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PART 2

TECHNICAL INFORMATION & REQUIREMENTS

1.0 DESIGN-BUILDER’S SCOPE OF WORK

1.1 Project Description

The project is located on Route 35 in Southampton County, west of the Town of Courtland. The major features are to replace the existing structurally deficient bridge over the Nottoway River with a new two lane bridge and limited roadway approach work. The project begins approximately 0.1 miles west of the Southampton County Line and ends approximately 0.4 miles west of the Southampton County Line and is approximately 0.3 miles long. However, it is noted that this description and length are approximate only and is based on the preliminary plans prepared by the Department. The final project length may vary depending upon the Offeror’s final; however, any change in the project limits requires approval by VDOT.

A conceptual design has been developed and made available for public review via a Design Public Hearing held on February 7, 2013. The major design features of the Project were approval by the Chief Engineer on June 28, 2013. The conceptual design contained in the RFP Information Package reflects a basic line, grade, typical sections, potential locations of stormwater management ponds, 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.

The Project includes, but is not limited to: (a) complete demolition and removal of the existing bridge crossing the Nottoway River; (b) construction of a new bridge across the Nottoway River; (c) construction of retaining walls (permanent and temporary) which may be required for bridge structure and roadway approaches; (d) reconstruction of Route 35; (e) drainage; (f) storm water management; (g) pavement markings, signs and guardrail; (h) right of way acquisition; (i) utility relocations; (j) Transportation Management Plan; (k) erosion and sediment control; (l) stakeholder coordination; (m) providing quality assurance and quality control, and (n) overall project management.

1.2 Anticipated Scope of Work

The scope of work to be undertaken by the Design-Builder under the design-build contract for this Project will be identified in the RFP. This work includes, among other things all work required to support the design and construction of: (a) roadway; (b) bridge; (c) environmental (d) geotechnical; (e) hydraulics; (f) traffic control devices; (g) right-of-way; (h) utilities; (i) lighting (j) public involvement/relations (k) quality assurance and quality control; (l) construction engineering and inspection; and (m) overall Project management, and any other items listed in Section 1.1 above. Descriptions and technical requirements of the anticipated work are set forth in Part 2, Section 2.
1.3 Anticipated Design Services

Design services shall address all items necessary for construction and operation of the completed facility. Design services are anticipated to include, but are not limited, those services necessary to produce roadway and bridge construction plans relative to the technical activities listed in Part 2, Section 1.2 above. Other data collection and technical studies anticipated include, but are not necessarily limited to: surveying, geotechnical investigation, borings and analysis, materials analysis, pavement design, foundation and embankment design, additional environmental studies, lighting and other context sensitive solutions, and hydraulic and hydrologic analysis. Offerors should note that all work performed on this Project shall be completed using English Units.

1.4 Anticipated Environmental Services

In accordance with the National Environmental Policy Act (NEPA), the DesignBuilder will comply with all environmental commitments during design and construction as identified in the Categorical Exclusion (CE) dated July 12, 2012. The Design Builder shall acquire all water quality permits for the Project in the Design-Builder’s name (i.e. the Design-Builder will be the “Permitee”) and shall provide for any necessary stream and/or wetland compensation required by permits to accomplish the work.

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

Any changes in scope or project footprint from that contained in the Contract Documents proposed by the Design-Builder, which are acceptable to VDOT, may require additional environmental technical studies and analysis. The Design-Builder will be responsible to perform any additional environmental studies or analysis to support the Design-Builder’s proposed changes in scope or footprint at their cost. VDOT will be responsible for the coordination and preparation of NEPA document re-evaluations with FHWA to address those changes. The Design-Builder shall carry out any additional environmental commitments that result from such coordination at its sole expense and at no additional cost and/or time delays to the Project.

The Design-Builder shall be responsible for fulfillment of conditions and commitments throughout design and construction, as described in Part 2, Section 2 of this RFP. Offerors should note that the Design-Builder will be solely responsible for any schedule delays and associated costs as described in Part 2, Section 2 of this RFP due to deviations from these clearances; no time extensions will be granted.
1.5 **Anticipated Right of Way and Utilities**

The Offeror’s conceptual design included in their proposal shall be wholly contained within the right of way limits shown on the RFP Conceptual Plans, with the exception of temporary construction, permanent drainage, and utility easements (other than permanent drainage easements for stormwater management facilities). Utility easements have not yet been identified or shown on the RFP Conceptual Plans. Deviations from the proposed right of way limits shown on the RFP Conceptual 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 Plan, with the exception of temporary construction, permanent drainage, and utility easements (other than permanent drainage easements for stormwater management facilities). 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’s services shall include all work necessary for right-of-way acquisitions and to perform utility coordination, relocations, and/or adjustments as required by the Project. All right-of-way acquisition costs (compensation paid to landowners for right-of-way or permanent easement) will be paid by VDOT, and shall not be included in the Offeror’s Price Proposal. 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 and must meet Buy America requirements as described in Part 5, Exhibit 102.05(g.1) *Use of Domestic Material*.

