.14.7 Construction Plans	55
2.14.8 Released for Construction Plans	55
2.14.9 Record (As-Built) Plans	56
2.15 Public Involvement/Relations.....	56
2.16 Monthly Progress Meetings.....	57
2.17 Virginia Occupational Safety and Health Standards.....	57

PART 2

TECHNICAL INFORMATION & REQUIREMENTS

1.0 DESIGN-BUILDER'S SCOPE OF WORK

1.1 Project Description

The Project is located in Henrico County, Virginia, and includes the design and construction of the Virginia Capital Trail from the Almond Creek Bridge to approximately 0.10 miles east of Wood Mill Drive and from approximately 0.16 miles west of Four Mile Creek to approximately 0.14 miles west of Long Bridge Road. There will be a gap in the trail from approximately 0.10 miles east of Wood Mill Drive to approximately 0.16 miles west of Four Mile Creek. This gap will be completed with a separate project. The Trail will be located parallel to Route 5 on the south side from the Almond Creek Bridge to Midview Road, parallel to Route 5 on the north side from Midview Road to approximately 0.10 miles east of Wood Mill Drive, parallel to Route 5 on the north side from approximately 0.16 miles west of Four Mile Creek to approximately 0.18 miles west of Long Bridge Road, and parallel to Route 5 on the south side from approximately 0.18 miles west of Long Bridge Road to approximately 0.14 miles west of Long Bridge Road. There will be an at-grade crossing of Osborne Turnpike, located approximately 200' east of the intersection of Osborne Turnpike and Route 5. There will be an at-grade crossing of Route 5, located approximately 50' east of Midview Road. There will be an at-grade crossing of Route 5, located approximately 0.18 miles west of Long Bridge Road. The Trail will be a 10 foot wide strip of asphalt pavement throughout the project limits unless otherwise noted in the preliminary design plans included in the RFP Information Package. The total length for the Varina Phase of the Virginia Capital Trail is approximately 7.6 miles. Right of way acquisition and utility relocation activities will be the responsibility of the Design-Builder. It is noted that the description and length are approximate only and are based on the conceptual plans shown in the RFP Information Package. The final Project length may vary depending on the Design-Builder's final design and this fact shall be taken into account in the Offeror's Proposal.

A conceptual design has been developed and made available for public review via a Location and Design Public Hearing held on June 6, 2012. The location was approved by the Commonwealth Transportation Board in September 2012. The major design features of the Project were approved by the Chief Engineer on September 24, 2012. The conceptual design contained in the RFP Information Package reflects a basic line, grade, typical sections, major cross drainage pipes, and conceptual bridge plans. These elements are considered to be the basic Project configuration. The Design-Builder is responsible for final design in accordance with the Contract Documents.

1.2 Anticipated Scope of Work

The Project includes, among other things, but not limited to: (a) Design plans for right of way acquisition and construction that are compliant with current VDOT standards; (b) verification of the other documents supplied as part of the RFP Information Package, such as the Geotechnical

Engineering Data Report; (c) acquiring all environmental permits and approvals as required and fulfilling permit conditions; (d) compliance with the state and federal laws and regulations governing Threatened and Endangered Species; (e) right of way acquisition; (f) utility relocation; (g) construction of the Project; (h) quality assurance and quality control for design and construction; and (i) overall Project Management. Brief descriptions of this anticipated work are set forth below:

1.3 Anticipated Design Services

Design services shall include, but are not limited to: (a) completion of right of way plans and final construction plans; (b) survey, (c) design of drainage facilities, traffic control devices (e.g. signs, pavement markings), bridges, maintenance of traffic plans, erosion and sediment control measures, stormwater management facilities, utility relocation and landscaping; and (d) verification of the geotechnical investigation, borings and analysis, materials analysis, and pavement design. Design services shall also include coordination with representatives from VDOT.

A survey for the Project has been developed in English units and in MicroStation CAD platform in accordance with the current VDOT Survey Manual and is available in the RFP Information Package.

A preliminary geotechnical study for the Project has been developed to capture the geological conditions within the project limits and is included in the RFP Information Package. Any additional investigations and analysis that the Design-Builder may need for their particular design shall be included in the Offeror's scope of work. Any design and subsurface information provided by VDOT should not be considered complete and must be validated, augmented, and certified by the Design Manager as required to provide the final design.

The Design-Builder shall note that the required minimum pavement sections that were approved by VDOT are provided herein. The Design-Builder will be required to validate the minimum pavement sections for final design and construction and notify VDOT of its findings before the end of the Scope Validation Period. If the Design-Builder finds the sections to be inadequate, their notice shall include the proposed changes and the proposed price associated with those changes for approval by VDOT. The Design-Builder shall be responsible for final design and construction of the pavements for this Project in accordance with the Contract Documents. Reference shall be made to the Contract Documents, including the General Conditions, for provisions regarding required investigations and the identification, resolution and responsibility for differing site conditions.

1.4 Anticipated Environmental Services

The Design-Builder will implement all environmental commitments identified in the Categorical Exclusions and any subsequent re-evaluation; characterize, evaluate and address hazardous materials; address Threatened and Endangered species requirements; and obtain all necessary water quality permits and approvals as described in Part 2 Section 2.2 of this RFP.

The Design-Builder will be responsible for compliance with pre-construction and construction-related environmental commitments and permits conditions. The Design-Builder will assume all obligations and costs incurred by complying with the terms and conditions of the permits and certifications. Any fines associated with the environmental permit or regulatory violations will be the responsibility of the Design-Builder.

1.5 Anticipated Right of Way and Utilities

The Design-Builder's final design shall be contained within the right of way limits shown on the RFP preliminary design plans. If the Design-Builder proposes to exceed the right of way limits shown on the RFP preliminary design plans, then this shall be considered a deviation of the Contract Documents and shall be addressed as described in Part 2, Section 2. As discussed herein, the Design-Builder shall be responsible for any time and/or cost impacts and any NEPA document re-evaluation associated with Design-Builder's design changes that extends beyond the right of way limits reflected in the RFP Plans and approved by VDOT.

The Design-Builder's services shall include all work necessary to perform utility coordination, relocations, and/or adjustments as required by the Project. All costs for utility relocations, excluding betterments, shall be included in the Offeror's Price Proposal. Utility betterments shall not be included in the Offeror's Price Proposal but shall be reimbursed to the Design-Builder through agreement with the requesting utility owner. Betterments must be requested by and/or approved by the affected utility owner.

1.6 Anticipated Construction Services

Construction services are anticipated to include, but not be limited to: all necessary earthwork, paving, minor structures, temporary and permanent traffic control items, bridges, drainage, landscaping, incidental construction items, monumentation of right-of-way, erosion and sediment control and all other environmental requirements and commitments as described in Section 2 of Part 2 of this RFP. The Design-Builder shall also provide construction engineering inspection and management (to include quality assurance and quality control), and surveying. Quality assurance and quality control responsibilities include plant quality assurance inspection and testing, but excludes items listed under Section 2.13.2 of Part 2 of this RFP.

2.0 PROJECT TECHNICAL INFORMATION & REQUIREMENTS

The Design-Builder's final design shall meet or exceed all requirements included in the Contract Documents. If the Design-Builder proposes any deviation that results in a modification to the Contract Documents then the Value Engineering Proposals (VEP) process as described in Section 104.02 of Division I Amendments to the Standard Specifications (Part 5) shall be followed. This process shall be followed to include all deviations and modifications to the Contract Documents proposed even though they may not qualify as a VEP per Section 104.02 but requires VDOT approval.

2.1 Standards and Reference Documents

The design and construction work for the Project shall be performed in accordance with the applicable federal and state laws and VDOT Standards, Specifications and Reference Documents to include, but not limited to the documents listed herein that were current as of the advertisement date of the RFP, or latest Addenda for this Project. The Design-Builder must verify and use the latest version of the documents listed herein. The Design-Builder must meet or exceed the minimum roadway design standards and criteria.

2.1.1 Standards, Specifications, and Reference Documents

If, during the course of the design, the Design-Builder determines that a specific Standard, Specification or Reference Documents is required but not listed herein, it is the responsibility of the Offeror to identify the pertinent Standard, Specification or Reference Document and submit it to VDOT for review and approval prior to inclusion in the Contract Documents.

The VDOT 2007 Road and Bridge Specifications, and its associated Special Provision Copied Notes, contain pricing language under sections entitled “Measurement and Payment” that is not applicable in the Design-Build context of this RFP. Thus, in accordance with the hierarchy of documents, the Design-Builder will refer to Part 3 Articles 6 and 7, Part 4, Article 6 and applicable portions of the Division I Amendments (Part 5) to the Standard Specifications for more information regarding the pricing and payment to the Design-Builder. Similarly, other references below which contain pricing methodologies for the “Contractor” shall likewise not be used. The requirements as described in the text of Part 2 herein take precedence over the referenced documents listed below, unless otherwise indicated.

The standards and references for the Project are listed below in the following order: (a) Standards and Specifications; (b) Reference Manuals; (c) Special Provisions List including Special Provisions, Special Provision Copied Notes and Supplemental Specifications. Items (a) and (b) are published references that are available publicly, for which copies are not provided to the Offerors in the RFP Information Package, but these items are to be used as manuals for design and construction. Items listed in (c) are included in the RFP Information Package.

- VDOT Drainage Manual (including current Errata Sheet)
- VDOT Hydraulic Design Advisories (all current)
- VDOT Stormwater Program Advisories (all current)
- VDOT CADD Manual (Version 2009)
- VDOT Minimum Requirements for QA/QC on Design Build and PPTA Projects, January 2012
- VDOT Guardrail Installation Training Manual (GRIT) May 2011
- VDOT Instructional & Information Memorandums (I&IM) All Divisions

- Location and Design Division
- Structure and Bridge Division
- Traffic Division
- Materials Division
- VDOT Policy Manual for Public Participation in Transportation Projects
- VDOT Road and Bridge Standards, Vol. 1 and Vol. 2 (2008) including all revisions
- VDOT Road Design Manual, Vol. I
- Commonwealth of Virginia Survey Manual
- VDOT Traffic Engineering Design Manual
- Field Guide for Partnering for VDOT Projects
- Guidelines for the Installation of In-Roadway Warning Lights
- Guidelines for the Installation of Marked Crosswalks
- VDOT Materials' Approved Lists
- VDOT Manual of Instructions for the Materials Division
- VDOT Materials' Virginia Test Methods
- VDOT Post Construction Manual
- VDOT 2007 Road and Bridge Specifications, including all revisions
- VDOT 2007 Road and Bridge Specification, Project Spec Guide
- VDOT Construction Manual
- Manual of Uniform Traffic Control Devices (MUTCD) (2009)
- Virginia Supplement to MUTCD (2011)
- VDOT Virginia Work Area Protection Manual (2011)
- DOT Structure and Bridge Manuals; Volume V – series
- VDOT Modifications to AASHTO LRFD Bridge Design Specifications
- Procedures for Inventory and Inspection of Traffic Control Device Structures, 2006
- VDOT Right of Way Manual of Instruction (January 2011)
- VDOT Utilities Manual of Instruction (January 2011)
- VDOT Current Land Use Permit Manual
- VDOT Guidelines for 1993 AASHTO Pavement Design, Revised – May 2003
- VDOT Construction Inspection Manual (April 2008)
- VDOT Design-Build Template Part 3, 4 and 5 Documents (May 2010)
- Access Board Revised Draft Guidelines for Accessible Public Rights-of-Way (November 2005)
- AASHTO Guide for the Development of Bicycle Facilities, 2012
- AASHTO A Policy on Geometric Design of Highways and Streets, 2011
- AASHTO A Policy on Design Standards Interstate System, January 2005
- AASHTO Roadside Design Guide, Fourth Edition, 2011 (updated Chapter 6)
- AASHTO LRFD Bridge Design Specifications, 5th Edition, 2010; and 2010 Interim Specifications
- AASHTO LRFD Guide Specifications for Design of Pedestrian Bridges, 2nd Edition, 2009
- AASHTO Minimum Requirements for Design level Geotechnical Investigations, 2004

- AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals, 4th (2000) Edition
- AASHTO Guide for Design of Pavement Structures (Rigid Pavement and Flexible Pavement) (1993 Edition)
- AASHTO Guide for Protective Screening of Overpass Structures (1990)
- USDOT FHWA Standard Highway Signs
- National Electric Code (NEC) latest adopted edition
- National Electric Safety Code (NESC) latest edition
- DCR Virginia Stormwater Management Handbook, Volume I and II (First Edition – 1999)
- DCR Virginia Erosion and Sediment Control Handbook (Third Edition – 1992)
- American Water Works Associations Standards
- Americans with Disabilities Act Accessibility Guidelines for State and Local Government Facilities
- Transportation Research Board Highway Capacity Manual (2000)
- Duncan, J.M. (April 2000) Factors Of Safety And Reliability In Geotechnical Engineering, Journal of Geotechnical and Geoenvironmental Engineering, ASCE, Discussions and Closure August 2001
- Special Provision for Minimum Requirements for QA & QC for Design-Build and PPTA Projects, dated January 25, 2010
- Guideline for Planting Along Virginia’s Roadways dated March 2007
- Chief Engineer’s Memo for Guidance for Planting in the Clear Zone and Landscaping for VDOT Projects dated November 2, 2000
- Guidelines for Context Sensitive Solutions/Design dated February 25, 2004
- FHWA 23 CFR 752 Landscaping and Roadside Development
- Special Provision Copied Note for Personnel Requirements for Work Zone Traffic Control (12/2/09)

In the event of a discrepancy between VDOT and non-VDOT Standards and References listed herein, the VDOT specifications design standards and manuals shall take precedence. Special Provisions included in this contract document or other Special Provisions selected for use in design and construction of this Project that have been approved by VDOT shall govern over the VDOT specifications, design standards and manuals. Special Provision Copy Notes approved by VDOT and requirements specified within the text of this RFP shall govern over both the Special Provisions and VDOT specifications, design standards and manuals. The design criteria noted herein shall govern over information on plans previously developed.

In situations where the information provided in the RFP Information Package reflects the use of Metric units of measurement (i.e. meters, kilograms, cubic meters, etc.) and the applicable standard reflects the use of Imperial units of measurement (i.e. inches, pounds, cubic yards, etc.), the most current applicable standard shall be deemed to apply regardless of the units of measurement indicated. Any necessary conversion of units between systems of measurement will be accomplished in a manner which results in the use of standard industry values for sizes of materials or tolerances.

2.1.2 RFP Information Package

An RFP Information Package DVD-ROM is available for purchase as indicated in RFP Part 1, Section 2.7.4. The RFP Information Package includes the following:

Special Provisions and Supplemental Specifications:

MATERIALS:

- Special Provision Copied Note for Section 211 for Surface and Intermediate Mixes using RAP (9/24/07, reissued 7/08)
- Special Provision for Flowable Backfill Design-Build Projects (7/30/08, Revised 11/09)
- Special Provision for Density Control of Embankments (9/6/02, revised 11/26/06)
- Special Provision for Elastic Inclusion (11/24/09)
- Supplemental Specification for Section 211 – Asphalt Concrete (10/13/10)
- Supplemental Specification for Section 212 – Joint Materials (1/17/08)
- Supplemental Specification for Section 214 - Hydraulic Cement (1/28/08)
- Supplemental Specification for Section 215 – Hydraulic Cement Concrete Admixtures (1/28/08)
- Supplemental Specification for Section 217 – Hydraulic Cement Concrete (4/12/10)
- Supplemental Specification for Section 224 – Castings (11/15/2007)
- Supplemental Specification for Section 238 – Electrical and Signal Components (3/4/2008)
- Special Provision for Design-Build Tracking (DBT) Numbers ~~(2/8/08)~~(12/08/09)
- ~~Special Provision for Section 315 – Asphalt Concrete Placement Design-Build Projects (10/13/10)~~
- Supplemental Section 315 – Asphalt Concrete Placement (7/19/11)
- Special Provision for Lime Modification of (11/23/09)
- Supplemental Specification for Section 306 - Lime Stabilization (10/2/08)
- ~~Supplemental Specification for Section 315 – Asphalt Concrete Pavement Design-Build Projects (12/12/09)~~
- Special Provision for Nontracking Tack Coat Design-Build Projects (12/7/09)
- Special Provision for Section 504, Sidewalks, Steps, and Handrails (3/30/11)
- Supplemental Section 232 – Pipe and Pipe Arches (7/29/10)
- Supplemental Section 302 – Drainage Structures ~~(11/16/09)~~(1/24/12)
- Special Provision for Pipe Replacement or Rehabilitation (3/26/08)

GENERAL:

- Special Provision for Project Communication and Decision Making for Design-Build Projects (1/3/05, Reissued 8/09)
- Supplemental Specification for Section 522 – Partnering Design-Build Projects, (12/2/09)

~~September 25, 2012~~ Addendum #1 - October 29, 2012

- Special Provision for 2010 Division I Amendments to the Standard Specifications General Provisions for Design-Build Contracts Between Department and Design-Builder, (~~5/2/11~~)(3/12/12)

LANDSCAPING:

- Special Provision for Planting Operations Plan (10/13/10)

TRAFFIC:

- Supplemental Specification for Section 512 – Maintaining Traffic (12/2/09)
- Supplemental Specification for Section 701 – Traffic Signs (1/22/09)
- Special Provision for Section 700 – General (12/4/09)
- Special Provision for Section 701 – Traffic Signs (12/4/09)
- Special Provision for Section 701 – Delineators (12/4/09)
- Special Provision for Section 704 – Pavement Markings and Markers (12/4/09)
- Supplemental Specification for Section 700 – General (12/4/09)
- Special Provision for Work Zone Traffic Control Management Design-Build Projects (1/14/08, Revised 11/09)
- Supplemental Specification for Section 703 – Traffic Signals (1/6/2009)
- Special Provision for Section 703 – Traffic Signals (8/2/2012)
- Special Provision for Modify Existing Controller Cabinet (Signal Controller Cabinet) (8/1/2012)

ENVIRONMENTAL:

- Special Provision for Volatile Organic Compound (VOC) Emissions Control Areas, (8/12/10)

BRIDGE:

- Special Provision for Dynamic Pile Testing for Friction Piles for LRFD (12/10/09)

Environmental:

- Categorical Exclusions; West Section dated August 27, 2012 and East Section dated August 28, 2012
- Hazardous Materials Site Screening Report
- VDOT/VDHR letters
- VDOT Base Map identifying the location of historic properties
- Preliminary Document Reevaluation for PSE Authorization (EQ-200) dated August 31, 2012
- Preliminary Environmental Certification/Commitments Checklist (EQ-103) dated August 31, 2012
- Virginia Department of Game and Inland Fisheries Comments dated May 15, 2012
- Virginia Department of Conservation and Recreation Comments dated March 5, 2012

- VaFWIS Initial Project Assessment Reports dated January 30, 2012
- U.S. Fish and Wildlife Service Preliminary Species Lists dated August 15, 2012
- Center for Conservation Biology Virginia Eagles Nest Locator dated January 30, 2012
- Draft Wetland Determination Data Forms
- Estimated Stream and Wetland Impacts Table

Preliminary Design:

- Preliminary Design Plans
- Project survey
- Value Engineering Study Report, dated June 2, 2011
- LD-443, the Falcon System Access Security Agreement and the Falcon Access Request Form

Bridge

- Transverse Section, including Handrail Detail

Landscaping

- Guideline for Planting Along Virginia's Roadways, dated March 2007
- Sherwood Forrest Phase planting plans

Materials

- Preliminary Geotechnical Data Report, dated June 15, 2012

Hydraulics

- Preliminary Drainage Design and Hydrologic & Hydraulic Analysis Report, dated September 11, 2012
- Form LD-445 VSMP Construction Permit Registration Information, dated December 10, 2009
- Form LD-445A VSMP Construction Permit Contact Information, dated June 15, 2009
- Form LD-445C ESC And SWM Plan Certification Form, dated January 11, 2008
- Form LD-445D Construction Permit Termination Notice, dated June, 15, 2009
- Form LD-445E Stormwater Pollution Prevention Plan (SWPPP) Certification, dated March 19, 2010

Right of Way

- VDOT Right of Way Manual of Instruction
- VDOT Utilities Manual of Instruction

Civil Rights:

- Firm Data Sheet - Consultants and Sub consultants on Project Team
- C-48 - Contractor/Supplier Solicitation and Utilization Form

Requirements described in the Technical Requirements (Part 2 of the RFP) shall supersede information included in the RFP Information Package, including the information depicted on the RFP plans. In the event that there is a discrepancy between the RFP plans (or other information included in the RFP Information Package) and the Technical Requirements (Part 2 of the RFP) herein, the Technical Requirements (Part 2 of the RFP) shall take precedence.

2.2 Environmental

2.2.1 Environmental Document

In accordance with the requirements of the National Environmental Policy Act (NEPA), VDOT prepared two Categorical Exclusions (CE) for the Project. The CE for the section from 0.52 miles west of Almond Creek to 0.10 miles east of Wood Mill Drive was approved by FHWA on August 27, 2012. The CE for the section from 0.16 miles west of Four Mile Creek to 0.14 miles west of Long Bridge Road was approved by FHWA on August 28, 2012. The CEs are included in the RFP Information Package. A preliminary Document Reevaluation for Plans, Specifications, and Estimates (PS&E) Authorization (EQ-200) and preliminary Environmental Certification/Commitments Checklist (EQ-103) have also been completed by VDOT and are included in the RFP Information Package.

The Design-Builder shall carry out the environmental commitments during design and construction, as applicable, as identified in the CEs, EQ-200, and EQ-103 forms. All commitment compliance shall be supported by appropriate documentation, to be provided by the Design-Builder to the VDOT Project Manager. VDOT will complete the Document Reevaluation for RW Authorization (EQ-201) for the Project prior to RW authorization once the required documentation has been received and reviewed. Additionally, VDOT must complete the final EQ-103 and EQ-200 forms prior to the VDOT Project Manager releasing any portion of the Project to construction.

Any changes in scope or footprint proposed by the Design-Builder that are acceptable to VDOT may require additional environmental technical studies and analysis to be performed by the Design-Builder. The Design-Builder will be responsible for notifying VDOT of plan revisions, scope changes, and providing any necessary studies and other necessary information to support VDOT's completion and reevaluation of the NEPA document. VDOT will be responsible for the coordination of any revised environmental documentation with FHWA. The Design-Builder shall then carry out any additional environmental commitments that result from such coordination at its sole expense and no additional cost to the Project.

The Design-Builder is solely responsible for any costs or schedule delays due to permit acquisition, modifications, and NEPA document re-evaluations associated with Design-Builder's design changes and no time extensions will be granted.

2.2.2 Cultural Resources

VDOT has completed coordination with the Virginia State Historic Preservation Office, (VA SHPO) in compliance with Section 106 of the National Historic Preservation Act. Fourteen historic properties eligible for listing on the National Register of Historic Places were identified within the Project's Area of Potential Effects (APE):

VDHR No.	Resource Description
043-0495	House, Osborne Turnpike
043-0575	Kalamazoo Tile House, 1821 New Market Road
043-0580	Stoneman House, 1876 New Market Road
043-0591	House, 2015 New Market Road
043-0544	Chatsworth School
043-0032	Tree Hill
043-0307	Chaffins Farm/New Market Heights Battlefield
043-5073	Fair Oaks and Darbytown Road Battlefield
043-5071	Darbytown and New Market Road Battlefield
043-5072	Darbytown Road Battlefield
043-5074	First Deep Bottom Battlefield
043-5080	Second Deep Bottom Battlefield
44HE0274	Extant Earthwork
44HE1123	Extant Earthwork and Winter Camp

The Project was determined to have No Adverse Effect on historic properties providing that the extant earthworks identified as Archaeological Sites 44HE0274 and 44HE1123 are avoided. The VA SHPO has reviewed and approved VDOT's design in the vicinity of these resources as shown on the plans included in the RFP Information Package. Please note that these plans include a bridge, sixty (60) feet long and fourteen (14) feet wide, designed specifically to span over the extant earthwork at Site 44HE1123 without impacting archaeological deposits associated with it. Importantly, the No Adverse Effect determination is dependent upon all impacts here—including proposed right-of-way and easements being constrained to the area within thirty (30) feet of the northern edge of roadway pavement. The Design-Builder should know that any changes proposed in the vicinity of Site 44HE1123, especially those that would extend more than thirty (30) feet from the northern edge of roadway pavement, will require additional coordination with the VDHR, and quite possibly mitigation for an adverse effect. Copies of the VDOT/VDHR coordination letters and digital mapping showing the coordinated plans relative to all cultural resources identified within the Project's APE are included in the RFP Information Package

The Design-Builder should consider historic properties as design constraints and avoid impacting them. In addition, the Design-Builder shall avoid any other project-related activities on or in the immediate vicinity of these historic properties, including but not limited to staging, borrow/disposal, and any temporary or permanent easements. The Design-Builder should also avoid

making changes that might extend beyond seventy-five (75) feet from the edge of roadway pavement in the vicinity of Archaeological Sites 44HE0247, 44HE0299, 44HE0337, 44HE0338, 44HE1077, 44HE1137, 44HE1140, and 44HE1144.

The Design-Builder shall submit written notification to the VDOT Project Manager if the design plans or construction methods necessitate any activity in the vicinity of historic properties. Please note that any changes to the design, alignment, right-of-way limits, or easements proposed in the vicinity of an historic property will require review by VDOT's Cultural Resources staff and could require additional cultural resources studies and/or coordination with the VA SHPO. The Design-Builder is responsible for conducting all cultural resources studies necessitated by the proposed changes, while the VDOT is responsible for coordinating both the studies and the proposed changes with the VA SHPO. The Design-Builder shall then carry out any additional cultural resources commitments that result from such coordination at its sole expense and at no additional cost to the Project.

If cultural resource technical studies of compensatory mitigation areas are needed to obtain the water quality permits necessary to construct the project, the Design-Builder shall conduct the necessary studies, coordinate with the SHPO, and implement the appropriate treatment actions resulting from the coordination. The Design-Builder will provide the VDOT Project Manager with a copy of the technical reports and correspondence related to compliance with this technical requirement.

2.2.3 Section 4(f) Resources

During the process of evaluating Section 4(f) Resources for the project, VDOT identified fourteen (14) historic properties and three (3) public parks in the project area. Maps of the Historic Properties, Four Mile Creek County Park, Richmond National Battlefield Park, and New Market County Park are included in the RFP Information Package.

Section 4(f) de minimis impact findings were made for Tree Hill (VDHR No. 043-0032), Chaffins Farm / New Market Heights Battlefield (VDHR N. 043-0307), Fair Oaks and Darbytown Road Battlefield (VDHR No. 043-5073), Darbytown and New Market Road Battlefield (VDHR No. 043-5071), Darbytown Road Battlefield (VDHR No. 043-5072), First Deep Bottom Battlefield (VDHR No. 043-5074), and Second Deep Bottom Battlefield (VDHR No. 043-5080). FHWA agreed with a Section 4(f) de minimis impact findings on August 21, 2012.

The proposed trail is located within Four Mile Creek County Park. However, FHWA determined on August 17, 2012 that the trail's involvement with this park qualifies as a Section 4(f) exception pursuant to 23 CFR 117.13(g). The Design-Builder should avoid making any changes to the proposed alignment as shown on the plans included in the RFP Information Package throughout this park property.

Richmond National Battlefield Park and New Market County Park were identified along the project corridor and are being avoided as they are on the opposite side of Route 5 as the proposed trail.

The Design-Builder shall avoid any other project-related activities Tree Hill (VDHR No. 043-0032), Chaffins Farm / New Market Heights Battlefield (VDHR N. 043-0307), Fair Oaks and Darbytown Road Battlefield (VDHR No. 043-5073), Darbytown and New Market Road Battlefield (VDHR No. 043-5071), Darbytown Road Battlefield (VDHR No. 043-5072), First Deep Bottom Battlefield (VDHR No. 043-5074), and Second Deep Bottom Battlefield (VDHR No. 043-5080). The Design-Builder shall also avoid changes to the proposed design on Four Mile Creek County Park property, and avoid impacts to all other Section 4(f) Resources identified in the project area. This includes but is not limited to staging, borrow/disposal, and any temporary or permanent easements. The Design-Builder shall submit a written request to the VDOT Project Manager if the design plans or construction methods necessitate any activity on these properties. VDOT will determine whether additional coordination with FHWA or other agencies is necessary. The Design-Builder shall not perform any other project related activities on these properties unless approved by VDOT in writing.

2.2.4 Water Quality Permits

The Design-Builder will obtain all necessary environmental clearances, permits, and approvals required to accomplish the work as noted in Part 4 (General Conditions of Contract), Article 2.6 (to include utilities to be relocated by the Design-Builder for the Project). The Design-Builder will be responsible for performing necessary design and fieldwork to support the acquisition of necessary water quality permits independently and directly from the regulatory agencies.

The Design-Builder will be the Permittee. Should the Design-Builder propose design changes acceptable to VDOT, permitting requirements may also change; the Design-Builder remains responsible for obtaining all necessary water quality permits and permit modifications required by the regulatory agencies to accommodate the design changes.

VDOT conducted preliminary wetland delineations in 2008 and 2010 from Station 200+00 to Station 465+70 and Station 610+00 to 688+10. VDOT's initial reviews indicated that approximately 0.088 acres of wetlands may be permanently impacted by the Project in the areas reviewed. Draft Wetland Determination Data Forms are included in the RFP Information Package and preliminary wetland boundaries are shown on the Preliminary Design Plans in the RFP Information Package. VDOT's initial reviews also indicated that approximately three hundred and ten (310) linear feet of streams may be impacted by the Project. Tables quantifying approximate wetland and stream impacts are included in the RFP Information Package. The Offeror shall be advised that wetland and stream limits identified were cursory in nature and the Draft Wetland Determination Data Forms are incomplete. This information is provided for initial informational purposes, and has not yet been confirmed by the appropriate regulatory agencies. The Design-Builder is responsible for ensuring that all wetlands and streams are correctly identified, delineated and confirmed, noting that more or less

resources may be present than initially identified. Avoidance and minimization shall be implemented to the greatest extent possible.

The Design-Builder shall be responsible for compliance with all pre-construction and construction-related permit conditions, as well as post-construction monitoring if required by regulatory agencies. This shall include costs associated with acquiring water quality permits and compensatory mitigation for the Project.

The Design-Builder shall provide to the VDOT Project Manager copies of all permits, documentation, and correspondence with regulatory agencies. Construction activities shall not impact regulated areas within the Project limits until all applicable water quality permits have been issued to the Design-Builder. The Design-Builder shall not proceed with work covered by the water quality permits until the VDOT Project Manager releases the work in writing. The VDOT Project Manager may release a portion or all of such work not in jurisdictional areas, but may order a suspension of the same work after its release. The Design-Builder shall not be allowed to begin work that pre-determines the work required in the jurisdictional areas until the permits are secured.

If the Design-Builder determines water quality permits are not required based on information generated, the Design-Builder shall notify the VDOT Project Manager in writing, so that VDOT can authorize the Design-Builder to execute the work. Any deviations that the Design-Builder makes to the Project footprint and/or scope may render the permit determination invalid and will require additional consideration.