1.6 **Anticipated Construction Services**

The construction services to be undertaken by the Design-Builder for this Project are anticipated to include, but are not limited to: earthwork, roadway, bridge and structures (including all necessary excavation, foundation work, substructure work, and superstructure work), retaining walls, demolition and removal of existing structures, drainage, lighting & context sensitive solutions, utility relocations/adjustments and coordination, survey control, transportation management plan, traffic control devices, erosion and sediment control, and compliance with all environmental requirements, commitments and permit conditions, as described in Part 2, Section 2 of this RFP. The Design-Builder shall provide construction engineering inspection and management, quality assurance and quality control, including plant quality assurance inspection and testing, but excluding items listed under Part 2, Section 2.14.2.

2.0 **PROJECT TECHNICAL INFORMATION & REQUIREMENTS**
The Offeror’s proposed conceptual design included in their proposal shall meet all requirement of the RFP Document. Any proposed deviations from the requirements of the RFP Documents by the Offerors shall be in accordance with Part 1 (Instruction to Offerors), Sections 2.8 and 2.9.

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 Design-Builder shall follow the Value Engineering Proposals (VEP) process as described in Section 104.02 of Division I Amendments to the Standard Specifications (Part 5) (even though the proposed deviations may not qualify as a VEP), unless otherwise directed by VDOT. Ultimately, any modification to the Contract Documents requires VDOT approval.

2.1 References and Information

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. The Design-Builder must verify and use the latest version of the documents listed herein as of the date of the RFP or latest Addenda. The Design-Builder must meet or exceed the minimum roadway design standards and criteria.

2.1.1 Standards and Reference Documents

If during the course of the design, the Design-Builder determines that a specific Standard, Specification or Reference Document is required but is not listed herein, it is the responsibility of the Design-Builder to identify the pertinent Standard, Specification, or Reference Document and submit 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.
(a) Standards and Specifications

- 2011 Virginia Supplement to 2009 MUTCD
- 23CFR625 – Design Standards for Highways
- 23CFR650 Subpart C - National Bridge Inspection Standards (“NBIS”), Subsection 650.301 or the latest revision(s)
- AASHTO Guide for Protective Screening of Overpass Structures, 1990
- AASHTO Guide Specifications for Structural Design of Sound Barriers
- Americans with Disabilities Act Accessibility Guidelines for State and Local Government Facilities
- Corps of Engineers EM-1110-2-1906, Laboratory Soils Testing, 1986
- DCR Technical Bulletin 1 (http://dcr.state.va.us/soil_and_water/documents/tecbltn1.PDF)
• Engineering Properties of Clay Shales, Report 1 by W. Heley and B. N. McIver
• FHWA 23CFR752 Landscaping and Roadside Development
• FHWA’s Mitigation Strategies for Design Exceptions, July 2007
• FHWA’s Standard Highway Signs including Pavement Markings and Standard Alphabets, 2004 Edition and 2012 Supplement (For use with the 2009 Manual on Uniform Traffic Control Devices for Streets and Highways), or most current Edition
• FHWA Evaluating Scour at Bridges HEC-18, 5th Edition including revisions
• Guideline for Context Sensitive Solutions/Design, February 25, 2004
• IEEE National Electric Safety Code (NESC) Standards
• IES RP-08-00, American National Standard for Roadway Lighting
• IES RP-19-01, Roadway Sign Lighting
• Manual of Uniform Traffic Control Devices (“MUTCD”), 2009 Edition and latest updates as of date of release of RFP or applicable addenda
• NCHRP Report 350 Recommended Procedures for the Safety Performance Evaluation of Highway Features
• Transportation Research Board Highway Capacity Manual, 2010 Edition
• VDOT Appraisal Guidelines
• VDOT Asbestos Inspection Procedures, May 14, 2004
• VDOT Asbestos Project Monitoring and Clearance Air Monitoring Procedures, May 14, 2004
• VDOT CADD Manual, 2012 (including all revisions)
• VDOT Construction Inspection Manual, April 2008
• VDOT Construction Manual, 2005 (including July 2008 revisions)
• VDOT Drainage Manual, Revised July 2012 (including current Errata Sheet)
• Virginia Department of Game and Inland Fisheries Policies and Procedures, 2012.
• VDOT Guardrail Installation Training Manual (“GRIT”), May 2012
• VDOT Guide Manual for Causes and Repair of Cracks in Bridge Decks, dated September 25, 2009
• VDOT Guidelines for 1993 AASHTO Pavement Design, Revised May 2003
• VDOT Hydraulic Design Advisories (all current)
• VDOT Instructional & Information Memorandums (“I&IM”), All Divisions
• VDOT Land Use Permit Regulations, 24 VAC 30-151, March 17, 2010
• VDOT Manual of Instruction for Material Division, including revisions through May 2012
• VDOT Manuals of Structure and Bridge Division, Vol. V
• VDOT Materials Division Approved List, dated October 2012
• VDOT Materials Division Memorandum Number MD299-07 for Materials Acceptance, October 4, 2007
• VDOT Manual of Instructions for the Materials Division ("MOI") 2011, including all revisions
• VDOT Policy for Integrating Bicycle and Pedestrian Accommodations
• VDOT Policy Manual for Public Participation in Transportation Projects, updated November 2012
• VDOT Right of Way Manual of Instruction (January 2011, including July 2011 revisions)
• VDOT Road and Bridge Specifications, 2007 (all except Section 100), including all revisions
• VDOT Road and Bridge Standards, Vol. 1 and Vol. 2, 2008, including all revisions
• VDOT Road Design Manual, Vol. I, including all revisions
• VDOT Survey Manual, 2013 Edition, including all revisions
• VDOT Traffic Engineering Design Manual, 2011
• VDOT Traffic Engineering Division Numbered Memoranda (Traffic Engineering (TE) and Mobility Management (MM))
• VDOT Utilities Manual of Instruction (January 2011, including February 2011 revisions)
• VDOT Virginia Work Area Protection Manual, 2011 Edition (including all revisions)
• VDOT’s Minimum Requirements for Quality Assurance & Quality Control on Design Build and Public-Private Transportation Act Projects, January 2012
• VDOT’s Project Management Policy PMO-Policy-2011-1, July 1, 2011
• VDOT’s SWM Program Update by Roy Mills, dated February 3, 2012 (including revisions to current date) (Revised)
• VDOT’s Stormwater Program Advisory 12-01, dated April 5, 2012
• VDOT’s Stormwater Program Advisory 12-02, dated April 26, 2012