The Design-Builder shall note that avoidance, minimization, and mitigation measures associated with permit acquisition will require close coordination between the Design-Builder and VDOT. If permit issuance is delayed or permits are denied, the Design-Builder will be responsible for any schedule delays and/or associated costs.

The Design-Builder shall ensure that project schedules accommodate any Special Provisions, Time of Year Restrictions (TOYR), and the duration of permit acquisition from the regulatory agencies. The Design-Builder shall be responsible for adhering to permit conditions and Special Provisions, as identified in the permit authorizations including but not limited to TOYR, avoidance and minimization recommendations, restoration of temporary impact areas, and countersinking culverts. The Design-Builder shall be responsible for compliance with pre-construction, construction related permit conditions, as well as post-construction monitoring if required by regulatory agencies.

The Design-Builder shall allow environmental compliance inspections by VDOT, and/or regulatory agencies as required by permits and/or to facilitate any interim compliance reviews/assessments.

At the conclusion of the Project, the Design-Builder shall notify VDOT and the regulatory permitting agencies in writing of the completion of the work in the jurisdictional areas covered by the

water quality permits. At the completion of the Project, the Design-Builder is required to transfer any VMRC permit back to VDOT.

The Design-Builder shall carry out any additional permit conditions/commitments that result from change in footprint and/or scope (assuming it is approved by VDOT) at its sole expense and no additional cost to the Project; additionally the Design-Builder will be responsible for any schedule delays and associated costs.

All permitted construction activities shall be identified as hold points in the Design-Builder's CPM Schedule.

2.2.5 Threatened and Endangered Species

VDOT received comments from the Virginia Department of Game and Inland Fisheries (VDGIF) on May 15, 2012 and the Virginia Department of Conservation and Recreation (DCR) on March 5, 2012. VDOT also obtained a Preliminary Species List from the U.S. Fish and Wildlife Service (FWS) Information, Planning, and Conservation System (IPaC) on August 15, 2012, Fish and Wildlife Information Service Initial Project Assessment Report from the Virginia Department of Game and Inland Fisheries (VDGIF) on January 30, 2012, and 2011 bald eagle nest survey data from the Center for Conservation Biology on January 30, 2012. These materials identified the potential for the following state and federal listed threatened and endangered (T&E) species in the project area: Small Whorled Pogonia, Swamp Pink and Bald Eagle. Correspondence and reports listing these species are included in the RFP Information Package.

The Design-Builder shall be advised that new and updated T&E information is continually being added to agency databases. The Design-Builder will be responsible for coordination with and obtaining updated information, requirements, and clearances from state and federal environmental regulatory agencies that provide threatened and endangered species oversight. The Design-Builder is responsible for compliance with state and federal laws and regulations governing T&E species, to include complying with the Endangered Species Act on behalf of FHWA, the lead federal agency, and partnering with them on informal and formal consultation with the U.S. Fish and Wildlife Service. This T&E species coordination is also a standard component of the state and federal water quality permit acquisition process and may result in permit conditions for which the Design-Builder will be responsible. The Design-Builder is responsible for ensuring that all T&E species are correctly identified and impacts assessed, noting that more or less resources may be present than initially identified. Avoidance and minimization shall be implemented to the greatest extent possible.

The Design-Builder shall provide to the VDOT Project Manager copies of all documentation and correspondence with regulatory agencies and FHWA prior to releasing any portion of the Project to construction.

2.2.6 Hazardous Materials

VDOT performed a review of the project and identified sites with recognized environmental conditions that indicate a potential for the presence of hazardous materials. This review is documented in the Hazardous Materials Site Screening Report and is included in the RFP Information Package.

This report identifies one site where biosolids have historically been applied for agricultural purposes. The Virginia Department of Environmental Quality does not restrict the use of soil with incorporated biosolids but, where practical, the Design-Builder shall limit the off-project disposal of these soils.

During the Scope Validation Period, the Design-Builder will be responsible for performing any additional studies to characterize the identified potential contamination source(s) as well as any other sources and to evaluate impacts to Project construction. The Design-Builder shall include in the price proposal all costs associated in complying with the above hazardous materials studies. The Design-Builder will be responsible for taking all necessary measures - through remediation and/or other management actions - required to address hazardous materials that materially impact construction and/or long-term maintenance of the Project. The Design-Builder will NOT be responsible for the hazardous materials remediation costs. As used in this RFP, the term “hazardous materials remediation costs” means the actual price paid for hazardous materials remediation and does not include the cost to perform hazardous materials studies. The Design-Builder shall develop and submit a work plan for hazardous materials remediation and obtain VDOT approval prior to initiating remediation. Notwithstanding the foregoing provision, should additional hazardous materials remediation be required to accommodate Design-Builder’s unique solution (and/or Contractor’s means, methods and resources used during construction) outside the right of way limits depicted on the preliminary drawings included in the RFP Information Package, then all hazardous materials remediation costs for such additional remediation shall be paid by the Design-Builder.

For any non-hazardous waste, the Design-Builder shall have the signatory responsibility for the waste shipping manifest(s) and/or bill(s) of lading.

For hazardous waste the Design-Builder shall be considered the co-generator and shall be responsible for preparing the hazardous waste shipping manifest(s) for the VDOT representative’s signature and as otherwise consistent with the signatory requirement under Section 411 of the VDOT Road and Bridge Specifications.

The Design-Builder shall make all appropriate notifications as required by the Special Provision Copied Note regarding demolition notifications for structures not requiring asbestos removal and all Federal and State regulations.

The Offeror shall include in the Price Proposal all costs associated with complying with the above listed requirements. Abatement and/or removal of hazardous material(s) discovered to exist

within the Project limits will be paid for, if and when necessary, under a Work Order in accordance with Article 9 of Part 4 (General Conditions of Contract).

In the event of spills or releases of petroleum products and other hazardous liquids or solid materials, the Design-Builder shall take immediate action to contain and eliminate the spill release, including the deployment of environmental protection measures to prevent the migration of the spill into the waters of the United States and of worker exposure protection measures. The Design-Builder shall also notify the VDOT Project Manager immediately of all instances involving the spill, discharge, dumping or any other releases or discovery of hazardous materials into the environment and shall provide all required notifications and response actions.

All solid waste, hazardous waste, and hazardous materials used or generated by the Design-Builder shall be managed in accordance with all applicable federal, state, and local environmental regulations. The Design-Builder shall be responsible for the development of a Spill Prevention, Control, and Countermeasure Plan as required by regulation and for submission of any required plan to the VDOT Project Manager prior to start of construction. The Design-Builder shall review all the staging areas for the presence of obvious contamination or other hazardous materials prior to use, and notify the VDOT Project Manager if such conditions are identified.

2.2.7 Environmental Compliance

The Design-Builder is responsible for compliance with all applicable state and federal environmental laws, regulations, and permits. If, at any time, the Design-Builder is not in compliance with all applicable environmental laws, regulations, Executive Orders, commitments, etc., the VDOT Project Manager has the authority to suspend work, in whole or in part, until such time as the deficiencies or non-compliant items have been corrected. Should any non-compliant item(s) be identified during construction, immediate and continuous corrective action shall be taken by the Design-Builder to bring the item(s) back into compliance.

The Design-Builder shall be responsible for any schedule delays and associated costs as a result of any delays and/or shut downs associated with non-compliance. Any monetary fines associated with violations and/or any environmental restoration activities required to resolve violations shall be the responsibility of the Design-Builder.

The Design-Builder shall carry out environmental commitments during design and construction, as applicable, as identified in the CE, the Document Reevaluations for RW Authorization and PS&E Authorization, and the Environmental Certification/Commitments Checklist. All commitment compliance shall be supported by appropriate documentation, to be provided by the Design-Builder to the VDOT Project Manager.

The Design-Builder shall be responsible for compliance with pre-construction and construction-related environmental commitments and permit conditions. The Design-Builder shall assume all obligations and costs incurred by complying with the terms and conditions of the permits

and certifications. Any fines associated with environmental permit or regulatory violations shall be the responsibility of the Design-Builder.

2.3 Roadway/ Trail

Functional Classification

The Virginia Capital Trail is a Multiuse Trail (Shared Use Path) and is adjacent to Route 5, a Rural Minor Arterial with a 60 mph Design Speed. The Design Speed for the Multiuse trail is 20 mph and the design shall adhere to the design standards established in Section A-5 of the VDOT Road Design Manual. Sight Distance requirements are to be based on the VDOT Road Design Manual. It is important to note that the Height of Eye is to be assumed at 4.5 feet and the Height of Object at 0 feet for sight distance calculations. Additionally, note that stopping sight distance equations may not hold for vertical curves with small vertical relief.

The Design Builder shall submit plans for right-of-way and construction approval in English units.

Proposed Improvements

The Project includes design, right-of-way acquisition and construction of the Varina Phase of the Virginia Capital Trail as illustrated on the preliminary design plans included in the RFP Information Package. The Design-Builder shall design and construct the trail within the proposed right-of-way and permanent and temporary easements as depicted in the preliminary design plans. The Route 5 tree canopy shall be maintained to the greatest extent possible. Impacts to the Route 5 tree canopy shall not exceed those indicated on the preliminary design plans unless otherwise approved in writing by the VDOT Project Manager. The trail shall be offset the maximum available distance from Route 5. The offset distance shall meet or exceed the offset indicated in the preliminary design plans unless otherwise approved in writing by the VDOT Project Manager. Adjusting the alignment of the trail to avoid utilities, cultural resources, hydraulic features, etc. is encouraged; however, the Design-Builder is solely responsible for any schedule delays and associated costs adjusting the alignment may cause.

The Varina Phase of the Virginia Capital Trail will be ten (10) feet wide with three (3) feet wide graded shoulders on either side. A two (2) percent cross slope shall be maintained as depicted in the preliminary design plans included in the RFP Information Package. Varying the direction of the cross slope is acceptable to facilitate drainage across the trail as necessary. All entrances shall be paved from the Route 5 edge of pavement to a minimum of five (5) feet beyond the outside edge of Trail pavement to reduce the risk of raveling. It is noted that entrances may need to be extended past these limits to appropriately tie back into the existing entrance. Temporary easements for entrances have been shown where required by the preliminary design plans. Any lengthening of the proposed entrance construction beyond what is shown in the preliminary design plans shall require additional easements. The minimum horizontal curve radius of the trail alignment shall be one hundred (100)

feet, however, the radii for curves at the approaches to stop conditions may be reduced where necessary to reduce right of way impacts.

All other requirements, including adherence to the Americans with Disabilities Act Accessibility Guidelines (ADAAG) for Buildings and Facilities as adopted by FHWA, and as set out in the VDOT Road Design Manual for shared use paths and the AASHTO Guide for the Development of Bicycle Facilities, dated 2012, shall be met.

The design of the Project will require coordination with representatives from FHWA and VDOT as applicable.

2.4 Survey

The survey included in the RFP Information Package is in English units and in accordance with the current VDOT Survey Manual and Offerors will be entitled to rely upon the accuracy of the data specifically set forth therein. Notwithstanding this, Offerors are advised that such survey is not represented to be complete for purposes of designing the Project, and that Design-Builder's scope of work includes performing all additional surveying that is necessary to supplement the above-referenced survey as required for design purposes. This includes the preparation of survey plats as required for right-of-way acquisition.

*The Virginia Code 33.1-94 requires that Notice of Intent letter (RUMS Forms I1, I2, I3, and I4) "shall be sent to the owner at the address recorded in the tax records, or delivered by guaranteed overnight courier or otherwise delivered to the owner in person with proof of delivery **not less than 15 days prior to** the first date of the proposed entry. Notice of intent to enter shall be deemed made on the earlier of the date of mailing, if mailed, or on the date delivered." The notice shall include the anticipated date/dates such entry is proposed to be made and the purpose of such entry. Advance notification of property owners is required for all data collection efforts related to the development of highway plans. Copies of the letters and address labels shall be provided to the VDOT Project Manager for forwarding to the District Survey Manager as soon as they become available.

The Design-Builder will be responsible for obtaining any additional survey data, including all right of entry and land use permits, locating and/or designating underground utilities, DTM, utility test holes and obtaining other related data necessary to design and construct the Project. Additionally, the Design-Builder will be responsible for any update (property owner changes, subdivisions, etc.) that may occur that needs to be reflected on the plans and plats in order to acquire right of way and complete the final design. Any additional Survey changes will be verified and certified and submitted in final documentation.

Prior to Project completion, the Design-Builder shall provide and set final VDOT RW-2 right of way monuments within the Project Limits. The Design-Builder shall depict the monuments on the final plats in accordance with the Department's Survey Manual.

2.5 Bridges

The configuration and width of bridges shall be in accordance with the Transverse Section, including Handrail Detail, provided in the RFP Information Package.

For the structure over Route 895, the maintenance vehicle loading shall be included. For the timber structures, the maintenance vehicle load does not need to be considered except to accommodate the Contractor's method of construction.

2.5.1 Bridge over Route 895

2.5.1.1 Horizontal clearance

1. Except for a pier in the median of Route 895, substructure units and slope protection shall be located such that guardrail or barrier protection is not required on the outside shoulders of Route 895.
2. Any slope protection or fill in front of the abutments of the proposed Virginia Capital Trail structure shall not be located closer to Route 895 than the slope protection of the existing bridge carrying Route 5 over Route 895.

2.5.1.2 Vertical clearance

Vertical clearance above Route 895 shall be a minimum of eighteen (18) feet and six (6) inches.

2.5.1.3 Bridge layout/concept and materials

1. The bridge shall be jointless.
2. The superstructure shall have a minimum of three (3) girders supporting a composite concrete deck. Girders may be prestressed concrete or structural steel. All structural steel, including bearings, shall be ASTM A709 Grade 50W and shall be unpainted.
3. Approach slabs are not required.
4. Pedestrian fence shall be provided in accordance with the Transverse Section, including Handrail Detail, provided in the RFP Information Package. Pedestrian fence shall be black vinyl coated steel.
5. Low permeability concrete shall be used.
6. Low Carbon/Chromium corrosion resistant reinforcement shall be used in accordance with IIM-S&B-81.

2.5.2 All Other Bridges

With the exception of the bridge over Route 895, the bridges proposed in the preliminary plans shall be timber structures. The preliminary design plans depict the approximate size, location and concept of each proposed structure. The final span lengths, size of superstructure members and substructure elements and maintenance of traffic shall be determined by the Design-Builder.

The proposed bridges shall be designed to meet all applicable hydraulic and environmental requirements. The bridges identified in the preliminary design plans represent the number and length of bridges that VDOT anticipates will be needed to meet these requirements. The Design-Builder may alter the location and lengths of proposed bridges as long as all applicable hydraulic, environmental, and cultural resource requirements are satisfied. A preliminary assessment of the hydraulic impacts of the bridge crossings entitled Preliminary Drainage Design and Hydrologic and Hydraulic Analysis Report (dated September 11, 2012) is included in the RFP Information Package for reference.

Materials used for constructing the timber pedestrian bridge shall conform to the requirements of sections 403.02 and 418.02 of the Specifications. All timber used will be treated with an approved treatment in accordance with the requirements of Section 236.02 (c) of the Specifications, except that glulam members shall be treated with pentachlorophenol (PCP) after they are glued together in the shop.

The deck of timber structures shall be two (2) inch by six (6) inch planks secured perpendicular to stringers with galvanized screws. Stringers shall be spaced no greater than twenty-four (24) inches center-to-center. At time of installation, planks shall be placed tight together with no gaps.

2.5.3 Shop Drawings

The Design-Builder shall review and approve working/shop drawings and submit three (3) approved sets to the VDOT Project Manager. Reference should be made to Section 105.10 of the Division I Amendments (Part 5) to the Standard Specifications. The working/shop drawings shall be approved by a registered, licensed, Professional Engineer holding a valid license to practice engineering in the Commonwealth of Virginia.

2.5.4 Safety and Acceptance Inspection for the Proposed Bridges

Acceptance of a bridge structure will require the following independent inspections by VDOT:

1. An inspection performed by VDOT in accordance with National Bridge Inspection Standards (NBIS) requirements as defined by 23 CFR Part 650 is required prior to opening all or a portion of the new structure to the public. The Design-Builder shall rectify any instance of non-compliance for VDOT approval prior to opening all or a portion of the new structure to the public.

2. A final acceptance inspection performed by VDOT in accordance with NBIS requirements as defined by 23 CFR Part 650 is required after demolition of the existing structure and prior to Substantial Completion. The Design-Builder shall rectify any instance of non-compliance for VDOT approval prior to Substantial Completion.

To facilitate inspection of the structure by VDOT, the Design-Builder shall ensure that all structural elements are accessible and shall provide adequate resources, as necessary, including:

- Man-lifts, bucket trucks, under bridge inspection vehicles, boats, or other equipment necessary to inspect the structure as well as properly trained staff of sufficient composition to support the inspections.
- Plans, procedures, personnel, and equipment to implement traffic control measures.

The Design-Builder shall provide a minimum of thirty (30) days notice to VDOT whenever it requires VDOT to undertake an inspection. These inspections shall be included in the Baseline Schedule. The Design-Builder's notice to VDOT shall include as-built drawings, traffic control procedures, a description of the items to be inspected and an anticipated schedule for the inspections, all in accordance with the requirements contained in Section 2.2.

Unless otherwise approved by VDOT, structures shall be substantially complete (i.e. roadway, and slopes on the approaches and underneath the structure are already in place) before the inspection will be performed.

2.6 Geotechnical Work

A preliminary geotechnical study for the Project was developed to capture the geological conditions within the project limits and is included in the RFP Information Package. This preliminary geotechnical study is provided for Offerors' information in accordance with Section 102.04 of Division I Amendments to the Standard Specifications and should be verified by the Design-Builder.

The Design-Builder is required to perform supplemental design level geotechnical investigations to validate the preliminary design information included in this RFP and any future addendums. The geotechnical engineering investigation performed by the Offeror shall meet or exceed both Chapter 3 of the VDOT Manual of Instructions (MOI) for Material Division and Section 700.04(c) of the 2007 VDOT Road and Bridge Specifications; however, the Design-Builder may reduce the boring frequency to one (1) every four hundred (400) feet along the centerline of the proposed Trail alignment provided one (1) test hole is dug at the midpoint between each set of bores to gauge topsoil stripping depth and the strength of the subgrade below the topsoil.

The Design-Builder shall collect appropriate data for geotechnical evaluation of embankments, soil cuts, culverts, minor structures (including drainage pipes), and any other earth supported structures or elements of highway design and construction. The Design-Builder will be responsible for obtaining water quality permit(s) required for any additional borings needed in

performance of the Design-Builder's geotechnical investigation for this Project. The Design-Builder shall complete laboratory tests in accordance with pertinent ASTM or AASHTO standards and analyze the data to provide design and construction requirements. Soils, aggregate, concrete and other materials tests shall be performed by a laboratory accredited through the AASHTO Accreditation Program (AMRL and CCRL) for each test it conducts for the Project, unless otherwise approved by VDOT. Nuclear density gauges used for compaction monitoring and testing shall be capable of printing the input/output data and readings. Print outs shall be done daily and placed in the project file.

The Design-Builder shall provide all records of subsurface explorations and describe the soils encountered and their depth limits in accordance with the requirements outlined in Chapter 3 of the VDOT MOI's for Materials Division. The Design-Builder shall provide electronic copies of all subsurface explorations in accordance with the boring log template available on the website address included in Chapter 3 of the VDOT MOI's for Materials Division. The electronic files shall be provided by a certified professional geologist or a registered professional engineer in the Commonwealth of Virginia, in gINT© software. Upon request, VDOT will provide its gINT and ACCESS file structures for the Geotechnical Database Management System (GDBMS).

Where applicable, the Design-Builder shall incorporate reliability assessments in conjunction with standard analysis methods. An acceptable method for evaluation of reliability is given by Duncan, J.M. (April 2000) *Factors Of Safety And Reliability In Geotechnical Engineering*, Journal of Geotechnical and Geo-environmental Engineering, ASCE, Discussions and Closure August 2001. A suitable design will provide a probability of success equal to or greater than ninety-nine (99) percent. The aspects of this Project for which reliability assessments shall be made include: (1) the selection of soil parameters used in the design of all foundations and retaining walls, (2) the factors of safety for slope stability, and (3) the settlement and bearing capacity of embankments. Except as mentioned in (1) above, reliability assessments need not be performed for structural foundations and retaining walls, which will be evaluated based on the required limit states in LRFD. The Design-Builder may propose to identify specific, non-critical features, and alternative methods for evaluating variability of subsurface conditions, reliability and minimum factors of safety, prior to submission of its design calculations and drawings. The Department may, in its sole discretion, accept or reject such proposed methods.

The Design-Builder shall submit to the Department for its review all geotechnical design and construction memoranda and/or reports that summarize pertinent subsurface investigations, test, and geotechnical engineering evaluations and recommendations utilized in support of their design/construction documents. This submittal shall be made at least ninety (90) days in advance of the submittal of any final design/construction documents that is dependent upon the geotechnical evaluations and recommendations. Technical specifications for construction methods that are not adequately addressed in the Standard Specifications shall be provided by the Design-Builder as part of the final design/construction documentation. Prior to submittal of any final design/construction documentation, the Design-Builder shall review the final design/construction documents to assure that it appropriately incorporated the geotechnical components and shall submit evidence of this

review to accompany the final design/construction documentation. The Design-Builder shall reference the drawings that incorporate the pertinent results. The Design-Builder's Quality Assurance and Quality Control Plan shall document how each specific geotechnical recommendation or requirement will be addressed in the final design/construction documentation. The results of the geotechnical investigation and laboratory results shall support design and construction efforts to meet the requirements outlined in this Section.

2.6.1 Minimum Pavement Sections

Minimum pavement sections are being provided for proposal preparation purposes only. If the Design-Builder confirms that the minimum pavement sections are inadequate for actual design/construction conditions, it shall notify VDOT during the Scope Validation Period of the necessary changes and proposed price adjustments, if any. Acceptable changes are limited to increasing the thickness of the base or subbase layers specified below. Any changes to the minimum pavement sections noted below must be approved by VDOT prior to implementation. The Design-Builder shall be responsible for the final design and construction of the pavements for this Project as approved by VDOT and in accordance with the Contract Documents.

The Design-Builder shall prepare and incorporate the validated pavement sections into the plans, typical sections, profiles and cross-sections in accordance with the applicable manuals noted in Section 2.1.1 of this document. This includes drainage and subdrainage requirements to ensure positive drainage both within the pavement structure and on the pavement surface.

The minimum pavement sections for the Project are as follows:

Virginia Capital Trail

2.0 inches of Asphalt Concrete SM-12.5A (estimated 220 lb/sy)
8.0 inches of Coarse Aggregate, Size No. 8, Aggregate Base Material, Type I, Size No. 21B, or RAP (RAP of comparable gradation is acceptable when consistent with **Special Provision for Crushed Hydraulic Cement Concrete**, with respect to Acceptance criteria.)

Geosynthetics and free-draining material shall be used for stabilization and drainage. Approximate locations requiring geosynthetics due to the presence of unsuitable subgrade material can be interpolated from the data included in the preliminary geotechnical study that is provided in the RFP Information Package. These locations shall be verified in the final geotechnical report provided by the Design-Builder and any discrepancies must be reported to VDOT prior to the expiration of the Scope Validation Period.

Entrances

PE-1 TYPE III

2.0 inches of Asphalt Concrete SM-12.5A (estimated 220 lb/sy)
6.0 inches of Aggregate Base Material, Type I, Size No. 21B

2.6.2 Alternative Performance Specifications

The performance specifications listed in the 2007 VDOT Road and Bridge Specifications may not be desirable for the construction of a shared use path due to its relatively thin pavement design. The Design-Builder may recommend alternative performance specifications, similar to those for an asphalt concrete sidewalk listed in Section 504 of the 2007 VDOT Road and Bridge Specifications, to the VDOT Project Manager for approval. Minimally, the performance specifications shall consist of documentation addressing the following:

- 1) Determination of foundation characterized as shape and compacted to a firm, even surface
- 2) Bedding material acceptance
- 3) Asphalt concrete placement providing a smooth, dense, and uniform thickness

VDOT reserves the right to reject the alternative performance specifications.

2.6.3 Geotechnical Requirements

2.6.3.1 Settlement

All pavements, subgrades, and embankments, including tie-ins to both the existing and proposed bridge structures, shall be designed and constructed to meet the following post-construction settlement tolerances:

- Total vertical settlement less than two (2) inches over the initial twenty (20) years, and less than one (1) inch over the initial twenty (20) years within one hundred (100) feet of bridge abutments.
- Settlement that does not result in damage to adjacent or underlying structures, including utilities and that does not impede positive drainage of the pavement surface especially within the travel lanes.
- For pavement surfaces to include areas of tie-ins to the Project, grade tolerances shall be measured with a ten (10) foot straightedge. The variation of the surface from the testing edge of the straightedge between any two contacts with the surface shall not be more than plus or minus (+/-) 0.25 inches.

Humps and depressions exceeding the specified tolerance will be subject to correction by the Design-Builder. The Design-Builder shall notify the Quality Assurance Manager (QAM) and VDOT for any non-conformance items.

Settlement monitoring plates shall be installed in areas where the predicted settlement under the weight of the new embankment fill exceeds five (5) inches and/or in areas where surcharging or wick drains are to be used to accelerate the time rate of settlement of the subgrade material beneath the embankment. The location, number and frequency of settlement monitoring plates to be installed and monitored shall be determined by the design builder’s Geotechnical Engineer of Record (GER) subject to approval by the Department. In no case shall the monitoring frequency exceed two (2) weeks unless approved by the Department. The settlement plates shall be constructed and installed in accordance with Section 303.04(i) of the 2007 VDOT Road and Bridge Specifications. The GER shall verify in writing to the QAM that all monitoring plates were installed correctly. The settlement monitoring will be continued at the specified frequency until the required waiting period has been completed and the GER evaluates the data and confirms the rate of settlement has stabilized, the primary consolidation or elastic settlement is complete, and that the remaining long-term settlement will not exceed the tolerances included herein. All cost associated with the construction, installation, monitoring and analysis of the data shall be the responsibility of the design build and the total cost included in their bid estimate to include any costs associated with any surcharging and/or ground improvement techniques they plan to employ.

2.6.3.2 Slope Stability

Design stable cut slopes and embankment slopes and evaluate stability for interim construction stages, for the end of construction condition, and for design-life conditions. Design shall satisfy the following criteria:

- The maximum slope ratio to be used for cut and/or roadway embankment fill slopes should not be steeper than 2H:1V.

The following factors of safety are to be used with limit equilibrium methods of analysis to determine factors of safety for representative sections of all soil cut and soil embankment fill slope areas ten (10) feet or more in height and/or where slopes are supporting, or are supported by, **retaining structures**. The factors of safety listed in Table 1 below are valid for subsurface investigations performed in accordance with Chapter III of the Materials Division’s Manual of Instructions or for site specific investigation plans approved by the District Materials Engineer. Approval of site specific investigation plans with reduced boring frequency may require higher factors of safety.

Table 1: Minimum Factors of Safety for Soil Cut/Fill Slopes

Slope analysis parameters based on:	Factor of Safety	
	Involves Structure or Critical Slope ¹	Non-Critical Slope
In-situ or lab. tests and measurements ^{2,3}	1.5	1.3
No site specific tests	N/A ³	1.5

Notes:

1. A critical slope is defined as any slope that is greater than twenty-five (25) feet in height, affects or supports a structure, impounds water or whose failure would result in significant cost for repair, or damage to private property
 2. Site specific in-situ tests include both ground water measurements and SPT testing but may also include CPT or DMT
 3. Parameters for critical slopes involving structures must be based on specific laboratory testing
 4. Problem soils (very soft soils, very loose soils, fissured or heavily over-consolidated soils), must be analyzed using shear strength parameters determined from appropriate laboratory strength tests in accordance with accepted local engineering practice
 5. Construction plans shall specify use of soil types consistent with the parameters used in slope analyses
- Incorporate reliability assessments as referenced above.

2.7 Hydraulics

2.7.1 General

The Design-Builder shall provide and/or perform all investigations, evaluations, analysis, coordination, documentation, and design required to meet all Hydrologic and Hydraulic, Drainage, Stormwater Management, Erosion and Sedimentation Control, Stormwater Pollution Prevention, and Virginia Storm Water Management Permitting requirements of the standards and reference documents listed in Section 2.1.

2.7.2 Hydrologic and Hydraulic Analysis (H&HA)

An H&HA, including scour analysis shall be completed for bridges over waterways and major culvert crossings that have a total 100 year design discharge greater than 500 cfs. The Design-Builder shall deliver to VDOT a final H&HA, including scour analysis for proposed major drainage structures. These analyses shall be submitted to VDOT for review and approval prior to the commencement of construction. The H&HA shall include an established level of construction tolerance to allow for the hydraulic performance established in the H&HA to be maintained. The approval of the H&HA represents a hold point in the Design-Builder's CPM Schedule. The ultimate proposed conveyance system (inclusive but not limited to culverts, stream realignment, and outfall conveyance channels through the project area) shall be designed by the Design-Builder to meet all applicable hydraulic requirements, including current Federal Emergency Management Administration (FEMA), Federal Highway Administration (FHWA), and VDOT guidelines as described in the VDOT Drainage Manual, (including current Errata Sheet), Hydraulic Design Advisories and applicable I&IMs.

Natural stream design, bank hardening, and revetments will be considered as part of the hydraulic design to minimize downstream impacts in accordance with State and Federal requirements applicable to this project. Natural stream design, bank hardening and revetments shall be designed in accordance with acceptable FHWA Publications. Acceptable FHWA publications include, but are not limited to, HDS-6, HEC-11, HEC-14, HEC-20, and HEC-23.

The hydraulic analyses shall be documented by the completed VDOT LD-293 forms. The Design-Builder shall provide VDOT two (2) paper and two (2) electronic copies (Adobe PDF format) of the final H&HA, HEC-RAS (or other VDOT approved analysis software for this project) Files and LD-293. The final H&HA submittal is to include the completed VDOT form LD-450.

Upon completion of the installation of any major drainage structure, the Design-Builder shall prepare a final as-built survey of the major drainage structure and related upstream and downstream appurtenances and provide such survey to the Design-Builder's hydraulic designer/engineer. The as-built survey shall include the horizontal location and vertical elevations of the constructed major drainage structure in sufficient detail to confirm pre-construction hydraulic performance. A post construction as-built Hydraulic and Hydrologic Analysis and report shall be developed based on the as-built survey and submitted to VDOT for review and acceptance. The post construction H&HA shall demonstrate that the anticipated post construction hydraulic performance of the major drainage structure matches or betters that of the pre-construction H&HA. If the post construction analysis shows an impact greater than the pre-construction H&HA and/or exceeds the construction tolerances established with the pre-construction H&HA, then the Design-Builder will be responsible for mitigating the adverse impacts of the post construction condition at no additional cost to VDOT.