(b) Reference Manuals

• American National Standards Institute (ANSI)/Insulated Cable Engineers Association (ICEA) S-87-640-2006 requirements
• American Water Works Associations Standards
• American Welding Society Standards
• Bellcore/Telcordia Standards
• Bridge Welding Code: AASHTO/AWS-D1.5M/D1.5: 2008
• 2009 AASHTO Interim glNT Manual
• Field Partnering Guide for VDOT Projects, November 2005
• FHWA publications HDS-6, HEC-11, HEC-14, HEC-15, HEC-18, HEC-20, HEC-22, and HEC-23 l
• Institute of Electrical and Electronics Engineer (IEEE) Standards
• International Mechanical Code
• International Telecommunication Union (ITU) Requirements
• ISEE Blasters Handbook (Current Edition)
• National Electrical Manufacturers Association (NEMA) Standards
• National Transportation Communications for ITS Protocol (NTCIP)
• Society for Protective Coatings (SSPC) Standards
• Telecommunications Industry Association (TIA) and Electronic Industries Alliance (EIA) Standards and Specifications
• U.S. Department of Agriculture Rural Utilities Service (RUS) 7 CFR 1755.900
• Underwriters Laboratories (UL) Standards
• VA Statewide Fire Prevention Code (referenced in Special Provision for Section 107.11 - Use of Explosives)
• VDOT Land Use Permit Regulations Guidance Manual, Revised November 8, 2011
• Virginia Calibration Methods, June 2011
• Virginia State Noise Abatement Policy, July 13, 2011
• Virginia Test Methods Manual, June 2010
• Virginia Uniform Statewide Building Code

(c) Special Provisions List, Special Provision Copied Notes and Supplemental Specifications

Federal:
• c100ai03 General Project Requirements, Supplemental Specifications (SSs), Special Provisions (SPs) and Special Provision Copied Notes (SPCNs), 12-1-2011 (SPCN)
• S100B00 Project Communication and Decision Making for Design-Build Projects, January 3, 2005c, Reissued August 2009
• SS51202 Supplemental Section 512—Maintaining Traffic Design-Build Projects, December 2, 2009

Environmental:
• Special Provision for Asbestos Removal and NESHAP-Related Demolition Requirements for Structures on Design-Build Projects, June 22, 2009
• Special Provision for Inspection of Structures for Asbestos Containing Material (ACM) on Design-Build Projects, June 22, 2009