2.7.3 Drainage

The design shall maintain the existing drainage patterns to the maximum extent practicable. Overtopping of the trail will be acceptable such that, placement of the trail does not adversely affect the existing hydraulics of private property, Route 5 and/or any of its major structures. The drainage design work shall include the design of culverts, verifying the adequacy of existing and proposed entrance pipes, open channels (ditches), storm sewer systems, bridge deck drainage assemblies and structures, adequate outfall analysis, stormwater management facilities, and erosion and sediment control in compliance with the standards and reference documents listed previously in Section 2.1 and the VDOT Erosion and Sediment Control & Stormwater Management Program. Temporary Drainage needed for MOT sequence shall be provided. The Design Builder shall provide VDOT two (2) paper and two (2) electronic copies on CD of a final drainage report incorporating all drainage calculations including pre and post development discharges, capacities, and supporting data such as drainage areas (with maps), ground cover calculations, etc. for review and approval prior to submitting detail design plans in accordance with the documentation requirements as outlined in the VDOT Drainage Manual.

For the purposes of developing the Price Proposal, the Offeror shall assume that the existing drainage pipes and culverts within the project limits are unserviceable and are to be plugged and

abandoned in accordance with VDOT Road and Bridge Standard PP-1, removed, or replaced with adequate structures designed and constructed in support of the Design-Builder's final drainage design. The Offerors should note that none of the existing pipes and culverts within the project limits have been surveyed for structural and functional deficiencies. If after award the Design-Builder investigates the serviceability and functionality of the existing pipes and culverts, and as a result proposes use (or repair) of some or all, then it shall be done only with VDOT's approval. The Design-Builder shall assess the serviceability of the structure by performing a visual/video inspection of the existing pipes and culverts utilizing the assessment criteria for Post Installation Inspections presented in VDOT Supplemental Specification 30202. The Design-Builder will provide VDOT with an inspection report documenting the assessment as prescribed in the supplemental specification. Drainage pipes and box culverts deemed repairable shall be rehabilitated in accordance with VDOT's guidelines including, but not limited to those methods outlined in the latest version of IIM-LD-244 and Special Provision SU302000A - Pipe Culvert Replacement or Rehabilitation.

2.7.4 Post Construction Stormwater Management Plan and Erosion and Sediment Control Plan

An Erosion and Sediment Control (ESC) Plan and Narrative, Stormwater Pollution Prevention Plan (SWPPP), and a post construction Stormwater Management (SWM) Plan shall be prepared and implemented by the Design-Builder in compliance with applicable requirements of the standards and reference documents listed in Section 2.1 including the Virginia Erosion and Sediment Control Law and Regulations and the Virginia Stormwater Management Program (VSMP) Law and Regulations. It shall be the responsibility of the Design-Builder to have a qualified person within their team structure, other than the ESC and post construction SWM Plan designer, who is authorized by the Department of Conservation and Recreation (DCR) to perform plan reviews, independently review and certify that the ESC Plans and Narrative and post construction SWM Plan for the Project are in accordance with VDOT's Approved ESC and SWM Standards and Specifications. Before implementing any ESC or post construction SWM measures not included in VDOT's approved ESC and SWM Standards and Specifications, a variance or exception respectively must be requested through the District Drainage Engineer in accordance with the latest versions of IIM-LD-11 and IIM-LD-195. The Design-Builder shall complete and submit the ESC and SWM Plan Certification form (LD-445C) to the VDOT Project Manager. The Design-Builder shall provide VDOT two (2) paper and two (2) electronic copies each on CD of the final ESC Plan and Narrative, SWPPP and post construction SWM Plan incorporating all calculations, analysis, documentation and evaluations required. The ESC Narrative shall specifically include calculations (with supporting data) documenting that the design meets the adequate outfall requirements of the VSMP Regulations for each location where stormwater is discharged from the Project.

The land-disturbing activity for the Project is equal to or greater than 2,500 square feet and coverage under the VSMP General Construction Permit For The Discharges From Construction Activities (VSMP Construction Permit) is required. The Design-Builder shall coordinate and submit the required permit coverage application information to the VDOT Project Manager. The Design-Builder shall complete the applicable sections of the VSMP Construction Permit Registration form (LD-445), VSMP Construction Permit Contact Information (LD-445A), VSMP Construction Permit

Fee Registration form (LD-445B). These forms along with the completed ESC and SWM Plan Certification form (LD-445C) shall be submitted to the VDOT Project Manager. The VDOT Project Manager will review the submitted information and, if complete and acceptable, process a request for coverage under the VSMP Construction Permit in accordance with VDOT's guidelines as outlined in the latest version of IIM-LD-242. If any information submitted by the Design-Builder is found to be incomplete and/or unacceptable, the assembly will be returned to the Design-Builder for corrective action and resubmission. The Design-Builder will be the Permittee and shall be responsible for all permitting fees.

A working conceptual ESC and post construction SWM Plan and SWPPP for the entire Project must be submitted for review and approval with the initial application for permit coverage. This initial conceptual Plan submittal shall include the proposed total expected Land Disturbance Area and Land Development Area, including any off-site facilities, for the entire Project. Where the Project will be constructed in segments, the Design-Builder shall submit a finalized ESC Plan, a post construction SWM Plan and a SWPPP, including the expected Land Disturbance Area, for the proposed initial work segment in addition to the conceptual plan for the entire project. It is expected that the individual work segment submittals will be self-sustaining and not incur a deficit in post construction SWM design requirements requiring mitigation on future work segments. Subsequent work segment submittals shall include required modifications to the Land Disturbance Area value. However, these modifications, in total, shall not exceed the initially submitted Land Development Area value. The Design-Builder shall not proceed with work to be covered by the permit until permit coverage is secured and the VDOT Project Manager releases the work in writing. It is noted that permit coverage, and subsequent release of work, can take up to 90 days from the time that the Design-Builder submits a request for coverage that includes all required information. This represents a hold point in the Design-Builder's CPM Schedule. Design-Builder shall provide a completed SWPPP Certification form (LD-455E) before commencement of any land disturbing activity and shall complete and include the SWPPP General Information Sheets in the plan assembly per the latest version of IIM-LD-246. The SWPPP Certification form (LD-455E) and SWPPP General Information Sheets shall be updated with each work segment submittal as necessary. The Design-Builder shall be responsible for compliance with construction-related permit conditions and shall assume all obligations and costs incurred by complying with the terms and conditions of the permit. Any fines associated with permit or regulatory violations shall be the responsibility of the Design-Builder. Upon completion of the entire regulated land disturbing activity (including final stabilization of all disturbed areas), the Design-Builder shall provide as built Permanent Best Management Practice (BMP) information in Section VI of the SWPPP General Information Sheets for each post construction BMP placed into service on the project, complete and sign the VSMP Construction Permit Termination Notice form (LD-445D) and submit both documents to the VDOT Project Manager for processing. The Design-Builder shall also have on-site during any land disturbing operations an individual or individuals holding a DCR Inspector Certification, a DCR Responsible Land Disturber (RLD) Certification and a VDOT Erosion and Sediment Control Contractor Certification (ESCCC) to ensure compliance with all DCR and VDOT erosion and sediment control plan implementation requirements.

2.7.5 Post Construction Stormwater Management Facilities

Provided in the RFP Information Package are preliminary stormwater management calculations based upon the alignment depicted in the RFP Plans that are included in the RFP Information Package. From these calculations VDOT has determined that permanent stormwater management facilities are not required for the Project; however, the Design-Builder shall be responsible for verifying and validating the Project's post construction stormwater management requirements for the final design.

The Design-Builder shall be responsible for the design and construction of stormwater management facilities as required for the Project in accordance with the latest version of IIM-LD-195, and the other standards and reference documents listed in section 2.1 including the Virginia Stormwater Management Program Law and Regulations. All stormwater management facilities shall be designed according to applicable standards and references in Section 2.1, including the latest version of IIM-LD-195 and the Virginia SWM Handbook, and shall comply with the minimum geotechnical requirements contained therein. The Design-Builder is to insure proper ingress and egress to any stormwater management facility and that any specific proprietary facilities have proper maintenance details included in the plans.

2.7.6 Other Drainage Requirements

All drainage facilities (existing and newly constructed) within the Project area that are disturbed or extended as part of the Project and are functioning elements of the final design shall be cleaned out by the Design-Builder, maintaining the original line and grade, hydraulic capacity or construction of the facility prior to the final acceptance of the Project.

2.8 Traffic Control Devices

The Project shall include all Traffic Control Devices (TCD), including temporary and permanent installation of the following: signage, guardrail, and pavement markings/markers. All TCD designed and installed under the Project shall be in accordance with standards and references in Part 2, Section 2.1. The Signing and Pavement Marking Plans, Transportation Management Plan (TMP), including Temporary Traffic Control/ Public Information and Traffic Operations Plans are required from the Design-Builder for final approval by VDOT and shall be included as a planned work package. The Design-Builder shall comply with the Special Provision for Personnel Requirements for Work Zone Traffic Control.

All existing TCD impacted by the Project shall be modified, upgraded, or replaced by the Design-Builder to meet current VDOT standards.

2.8.1 Traffic Signals

The traffic signals shall include, but not be limited to foundations, traffic signal poles, signal heads, conduit system, circuitry, detection devices, signal cabinets and control equipment, and signal related signing. Pedestrian indications and pushbuttons shall be installed at the following signalized intersections:

- Rte. 5 (New Market Road) & South Laburnum Avenue – Crossing the north leg of South Laburnum Avenue
- Rte. 5 (New Market Road) & Willson Road – Crossing the north leg of Wilson Road
- Rte. 5 (New Market Road) & Strath Road – Crossing the north leg of Strath Road

2.8.1.1 Requirements for Traffic Signals

Plan Sheet Requirements – The Design-Builder shall prepare signal plans at a scale of 1” = 25’. The Design-Builder shall complete an existing as-built of the existing signals. All existing signal equipment including conduit runs and wiring shall be included on the plan.

Signal Timings – VDOT will provide the existing signal timings and phasing plans to the Design-Builder for all existing signals. Any signal timing adjustments necessary during construction shall be handled by the Design-Builder. Forty-eight (48) hours prior to any adjustments, VDOT shall be notified with the nature of the changes and when they are to be implemented. The Design-Builder shall notify VDOT prior to any planned traffic shifts or signal timing changes associated with the maintenance of traffic during construction. Subject to VDOT review and approval, the final signal timings and phasing plans for the entire corridor with all of the signals running in coordination shall be developed and implemented by the Design-Builder. Design-Builder will provide a Vissim analysis software file and all related documentation for the signal timings to VDOT as part of the approval process. Timing information should be compatible with the controllers being used in the system.

Existing Signal Equipment – The existing signal poles and signal cabinet/controller at the three intersections listed above shall remain.

The Design-Builder shall provide a design of the trail for the northwest corner of the Rte. 5 (New Market Road) & South Laburnum Avenue intersection that does not impact the existing signal pole, controller & cabinet, junction box, and all conduit/wiring connecting to this equipment.

Existing Junction Boxes – Any existing junction box that is located in a cut section or in the proposed trail shall be replaced with a new junction box. Any existing junction box that is located in a fill section may be replaced with a new junction box or adjust the existing junction box to match the proposed grade.

If the Design-Builder proposes to adjust an existing junction box, the adjustment shall be accomplished by removal of the electrical junction box cover and using pavement rings or adjustment rings to attain the proposed finished grade and then reinstalling of the existing

junction box cover. The Design-Builder shall protect the existing conduit and conductor cables during the work and reattach the grounding conductor to the frame after installation of the pavement or adjustment ring. The Design-Builder shall then install a new concrete collar as shown in the VDOT Road & Bridge Standards.

Junction Boxes – Junction boxes to be replaced shall be replaced with a junction box of a similar size. Junction boxes shall conform to VDOT Standard JB-S2 or JB-S3. All junction boxes shall be located outside of the paved limits of the trail.

Pedestrian Accommodations – VDOT Standard SP-9 pedestrian signal heads and pushbuttons shall be installed at the pedestrian crossings listed above. All pedestrian signal head sections shall be made of nonferrous metal. All pushbuttons shall be accompanied by a R10-3e (Countdown Pedestrian) sign.

Pedestrian Wiring – Fourteen (14) AWG – seven (7) conductor wires shall be provided for each pedestrian signal head. Fourteen (14) AWG – two (2) conductor wires shall be provided for each pedestrian pushbutton.

Spare Wires – All unused wires in the signal heads shall be capped individually with crimp type caps.

Existing Signal Wiring – If a conduit run has to be replaced due to minimum cover or construction impacts, then all wiring in that conduit run shall be replaced. All wires shall be continuous from the signal head to the controller (no splices will be allowed). If the signal head wires have to be replaced, fourteen (14) AWG – seven (7) conductor wires shall be provided for each three (3), four (4) and five (5) section traffic signal head. If loop wires have to be replaced, fourteen (14) AWG – two (2) conductor shielded wires shall be provided for each loop. If wiring to advance flashers has to be replaced, twelve (12) AWG – four (4) conductor wires shall be provided.

Splice Kits – If loop wires have to be replaced, the Design-Builder shall utilize splice kits that shall be packaged containing materials from a single supplier and shall consist of a plastic molded body with a two-part epoxy that provides a water-resistant seal and insulation for the conductor cables for at least 600 volts. All splices shall be located in a junction box.

Conduits – The Design-Builder shall use PVC or high density PE conduit for all underground installations. All exposed conduit shall be constructed of galvanized rigid steel. The minimum conduit size shall be two (2) inch diameter. However in all roadway crossings the minimum conduit size shall be three (3) inch diameter. Existing conduits may have a fill capacity of less than forty (40) percent. All proposed conduits shall have a fill capacity of less than twenty-five (25) percent. All existing conduits to be re-used shall have a minimum of eighteen (18) inches cover. If the minimum cover cannot be achieved then the conduit shall be replaced and installed according to VDOT Standard ECI-1.

System Grounding – The Design-Builder shall verify that all existing conduits that will remain in service or be re-used under this project contain an electric grounding conductor (EGC). If an EGC does not exist, then the Design-Builder shall connect the EGC to the existing signal grounding system. The Design-Builder shall also verify that all existing junction boxes that will remain in service contain a grounding electrode as shown in VDOT standard JB-S1, S2, S3. If a grounding electrode does not exist, then the Design-Builder shall install one and connect it to the existing signal grounding system.

Removal and Dispose of Existing Equipment – All cable, conduit, junction boxes and all other equipment not salvaged that is no longer necessary as a result of this project shall be disposed of by the Design-Builder. Any existing signal conduit that remains after construction shall be capped and abandoned and all signal cables removed and disposed of by the Design-Builder. All abandoned junction boxes shall be removed and the area restored.

Notification – The Design-Builder shall notify Mr. Eugene Moss with VDOT CRO Asset Management at (804) 840-7627 at least forty-eight (48) hours prior to working on the existing signal equipment or beginning any construction of signal work.

Final Inspection and Acceptance – VDOT will perform a final inspection once all signal work has been completed. All issues with the signal equipment or workmanship shall be resolved prior to the Department assuming maintenance of the signal.

Additional Traffic Control Device requirements include:

- Design – The Design-Builder shall develop Traffic Control Device (TCD) designs that are not in conflict with existing and proposed utilities (both overhead and underground).
- Designation – The Design-Builder shall be responsible for locating and marking all underground utilities prior to any TCD installation work. In addition to Miss Utility of Virginia designation, at least seventy-two (72) hours prior to beginning TCD installation work, the Design-Builder shall contact VDOT Central Region Operations (CRO) Asset Management at (804) 524-6592 to determine the extent and location of all VDOT owned underground traffic signal equipment.
- Testing of Electrical Service Grounding System – The Design-Builder shall test the electrical service grounding system for each electrical service in accordance with Section 700.04 of the 2007 VDOT Road and Bridge Specifications. Along with the Quality Assurance Manager, a representative from VDOT CRO Asset Management shall witness the testing of the system. The Design-Builder shall contact VDOT CRO Asset Management at (804) 840-7712 at least seventy-two (72) hours prior to the intended testing to arrange the testing dates and times.

2.8.2 Signs

The Project shall include all required modifications to existing signs and sign structures that are affected by the Project and all required new signs and sign structures. All guide signs shall be designed using the Clearview font in accordance with Traffic Engineering Memorandum TE-337. For existing structures, when replacing signs that display Series E Modified font, the Clearview 5WR font is an option. Any signs on adjacent roadways that require relocation/ replacement due to construction activities shall be the responsibility of the Design-Builder. An existing sign inventory shall be completed prior to site demolition in accordance with the VDOT Traffic Engineering Design Manual. The inventory shall include any signs that may be affected by the Project. This existing information shall be submitted at the same time as the first plan submittal for proposed signing. The Design-Builder shall accomplish the sign panel design using GUIDSIGN software. Flashers are not required at the Route 5 crossings.

2.8.3 Pavement Markings / Markers

The Design-Builder shall provide and install all required pavement markings and raised snow-plowable pavement markers according to VDOT's standards and policies. All final markings shall be Thermoplastic. All temporary marking are to be Class II and the Type shall be in accordance with Section 512.03 (i) of the 2007 VDOT Road and Bridge Specifications. An approved pavement marking plan for the Project is required.

2.8.4 Guardrail

The Design-Builder shall ensure that the clear zone within the Project limits is free from hazards and fixed objects. In the event that removal or relocation of hazard and fixed objects from the clear zone is not feasible, the Design-Builder shall design and install all necessary guardrail, fixed object attachments, end treatments and any incidental guardrail items. If an existing guardrail run is impacted by the Project, then the entire run shall be upgraded to the current standards. Additionally, the Design-Builder shall provide a copy of the manufacturer's recommendations for installation of all guardrail terminals and shall contact the VDOT Project Manager two (2) weeks prior to the installation of guardrail for a site review.

2.9 Transportation Management Plan (TMP)

The Design-Builder shall develop and incorporate a Transportation Management Plan (TMP) in accordance with the requirements of L&D Memorandum IIM-241.5. VDOT has determined this Project to meet the criteria for a Type A project. The TMP documents how traffic will be managed during the construction of the Project. The Design-Builder shall coordinate all work in accordance with the approved TMP. The TMP shall address safe and efficient operation of adjacent public transportation facilities and State Highways and shall reflect the Project's Scope of Work and all applicable 2007 VDOT Standards and Specifications regarding time of work. The Design-Builder will be responsible for any changes to the TMP that result from any changes required during

construction that affect any part of the TMP. The TMP shall incorporate and address the following elements at a minimum:

2.9.1 Temporary Traffic Control Plans

The Design-Builder shall develop and deliver Temporary Traffic Control Plans, which will detail all phases of work, proposed road closures, maintenance of traffic through the work area and all construction accesses for approval by VDOT. Each Phase shall include a narrative, which describes the Sequence of Construction to be used.

The Temporary Traffic Control Plans shall extend an appropriate distance beyond the construction tie-in locations to allow for the required length of any traffic shifts.

Construction signs shall be installed, maintained, adjusted, and removed as necessary by the Design-Builder throughout the duration of the Project.

Minimum traffic lane widths: maintain a minimum of eleven (11) foot lanes on all routes, unless approved by VDOT.

The following time restrictions shall be used:

- No lanes can be closed and no flagging operations can be conducted between 6:00 am to 9:00 am and 3:00 pm to 6:00 pm.

Any request to close a lane or perform a flagging operation outside the above requirements shall be submitted to the VDOT Project Manager for approval, at least two (2) weeks prior to the planned work. The Design-Builder shall provide two (2) days advance notice prior to beginning any planned lane closure. The Design-Builder shall ensure that the Richmond “Transportation Operation Center” (TOC) is notified when lane closures or flagging operations are in place and again when they are removed.

A minimum width of one (1) foot shall be maintained between the edge of the traffic lane and any Traffic Barrier Service, Concrete.

Reductions in the speed limits within the work zones on any roadway shall be reviewed and approved by the VDOT CRO Engineer in accordance with TE-350.1. The Design-Builder must complete a “Work Zone Speed Analysis” and provided it to the VDOT Project Manager for any reductions in the speed limits to be considered.

All work zone traffic control including preparatory or exploratory work to any existing facilities including, but not limited to, geotechnical investigations shall follow the 2011 Virginia Work Area Protection Manual.

2.10 Right of Way

The Offeror's conceptual design included in their proposal shall be wholly contained within the right of way limits shown on the RFP preliminary design plans, with the exception of temporary construction, permanent drainage, and utility easements. Utility easements have not yet been identified or shown on the RFP preliminary design plans. Deviations from the proposed right of way limits shown on the RFP preliminary design plans will be subject to VDOT approval in accordance with Part 1 (Instruction to Offerors), Section 2.8 and 2.9.

The Design-Builder's final design shall also be contained with the right of way limits shown on the RFP Conceptual Plans. The Design-Builder's final design shall be contained within the right of way limits shown on the RFP Conceptual Plans. If the Design-Builder proposes to exceed the right of way limits shown on the RFP Conceptual Plans, then this shall be consider a deviation of the Contract Documents and shall be addressed as described in Part 2, Section 2. As discussed herein, the Design-Builder shall be responsible for any time and/or cost impacts and any NEPA document re-evaluation associated with Design-Builder's design changes that extends beyond the right of way limits reflected in the RFP Conceptual Plans and approved by VDOT.

The Design-Builder, acting as an agent on behalf of the Commonwealth of Virginia (Commonwealth), shall provide all right of way acquisition services for the Project's acquisition of fee right of way and permanent, temporary and utility easements including survey plats. Right of way acquisition services shall include certified title reports, appraisal, appraisal review, negotiations, relocation assistance services and parcel closings, to include an attorney's final certification of title or title insurance. The Design-Builder's lead right of way acquisition consultant shall be a member of VDOT's prequalified right of way contracting consultants (listed on VDOT's website) and the Design-Builder's right of way team shall include VDOT prequalified appraisers and review appraisers (also listed on VDOT's website). VDOT will retain authority for approving the scope of the appraisal and the appraiser, just compensation, relocation benefits, and settlements. VDOT must issue a Notice to Commence Right of Way Acquisition to the Design-Builder prior to any offers being made to acquire the property. This represents a hold point in the Design-Builder's Baseline Schedule. VDOT must also issue a Notice to Commence Construction to the Design-Builder once the property has been acquired and prior to commencing construction on the property. This also represents a hold point in the Design-Builder's Baseline Schedule. The Design-Builder will **NOT** be responsible for the right of way acquisition costs. As used in this RFP, the term "right of way acquisition costs" means the actual purchase price paid to a landowner for right of way, including fee, any and all easements, and miscellaneous fees associated with closings as part of the Project. All right of way acquisition costs will be paid by VDOT, and shall not be included in the Offeror's Price Proposal. Notwithstanding the foregoing provision, should additional right of way (whether fee or easements) be required to accommodate Design-Builder's unique solution and/or Contractor's means, methods and resources used during construction above and beyond the right of way limits depicted on the conceptual plans included in the RFP Information Package, then all right of way acquisition costs for such additional fee or easements shall be paid by the Design-Builder. These costs would include (but not be limited to) the costs of any public hearings that may be required, actual payments to

property owners and all expenses related to the additional acquisitions and associated legal costs as well as any additional monies paid the landowners to reach a settlement or to pay for a court award. In the event additional right of way is needed as a result of an approved scope change request by the Design-Builder, the Design-Builder shall follow the procedures indicated in the “Right of Way Acquisition Guidelines” (Chapter 5 of VDOT’s Right of Way Manual of Instructions; <http://www.virginiadot.org/business/row-default.asp>). Additionally, the Design-Builder is solely responsible for any schedule delays due to additional right of way acquisition associated with the Design-Builder’s design changes and no time extensions shall be granted.

The following responsibilities shall be carried out by either the Design-Builder or VDOT as specified in each bulleted item below:

- The Design-Builder shall acquire property in accordance with all Federal and State laws and regulations, including but not limited to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (the Uniform Act) and Titles 25.1 and 33.1 of the 1950 Code of Virginia, as amended. The acquisition of property shall follow the guidelines as established by VDOT and other State and Federal guidelines that are required and the VDOT Right of Way Manual of Instructions and the VDOT Utility Manual of Instructions, as well as IIM-LD-243.4 and Chapter 12 of the VDOT Survey Manual, which require individual plats to be prepared and recorded with each deed, easement agreement, certificate or other instrument relating to the acquisition of any interest in real property required for this Project. All conveyance documents for the acquisition of any property interest shall be accompanied by properly marked plan sheets and profile sheets.
- The Design Builder may not employ the use of Rights of Entries until the property owner has been made a bona fide offer to acquire the property.
- If the Design Builder and/or the Right of Way sub-consultant does not follow 49 CFR Part 24 Uniform Relocation and Real Property Acquisition Act of 1970 (The Uniform Act) in the performance of the acquisition and/or relocation processes, or fails to obtain or create any mandatory written documentation in their right of way parcel file, the Design Builder shall be responsible for any and all expenses determined to be ineligible for reimbursement of federal funding (80% of amount).
- VDOT shall designate a hearing officer to hear any Relocation Assistance appeals. VDOT agrees to assist with any out of state relocation by persons displaced within the rights of way by arranging with such other state(s) for verification of the relocation assistance claim.
- VDOT will entertain the use of relocation incentive plans on projects with significant numbers or critical relocations. Such incentive plans shall be presented to VDOT for approval. If VDOT approves the incentive plan, it will seek Federal Highway Administration approval. Any relocation incentive plan shall be uniformly administered so

that all landowners and displaces of a similar occupancy receive fair and equitable treatment. Under no circumstances is a relocation incentive to be used without VDOT's prior approvals.

- VDOT will entertain the use of protective leasing to ensure the availability of housing or apartments for relocation purposes. Such protective leasing plans must be presented to VDOT for approval prior to their implementation.
- Section 33.1-134 of the Code of Virginia, 1950, as amended, provides that the Commissioner of Highways may acquire lands on which graves are located through either voluntary conveyance or condemnation. In the course of relocating such graves, the Commissioner of Highways, through the Office of the Attorney General, will appoint an attorney to prepare the Order and Petition for the exhumation and re-interment of the graves. The Design Builder shall be responsible for verifying the number of graves, locating next of kin if possible, acquiring new grave sites and managing the grave relocations as outlined in Chapter 3.4.7 of the Right of Way Manual of Instructions dated January 1, 2011.
- The Design-Builder shall submit a Project specific Acquisition and Relocation Plan to VDOT for VDOT Right of Way approval prior to commencing right of way activities. No offers to acquire property shall be made prior to the Acquisition and Relocation Plan approval and a Notice to Commence Acquisition. This represents a hold point in the Offeror's CPM Schedule. The Acquisition and Relocation Plan shall describe the Offeror's methods, including the appropriate steps and workflow required for title examinations, appraisals, review of appraisals, negotiations, acquisition, and relocation, and shall contain the proposed schedule of right of way activities including the specific parcels to be acquired and all relocations. The schedule shall include activities and time associated with VDOT's review and approval of just compensation, relocation benefits and administrative settlements. The plan shall allow for the orderly relocation of displaced persons based on time frames not less than those provided by the "Uniform Act." This plan shall be updated as necessary during the life of the Project and all updates must be submitted to VDOT for approval. The plan approval is based on the Plan providing a reasonable and orderly workflow and the plan being provided to the VDOT Representative as completed.
- A VDOT Representative will be available to make timely decisions concerning the review and approval of just compensation, approval of relocation benefits, approval of administrative settlements and approval of closing or condemnation packages on behalf of VDOT. The VDOT Representative is committed to issuing decisions on approval requests within twenty-one (21) days. This commitment is based on the plan providing a reasonable and orderly workflow and the work being provided to the VDOT representative as complete. Submission of documents requiring VDOT approval shall contain the necessary language and certifications as shown on the examples provided in the Appendix to Chapter 10, "Special Projects", of the Right of Way Manual.

- The Design-Builder shall obtain access to and use VDOT’s Right of Way and Utilities Management System (RUMS) to manage and track the acquisition process. RUMS will be used for Project status reporting; therefore, entries in RUMS shall be made at least weekly to accurately reflect current Project status. VDOT standard forms and documents, as found in RUMS, will be used to the extent possible. Training in the use of RUMS and technical assistance will be provided by VDOT.
- The Design-Builder shall provide a current title examination (no older than sixty (60) days) for each parcel at the time of the initial offer to the landowner. Each title examination report shall be prepared by a VDOT approved attorney or Title Company. If any title examination report has an effective date that is older than sixty (60) days, an update is required prior to making an initial offer to the landowner. A Title Insurance Policy in favor of the Commonwealth of Virginia in form and substance satisfactory to the VDOT shall be provided by the Design-Builder, for every parcel acquired by voluntary conveyance.
- The Design-Builder shall submit a scope of work detailing the type of appraisal to be prepared for each parcel and the name of the proposed appraiser for VDOT review and approval in writing prior to commencing the individual parcel appraisal. The proposed appraiser shall be of an appropriate qualification level to match the complexity of the appraisal scope. The Design-Builder shall prepare appraisals in accordance with VDOT’s Appraisal Guidelines. The reviewer shall be approved by VDOT and shall be on VDOT’s approved fee appraiser list. VDOT shall issue a final approval of all appraisals.
- Payment documentation is to be prepared and submitted to VDOT with the Acquisition Report (RW-24). VDOT will process vouchers and issue State Warrants\checks for all payments and send to the Design-Builder, who will be responsible for disbursement and providing indefeasible title to VDOT. The Design-Builder shall make payments of benefits to property owners for negotiated settlements, relocation benefits, and payments to be deposited with the court.
- The Design-Builder shall prepare, obtain execution of, and record documents conveying title to such properties to the Commonwealth of Virginia and deliver all executed and recorded general warranty deeds to VDOT. Prior to the recordation of any instrument, VDOT shall review and approve the document. For all property purchased in conjunction with the Project, title will be acquired in fee simple (except that VDOT may, in its sole discretion, direct the acquisition of a right of way easement with respect to any portion of the right of way) and shall be conveyed to the “Commonwealth of Virginia, Grantee” by a VDOT-approved general warranty deed, free and clear of all liens and encumbrances, except encumbrances expressly permitted by VDOT in writing in advance of deed recordation. All easements, except for private utility company easements shall be acquired in the name of “Commonwealth of Virginia, Grantee”. Private utility company easements will be acquired in the name of each utility company when the private utility company has prior recorded easements.

- Because these acquisitions are being made on behalf of the Commonwealth, VDOT shall make the ultimate determination in each case as to whether settlement is appropriate or whether the filing of an eminent domain action is necessary, taking into consideration the recommendations of the Design-Builder. When VDOT authorizes the filing of a certificate, the Design-Builder shall prepare a Notice of Filing of Certificate and the certificate assembly. All required documents necessary to file a certificate shall be forwarded along with a prepared certificate to the VDOT Project Manager. Once reviewed, the certificate will be forwarded to Central Office for review and approval. VDOT will execute the certificate, provide the money as appropriate and will return the assembly to the Design-Builder. The Design-Builder shall update the title examination and shall file the certificate.
- When VDOT determines that it is appropriate, the Design-Builder shall be responsible for continuing further negotiations for a minimum of sixty (60) days, in order to reach settlement after the filing of certificate. After that time the case will be assigned to an outside attorney appointed by VDOT and the Office of the Attorney General. When requested, the Design-Builder shall provide the necessary staff and resources to work with VDOT and its attorney throughout the entire condemnation process until the property is acquired by entry of a final non-appealable order, by deed, or by an Agreement After Certificate executed and approved by VDOT and the appropriate court. The Design-Builder will provide updated appraisals (*i.e.*, appraisal reports effective as of the date of taking) and expert testimony supporting condemnation proceedings upon request by VDOT. Services performed by the Design-Builder or its consultants after an eminent domain action is assigned to an outside attorney will be paid, if and when necessary, under a Work Order in accordance with Article 9 of Part 4 (General Conditions of Contract).
- The Design-Builder will be responsible for all contacts with landowners for rights of way or construction items.
- The Design-Builder shall use reasonable care in determining whether there is reason to believe that property to be acquired for rights of way may contain concealed or hidden wastes or other materials or hazards requiring remedial action or treatment. When there is reason to believe that such materials may be present, the Design-Builder shall notify VDOT within three (3) calendar days. The Design-Builder shall not proceed with acquiring such property until they receive written notification from VDOT.
- During the acquisition process and for a period of three (3) years after final payment is made to the Design-Builder for any phase of the work, and until the Commonwealth of Virginia has indefeasible title to the property, all Project documents and records not previously delivered to VDOT, including but not limited to design and engineering costs, construction costs, costs of acquisition of rights of way, and all documents and records necessary to determine compliance with the laws relating to the acquisition of rights of way and the costs of relocation of utilities, shall be maintained and made available to VDOT for inspection

and/or audit. This also would apply to the Federal Highway Administration on projects with federal funding. Throughout the design, acquisition and construction phases of the Project, copies of all documents/correspondence shall be submitted to both the Central Office and respective Regional Right of Way Office.

- Prior to Project completion, the Design-Builder shall provide and set VDOT RW-2 right of way monuments within the Project limits.
- Any existing fencing impacted by the Design Builder's design and construction activities shall be restored or replaced in the same configuration relative to the improvements as the existing fencing. Any new VDOT fencing shall be Std. FE-CL.

2.11 Utilities

The Design-Builder shall be responsible for the relocation of all utilities required for the construction of the Project and shall be responsible for the coordination of construction activities with all utility owners that may be affected. The Design-Builder shall be responsible for coordinating the work of the Design-Builder, its subcontractors and the various utilities. The resolution of any conflicts between utilities and the construction of the Project shall be the responsibility of the Design-Builder. No additional compensation or time will be granted for any delays, inconveniences, or damage sustained by the Offeror or its subcontractors due to interference from utilities, utility owners or the operation of relocating utilities. Any utility betterments shall not be included in the Offeror's Price Proposal but shall be reimbursed to the Design-Builder through agreement with the requesting utility owner. The Offeror shall contact each utility owner prior to submitting bids to determine the scope of each utility owner's relocation.

The approximate location of utilities are indicated in the project survey that is included in the RFP Information Package; however, the Design-Builder shall be responsible for utility designations, utility locates (test holes), conflict evaluations, cost responsibility determinations, utility relocation designs, utility relocations and adjustments, utility reimbursement, replacement land rights acquisition and utility coordination required for the Project. The Design-Builder shall be responsible for all necessary utility relocations and adjustments to occur in accordance with the accepted Baseline Schedule. All efforts and cost necessary for utility designations, utility locates (test holes), conflict evaluations, cost responsibility determination, utility relocation designs, utility relocations and adjustments, utility reimbursements, and utility coordination shall be included in the Offeror's Price Proposal. The compensation paid to landowners for replacement land rights will be paid by VDOT as part of right of way acquisition costs and shall **NOT** be included in the Offeror's Price Proposal.

The Design-Builder shall make all reasonable efforts to design the Project to avoid conflicts with utilities, and minimize impacts where conflicts cannot be avoided.

The Design-Builder shall initiate early coordination with all utilities located within the Project limits. The Design-Builder shall identify and acquire any replacement utility easements needed for all

utilities necessary for relocation due to conflicts with the Project.

The Design-Builder shall provide all utility owners with project design plans as soon as the plans have reached a level of completeness adequate to allow them to fully understand the project impacts. The utility owner will use the Design-Builder's design plan for preparing relocation plans and estimates. If a party other than the utility owner prepares relocation plans, there shall be a concurrence box on the plans where the utility signs and accepts the relocation plans as shown.

The Design-Builder shall coordinate and conduct a preliminary review meeting with all affected utility owners to assess and explain the impact of the Project. VDOT's Project Manager and Regional Utilities Manager (or designee) shall be included in this meeting.

The Design-Builder shall verify the prior rights of each utility's facilities if claimed by a Utility owner. If there is a dispute over prior rights with a utility, the Design-Builder shall be responsible for resolving the dispute. The Design-Builder shall prepare and submit to VDOT a Preliminary Utility Status Report within one hundred and twenty (120) days of the Date of Commencement that includes a listing of all utilities located within the project limits and a conflict evaluation and cost responsibility determination for each Utility. This report shall include copies of easements, plans, or other supporting documentation that substantiates any compensable rights of the utilities. The Design-Builder shall obtain the following from each utility that is located within the project limits: relocation plans including letter of "no cost" where the utility does not have a compensable right; utility agreements including cost estimate and relocation plans where the utility has a compensable right; letters of "no conflict" where the utility's facilities will not be impacted by the Project.

Design-Builder shall review all relocation plans to ensure that relocations comply with the VDOT Utilities Manual and VDOT's Land Use Permit Regulations. The Design-Builder shall also ensure that there are no conflicts with the proposed roadway improvements, and ensure that there are no conflicts between each of the utility's relocation plans. The Design-Builder shall prepare and submit all relocation plans to VDOT for approval. The Design-Builder shall assemble the information included in the relocation plans in a final and complete form and in such a manner that VDOT may approve the submittals with minimal review. The Design-Builder shall meet with VDOT's Regional/District Utilities Office within forty-five (45) days of the Date of Commencement to gain a full understanding of what is required with each submittal. The Design-Builder shall receive written approvals from VDOT prior to authorizing utilities to commence relocation construction. The utilities shall not begin their relocation work until authorized by the Design-Builder. Each relocation plan submitted shall be accompanied by a certification from the Design-Builder stating that the proposed relocation will not conflict with the proposed Project and will not conflict with another utility's relocation plan.

At the time that the Design-Builder notifies VDOT that the Design-Builder deems the Project to have reached Final Completion, the Design-Builder shall certify to VDOT that all utilities have been identified and conflicts have been resolved and that those utilities with compensable rights or

other claims related to relocation or coordination with the Project have been relocated and their claims and compensable rights satisfied or shall be satisfied by the Design-Builder.

The Design-Builder shall accurately show the final location of all utilities on the as-built drawings for the Project.

It is the Design-Builder's responsibility to verify whether other utility owners exist within the project limits. Known utility owners and their respective contact numbers are identified below for reference only and may not be limited to the following:

Comcast

Mr. Gordon Mower (804-640-4322)
5401 Staples Mill Road
Richmond, VA 23228

Dominion Virginia Power

Mr. Rick McDonald (804-775-5236)
OJRP 9th Floor
701 East Cary Street
Richmond, VA 23219

Verizon Virginia LLC Telephone

Mr. Mike Ziegler (804-772-7306)
2600 Brittons Hill Road 1st Floor
Richmond, VA 23230

Henrico County, Public Utilities Water

Mr. Dennis Farmer, P.E. (804-501-4977)
P.O. Box 90775
Henrico, VA 23272

City of Richmond Gas

Mr. Nick Georges (804-646-8321)
Department of Public Works
900 E. Broad St., Suite 704
Richmond, VA 23219

Woodlawn Communications LLC Fiber Optic

Mr. Robert Payne (804-798-3214)
11006 Cobbs Road
Glen Allen, VA 23059

Windstream Telecommunications

Mr. Jerry Richardson (804-422-4258)
2134 W. Laburnum Avenue
Richmond, VA 23227

AT&T Telecommunications

Mr. Gary Wigfield (301-865-3877)
11026 Fingerboard Road
Monrovia, MD 21770

Level 3 Communications

Mr. Rich Eldreth (757-777-7719)
2600 Eltham Ave.
Norfolk, VA 23513

Traffic Control:

Mr. Eugene Moss (804-524-6592)
Virginia Department of Transportation
2430 Pine Forest Drive
Colonial Heights, VA 23834

2.12 Landscape Architecture

A final Landscaping Plan for the Project shall be prepared by a Virginia certified or licensed Landscape Architect and shall be submitted to the VDOT Project Manager for review and approval. Minimally, the final design shall incorporate the species and naturalized themes (layout) indicated in the planting plans prepared for the Sherwood Forest Section of the Virginia Capital Trail located in Charles City County (Plans included in the RFP package), including but not limited to, perennial bulbs, native flowering trees and evergreens. All landscaping shall be in accordance with the Guideline for Planting Along Virginia's Roadways dated March 2007 and FHWA 23 CFR 752 Landscaping and Roadside Development and with the following:

- All plant materials shall be native or indigenous to the area and can adapt and survive in roadside environments being both salt and drought tolerant.
- Selected plants should require no maintenance once established. The plants shall be warranted for a period of one (1) year (beginning with the final acceptance of the planting operation) and maintenance for that warrantee period shall conform to Section 605 of the 2007 VDOT Road and Bridge Specifications and Special Provisions for Planting Operations Plan.
- The landscaping and architectural features shall be compatible with the existing landscape adjacent to the project site and may reflect historic and cultural features of the area.

- Shade trees shall be one and one half (1 ½) inches to two (2) inches caliper, ball and burlaped or container grown and be planted where there is adequate space for the tree to grow to maturity.
- Native flowering trees shall be minimally eight (8) feet in height, ball and burlaped and in clump form if available for the particular species.
- Plant sizes and root ball condition, center spacing and density of plantings along the trail shall minimally conform to the project plans identified above.
- Offerers shall assume that landscaping will be located within the proposed right-of-way.
- The roadside development sheet shall include native seed mix for warm season grasses and wildflowers in areas along no-mow slopes.

2.12.1 Safety Fencing

The cross sections for the Project shall be analyzed in accordance with the VDOT Road Design Manual for the proper location and use of Safety Fencing along the trail and at approaches to bridge structures. Safety Fencing shall be constructed with preservative treated wood, grade marked 2 or better, and shall be located with the face of the fence rail at a minimum of three (3) feet from the edge of the trail. The fencing shall conform to the fencing that was installed by others on the section of trail previously constructed in Charles City County and shall be in accordance with the design indicated in the preliminary design plans included in the RFP Information Package. Fence end sections shall be flared away from the trail.

2.12.2 Trail Intersections with Roadways

When the trail intersects with a roadway, the trail shall be divided (bifurcated) in accordance with the design indicated in the preliminary design plans included in the RFP Information Package. To accomplish this, the median areas created by the division shall be paved with concrete pavers as indicated on the plan details for the preliminary design plans that are included in the RFP Information Package and in accordance with the Special Provisions for Unit Pavers.

2.13 Quality Assurance / Quality Control (QA/QC)

The Design-Builder shall submit its Quality Assurance/Quality Control (QA/QC) for both design and construction to VDOT at the meeting held after the Date of Commencement as set forth in Part 4 General Conditions under Section 2.1.2. Along with the QA/QC Plan submittal, the Design-Build Project Manager and Quality Assurance Manager (QAM) shall provide a presentation of the QA/QC Plan for both design and construction utilizing Project related scenarios. Project scenarios shall include, but not be limited to:

1. Situation arising requiring the issuance of a Non-Conformance Report and subsequent review of the report, including completion of corrective measures and the issuance of a Notice of Correction of non-conformance work with proper log entries and proper interface with auditing and recovery requirements as set forth in Section 5.10 of the January 2012 QA/QC Guide for nonconforming work resulting from:

- a. defective equipment
- b. construction activities/materials which fail to conform as specified;
2. Application for payment for Work Package which includes work element, including review and approval by Quality Assurance Manager; and
3. Measures that will be implemented to ensure compliance with Buy America requirements on the Project.

2.13.1 Design Management

The Design-Builder shall be responsible for design quality in accordance with VDOT's Minimum Requirements for Quality Assurance and Quality Control on Design-Build and Public-Private Transportation Act Projects (January 2012 QA/QC Guide). The Design-Build Project Manager shall be responsible for establishing and overseeing the QA/QC program for all pertinent disciplines involved in the design of the Project, including review of design, working plans, shop drawings, specifications, and constructability of the Project. This individual shall report directly to the Design-Builder's Project Manager, and is responsible for all of the design, inclusive of QA and QC activities. Members of the Design QA and QC team are responsible for review of all design elements to ensure the development of the plans and specifications are in accordance with the requirements of the Contract Documents. Design QA should be performed by one or more member(s) of the lead design team that are independent of the Design QC. The Project design control plan will provide VDOT assurance that the design plans and submittals will meet all contract requirements.

Appendix 2 of the January 2012 QA/QC Guide provides minimum requirements that shall be met for development of the Design QA/QC Plan.

The Design Manager shall maintain close communication with Design-Builder's Project Manager and shall ensure the Project is completed in accordance with the requirements of the Contract Documents. The Design Manager shall perform all of the design oversight reviews. VDOT will participate in these reviews. Under this procedure, the Design Manager shall provide VDOT with draft design plans for review and approval to confirm that the design work complies with the requirements of the Contract Documents, especially Section 2.4 of the General Conditions of Contract and the Standard and Reference Documents listed in Section 2.1.1 herein prior to initiation of construction activities on the Project. Additionally, The Design Manager shall include a completed Design Build Certification of Plan Correctness Form when submitting plans for Right of Way Approval or Construction Approval.

2.13.2 Construction Management

The Design-Builder shall develop, operate, and maintain a Construction QA/QC Plan in accordance with VDOT's January 2012 QA/QC Guide. The Design-Builder shall have the overall responsibility for both the QA and QC activities and shall be responsible for all QA activities and QA sampling and testing for all materials used and work performed on the Project. These QA functions

shall be performed by an independent firm that has no involvement in the construction QC program/activities. There shall be a clear separation between QA and construction, including separation between QA inspection and testing operations and construction QC inspection and testing operations, including testing laboratories. Two independent, AMRL certified testing laboratories will be required, one for QA testing and one for QC testing.

The Quality Assurance Manager (QAM) shall have the authority to enforce the Contract requirements, when deficient materials or unsatisfactory finished products fail to conform to Contract requirements. The QAM, in accordance with his/her assignment, shall be responsible to observe the construction in progress and to ensure the QA and QC testing and inspection is being performed in accordance with the Contract requirements. The Design-Builder shall establish and maintain a Quality Assurance Auditing and Nonconformance Recovery Plan (AR Plan) for uniform reporting, controlling, correction and disposition and resolution of nonconformance (including disputed nonconforming items) issues that may arise on the Project. The Design-Builder's AR Plan shall establish a process for review and disposition of nonconforming workmanship, material, equipment or other construction and design elements of the Work including the submittal of the design review process for field changes. All deficiencies (hereinafter referred to as a Non-Conformance), including those pertaining to rules, regulations, and permit requirements, shall be documented by the QAM. A Non-Conformance Report (NCR) referenced by a unique number, shall be forwarded to the Contractor and VDOT within 24 hours of discovery of the Non-Conformance. Non-conformance procedures are provided in Section 5.10.5 of the January 2012 QA/QC Guide.

The Design-Builder will also be responsible for providing QA and QC testing for all materials manufactured off-site, excluding the items listed below:

- Prestressed Concrete Structural Elements (beams, girders (VDOT adopted Bulb-T sections), and piles).
- Structural Steel Elements (beams and girders).
- Pipe (concrete, steel, aluminum and high density polyethylene) for culverts, storm drains and underdrains.
- Precast Concrete Structures.
- Asphalt Concrete Mixtures.
- Aggregate (dense and open graded mixes).
- Metal Traffic Signal and Light Poles and Arms

VDOT will provide plant QA and plant QC inspection and/ or testing of these items. In the event that VDOT determines that materials fail to meet the tolerances in the Road and Bridge specifications, a NCR will be issued by the VDOT Project Manager and addressed to the Design-Builder's QAM for resolution. The Design-Builder is required to submit documentation of the source of materials, including the source of each material to be incorporated into the project and the acceptance method that will be used for the material. A VDOT Form C-25 may be used to meet this requirement; however, the Design-Builder is required to submit a VDOT Form C-25 for all materials

that VDOT retains responsibility for testing. The source of materials, C-25 is for informational purposes only and will not be approved or rejected by VDOT since it is the Design-Builder's responsibility to obtain materials that meet the contractual requirements. The Design-Builder will be responsible for providing QA and QC testing of all off-site materials that are not identified above, including materials obtained from off-site soil borrow pits.

The Design-Builder's QAM shall report directly to the Design-Builder's Project Manager and be independent of the Design-Builder's physical construction operations. The QAM shall establish quantities prior to commencing construction, and provide VDOT a total number of QC, QA, Independent Assurance (IA), Independent Verification Sampling and Testing (IVST), Owner's (the Department) Independent Assurance (OIA), and Owner's Independent Verification Sampling and Testing (OIVST) tests required as a result of the quantities and the sampling and testing requirements as set forth in Tables A-3 and A-4 of the January 2012 QA/QC Guide. VDOT will provide all OIA and OIVST tests and, therefore, final determination of the actual number of OIA and OIVST tests to be performed will be made by VDOT based on these quantities.

The QAM shall be responsible for the QA inspection and testing of all materials used and work performed on the Project to include: observing the Contractor's QC activities, maintaining the Materials Notebook (including adherence to the Special Provision for Design-Build Tracking (DBT) numbers included in the RFP Information Package-CD-ROM), documentation of all materials, sources of materials and method of verification used to demonstrate compliance with the Contract requirements. This includes all materials where QA testing is to be performed by VDOT. The QAM shall be vested with the authority and responsibility to stop any work not being performed according to the Contract requirements. The construction QA and QC inspection personnel shall perform all of the construction inspection, sampling and testing work in accordance with the Contract requirements. This includes the documentation of construction activities and acceptance of manufactured materials. The QAM shall assign a Lead QA Inspector to the Project prior to the start of construction. This individual, who must be on the site for the duration of construction of the Project, shall be responsible to observe construction as it is being performed, to include all QC activities to ensure inspection and testing, and correction of any non-conformities of the Work are being performed in accordance with the Contract requirements. If needed, the Lead QA Inspector shall be supported by other QA inspectors under his/her direction to ensure all construction work and QC activities are being observed. The Lead QA Inspector shall report directly to the QAM.

All sampling and testing should be performed by a laboratory that is accredited in the applicable AASHTO procedures by the AASHTO Accreditation Program (AAP). For test methods not accredited by AAP, the laboratory must comply with AASHTO R18 (most current Edition) and must be approved by the Department at its sole discretion. Two independent testing laboratories will be required, one for QA testing and one for QC testing. The entity(ies) performing QA operations, inspections, sampling and laboratory testing and the entity(ies) performing QC operations, inspections, sampling and laboratory testing shall be unique and independent from one another.

All construction QA and QC personnel shall hold current VDOT materials certifications when testing hydraulic cement concrete, asphalt concrete, soils and aggregate, pavement markings and for the safety and use of nuclear testing equipment, as required by the Road and Bridge Specifications. The QA programs must be performed under the direction of the QAM. The QC programs should be performed under the direction of the Construction Manager. Substitution of Construction Manager and the QAM shall require VDOT approval. In addition, VDOT shall have the right to order the removal of any construction QA and QC personnel to include the QAM and the Construction Manager for poor performance at the sole discretion of the VDOT Project Manager. The QA/QC plan shall include rapid reporting of non-compliance to the VDOT Project Manager, and the remedial actions to be taken as discussed in Section 105.12 of Part 5.

The Design-Builder shall provide, prior to Final Application for Payment, a complete set of Project records that include, but are not limited to, the following:

- Project correspondence
- Project diaries (in electronic format)
- Test reports
- Invoices
- Materials Notebook
- Certified survey records
- DBE/EEO records
- Warranties
- Maintenance Manual
- As-Built and Record Documents
- Special Tools, etc.

2.14 Plan Preparation

2.14.1 Geopak and MicroStation

When the Design-Builder is given the Date of Commencement, they will be furnished with the following software and files which run in WindowsNT or WindowsXP only: Geopak (current version used by VDOT), MicroStation (current version used by VDOT) and VDOT Standard Resources Files, and all the design files used to develop the preliminary design including aerial images and survey files.

2.14.2 Software License Requirements

VDOT shall furnish license(s) for all the software products VDOT makes available to the Design-Builder. The License(s) will be supplied upon request by the Design-Builder, based on the data provided on a completed Software License Form, LD-893, and subsequently reviewed and approved by the VDOT Project Manager.

All License(s) are provided for use on the Project detailed on the request and only for the duration specified for that Project. Any approved revision to the Project schedule will be taken into consideration in adjusting the time the license(s) are available. Justification for the number of license(s) requested **MUST** include the estimated number of total computer hours for the task of design, detailing, relating project management and other computer based engineering functions requiring the software requested.

The appropriate use of all license(s) provided to the Design-Builder will become the responsibility of the Design-Builder regardless of who on the team uses the license(s). The Design-Builder shall be responsible for keeping track of the license(s) provided to them or a team member and the prompt return of the license(s) and removal of the software from any system used solely for the project for which it was obtained.

2.14.3 Drafting Standards

All plans shall be prepared in U.S. customary units and in accordance with the most recent version of the VDOT's Road Design Manual, Vol. I, VDOT's CADD Manual and VDOT's I&IMs and VDOT's Manual of Structure and Bridge Division, Vol. V, Part 2, Design Aids and Typical Details.

2.14.4 Electronic Files

The Design-Builder shall submit all plans (Right of Way and/or Construction submittals, Released for Construction, and As-Builts) in electronic format using the provided MicroStation CADD software. Files shall be submitted in both DGN and PDF formats, by way of VDOT's Falcon Consultant environment. The Design-Builder will complete form LD-443, the Falcon System Access and Security Agreement and form LD-894, the Falcon Access Request Form, for access to the Falcon Consultant environment. VDOT will furnish electronic files of all applicable standard detail sheets upon request by Design-Builder. The files will use standard VDOT cell libraries, level structures, line types, text fonts, and naming conventions as described in the most recent version of the VDOT CADD Manual and VDOT's Manual of the Structure and Bridge Division, Vol. V - Part 2, Design Aids and Typical Details. Files furnished to Design-Builder in electronic format shall be returned to VDOT and removed from Design-Builder and its designer's computer equipment upon completion of this Project.

2.14.5 Plan Submittals

In addition to electronic files as described in Section 2.14.4 above, the Design-Builder shall prepare and distribute hard copy paper plans in the quantities as specified below, for each of the following deliverables (at a minimum, as other submittals and/or work packages may be necessary or desired):

- Right of Way Plans
- Released for Construction Plans
- Right of Way and/or Construction Revisions
- Record Plans (As-Built)
- Approved Shop Drawings
- Design Calculations

The Right of Way and/or Construction plans may be submitted for approval in logical subsections (such as from bridge to bridge) or consisting of work packages such as: 1) clearing and grubbing along with erosion and siltation control, 2) grading and drainage, 3) final roadway, and 4) traffic control. Individual bridge plans may be submitted in logical components such as: 1) foundation, 2) remaining substructure, and 3) superstructure. A submittal schedule and planned breakdown of work packages shall be submitted to VDOT for review and approval as part of the planned Project Baseline schedule.

Right of Way and/or Construction Plans shall be accompanied by 1) a VDOT LD-436 checklist filled out as appropriate for the specific submittal, and 2) a written notice signed by the Design-Build Design Manager that includes the following:

- The logical subsections or work packages for which review and approval is being requested
- Confirmation that the submittal has been checked and reviewed in accordance with the Design-Builder’s approved QA/QC plan.
- Confirmation that the submittal either meets all requirements of the Contract Documents and Reference Documents or that any deviations from the Contract Documents and Reference Documents have been identified and previously approved by VDOT.

The Design-Builder shall submit all Right of Way and/or Construction plans to VDOT and FHWA simultaneously, for review and approval. VDOT shall receive six (6) full-size sets and two (2) half-size sets of each submission, with the exception of the Released for Construction Plans (see Section 2.14.9 below). FHWA shall receive one (1) half-size sets of each submission. The plan submissions shall be delivered to the following addresses:

VDOT

Address: Virginia Department of Transportation
523 North Washington Highway
Ashland, VA 23005

Attention: Keith M. Rider, P.E.

FHWA

Address: Federal Highway Administration – Virginia Division
P.O. Box 10249
Richmond, VA 23240

Attention: Vanna P. Lewis, P.E.

VDOT and FHWA shall have the right to review all Right of Way and Construction Plans and provide comments regarding compliance with the requirements of the Contract Documents and Reference Documents. The Design-Builder shall be responsible for satisfying all such comments. Formal responses to VDOT and FHWA comments shall be provided in subsequent submittals.

VDOT and FHWA have the right to disapprove any design approach that is not in compliance with the requirements of the Contract Documents and Referenced Documents.

VDOT's written approval of any deviations from requirements of the Contract Documents and Reference Documents shall be attached to the plans submitted for review.

2.14.6 Right of Way Plans

Right of Way Plans and any associated Design Calculations shall be submitted to VDOT and FHWA simultaneously for review. The time frame for plan review and approval shall be in accordance with the requirements of the Contract Documents. All VDOT and FHWA comments must be adequately addressed before the Right of Way Plans will be approved. Notice to Commence Right of Way Acquisition will be granted in accordance with Section 2.10 above. The Design-Builder shall be responsible for the design details and ensuring that the design and right of way acquisition work are properly coordinated.

2.14.7 Construction Plans

Construction Plans, and any associated Design Calculations, shall be submitted to VDOT and FHWA simultaneously for review. The time frame for plan review and approval shall be in accordance the requirements of the Contract Documents. All VDOT and FHWA comments must be addressed to the satisfaction of the commentator before Construction Plans are recommended for approval to the Chief Engineer. This plan milestone includes plans that may be submitted as soon as sufficient information is available to develop Construction Plans for certain portions or elements of the Project (or work packages). The Design-Builder shall meet commitments for review and approval by other entities/agencies as specified in other portions of the RFP and its attachments. The Design-Builder shall be responsible for the design details and ensuring that the design and construction work are properly coordinated.

2.14.8 Released for Construction Plans

Released for Construction Plans are those that are issued for construction after approval by VDOT’s Chief Engineer. Notice to Commence Construction will only be issued by the VDOT Project Manager upon approval of the Construction Plans (or Work Packages) by the Chief Engineer.

The Released for Construction Plans shall be distributed simultaneously to VDOT and FHWA. VDOT shall receive two (2) full-size set and two (2) half-size sets of Released for Construction Plans, along with all electronic files. FHWA shall receive one (1) half-size hard copy sets, along with all electronic files, of the Released for Construction Plans. The plans shall be delivered to the following addresses:

Virginia Department of Transportation
Attention - Keith M. Rider, P.E.
523 North Washington Highway
Ashland, VA 23005

Federal Highway Administration
Attention – Vanna P. Lewis, P.E.
P.O. Box 10249
Richmond, VA 23240

2.14.9 Record (As-Built) Plans

The final plan milestone is Record (As-Built) Plans. As-Built Plans shall be prepared, signed and sealed by a Professional Engineer licensed in Virginia, and submitted to VDOT with the final application for payment. These plans will show all adjustments and revisions to the Construction Plans made during construction and serve as a permanent record of the actual location of all constructed elements.

2.15 Public Involvement/Relations

A Public Hearing was held for the Varina Phase of the Virginia Capital Trail in June 2012 and the Commonwealth Transportation Board approved its location in September 2012.

The Design-Builder shall be responsible for providing a point of contact and phone number for VDOT to use when gathering information to respond to a citizen or media inquiry regarding this Project. The Design-Builder shall also be responsible for coordinating the preparation and release of any public information (includes flyers to residents) with VDOT’s Richmond District Office of Public Affairs:

During the Design and Construction Phases:

- The Design-Builder will participate with VDOT in informal meetings with affected local citizen groups and businesses as necessary and as directed by the VDOT Project Manager.

Any meetings held will be in accordance with the VDOT Policy Manual for Public Participation in Transportation Projects, updated July 2009.

- The Design-Builder shall provide VDOT’s Richmond District Office of Public Affairs with written information about the Project at least twice a month that will be posted on VDOT’s external website. This information will include a project overview, plan of work for the coming month, potential traffic impacts, overall project schedule, contact information and updated project photos.

During the Construction Phase:

- The Design-Builder shall provide VDOT’s Richmond District Office of Public Affairs with written information about the Project’s scheduled impact on traffic (such as previously approved lane closures or detours) no less than 48 hours for lane closures and one week for ramp or road closures before the traffic impact is scheduled to occur. This information may be used by VDOT to issue news traffic alerts to the public.

2.16 Monthly Progress Meetings

The Design-Builder shall participate in monthly progress meetings. During such meetings, progress during the prior month and anticipated progress for the following month shall be reviewed. The Design-Builder shall collect information from any key subcontractors/sub-consultant responsible for work completed during the previous month and work scheduled during the upcoming month. These meetings shall be attended by the design-build Project Manager, construction manager, QAM and design manager, as well as other key personnel from the design and construction firms defined within the Design-Builder’s proposal as well as VDOT representatives designated by the VDOT Project Manager. Meetings will occur monthly beginning the first month after the issuance of the Notice to Proceed. The Design-Builder shall be responsible for preparing, maintaining and distributing minutes of the meetings to all attendees for review. The meeting minutes shall be provided to VDOT within two calendar days of the day the monthly progress meeting was held.

2.17 Virginia Occupational Safety and Health Standards

The Project shall comply with Virginia Occupational Safety and Health Standards in accordance with Section 110.05 of the Division I Amendments to the Standard Specifications.

At a minimum, all personnel of the Design-Builder shall comply with the following, unless otherwise determined unsafe or inappropriate in accordance with OSHA regulations:

- Hard hats shall be worn while participating in or observing all types of field work when outside of a building or outside of the cab of a vehicle, and exposed to, participating in or supervising construction.

- Respiratory protective equipment shall be worn whenever an individual is exposed to any item listed in the OSHA Standards as needing such protection unless it is shown the employee is protected by engineering controls.
- Adequate eye protection shall be worn in the proximity of grinding, breaking of rock and/or concrete, while using brush chippers, striking metal against metal or when working in situations where the eyesight may be in jeopardy.
- Approved high visibility Safety apparel shall be worn by all exposed to vehicular traffic and construction equipment.
- Standards and guidelines of the current Virginia Work Area Protection Manual shall be used when setting, reviewing, maintaining, and removing traffic controls.
- Flaggers shall be certified in accordance with the Virginia Flagger Certification Program.
- No person shall be permitted to position themselves under any raised load or between hinge points of equipment without first taking steps to support the load by the placing of a safety bar or blocking.
- Explosives shall be purchased, transported, stored, used and disposed of by a Virginia State Certified Blaster in possession of a current criminal history record check and a commercial driver's license with hazardous materials endorsement and a valid medical examiner's certificate. All Federal, State and local regulations pertaining to explosives shall be strictly followed.
- All electrical tools shall be adequately grounded or double insulated. Ground Fault Circuit Interrupter (GFCI) protection must be installed in accordance with the National Electrical Code (NEC) and current Virginia Occupational Safety and Health agency (VOSH). If extension cords are used, they shall be free of defects and designed for their environment and intended use.
- No person shall enter a confined space without training, permits and authorization.
- Fall protection is required whenever an employee is exposed to a fall six feet or greater.

END OF PART 2
TECHNICAL INFORMATION & REQUIREMENTS