Geotechnical/Materials:
• S302B00-0708 Special Provision for Restoring Existing Pavement, January 14, 2008c
• SPCN c109g02-0611 Polymer Modified (PG 76-22 and PG 70-28) Asphalt Cement Adjustment, May 5, 2011
• SPCN c211gg0-0609 Warm Mix Asphalt Pavement, December 7, 2009
• SPCN c211hg0-1209 Polishing Aggregate in Asphalt Concrete, October 7, 2009
• SPCN c315gg0-0609 Warm Mix Asphalt Pavement, December 7, 2009
• Special Provision for Design-Build Tracking (“DBT”) Numbers, December 8, 2009
• Special Provision For Elastic Inclusion, November 24, 2009
- Supplemental Section 404 - Hydraulic Cement Concrete Operations, December 17, 2010
- Special Provision for Jack and Bore for DB Projects, October 13, 2009
- Special Provision for Lime Modification of Soils for DB Projects, November 23, 2009
- Special Provision for Low Permeability Concretes For Design-Build Projects, September 6, 2009
- Special Provision for Micro Tunneling for DB Projects, September 14, 2009
- Supplemental Section 515, Planing or Milling Pavement, September 27, 2011
- Special Provision for Section 315 – Asphalt Concrete Pavement, November 25, 2009
- Special Provision for Section 317 – Rideability of Stone Matrix Asphalt Concrete Pavement, June 28, 2012
- Special Provision – Section 248 — Stone Matrix Asphalt Concrete, April 1, 2012
- Soil Design Parameters for Sound Barrier Walls, Retaining Walls and Non-Critical Slopes, April 14, 2011
- SS20701-1210, Supplemental Section 207 – Select Material, December 3, 2009c
- SS30505-0911, Supplemental Section 303 – Earthwork, May 20, 2011c
- SS31704-1210 Supplemental Section 317 – Stone Matrix Asphalt (“SMA”), October 13, 2010

Roadway/Drainage:
- SPCN c302h00-0708 Precast Drainage Structures, January 14, 2008
- Special Provision for Flowable Backfill, March 11, 2010
- Special Provision for Right of Way Monumentation and Final Boundary Stakeout, December 2, 2009a
- Special Provision for Section 244 – Roadside Development Materials, August 29, 2008
- Special Provision for Pipe Culvert Replacement or Rehabilitation, March 26, 2008
- SS30203-0412 Supplemental Section 302 – Drainage Structures, January 24, 2012
- S107G01-0309 Storm Water Pollution Prevention Plan (“SWPPP”) General Permit for the Discharge of Stormwater from Construction Activities Contractor and Subcontractor Certification Statement, February 19, 2009

Structure & Bridge:
- SPCN Demolition Notification for Structures Not Requiring Asbestos Removal, June 25, 2009
- Special Provision for Architectural Finish, Concrete Form Liners, and Color Stain Coating, May 2, 2013
- Special Provision for Corrosion Resistant Reinforcing Steel, May 18, 2012
- Special Provision for Drilled Shafts for DB and PPTA Contracts, November 18, 2009
- Special Provision for Dynamic Pile Testing for End Bearing Piles for LRFD for DB and PPTA Contracts, December 10, 2009
- Special Provision for Dynamic Pile Testing for Friction Piles for LRFD for DB and PPTA Contracts, December 10, 2009
• Special Provision for Micropiles for DB and PPTA Contracts, January 20, 2010
• Special Provision for MSE Walls (Concrete Panel Facing) for Design-Build and PPTA Contracts, December 10, 2009
• Special Provision for MSE Walls (Modular Cantilever Facing) for DB and PPTA Contracts, December 10, 2009
• Special Provision for Quality Assurance/Quality Control (“QA/QC”) for the Construction of Deep Foundation Systems for DB and PPTA Contracts, revised September 13, 2012
• Special Provision for Sound Barrier Walls, March 29, 2013
• Special Provision for Structure Demolition for DB Projects, January 7, 2010
• Special Provision for T-Wall Retaining Wall System for DB and PPTA Contracts, December 10, 2009
• Special Provision for Wave Equation Analysis for LRFD for DB and PPTA Contracts, December 10, 2009
• SS40502-0211 Supplemental Section 405, Prestressed Concrete, dated December 20, 2010
• SS40703-0912 Supplemental Section 407, Steel Structures, dated January 2, 2012
• SS41301-0609 Supplemental Section 413, Dismantling and Removing Existing Structures or Removing Portions of Existing Structures, dated August 5, 2008

Traffic Engineering:
• S704E02-1211 Special Provision for Type B, Class VI Pavement Line Marking, October 21, 2011
• S704F01-1209 Special Provision for Transitory Pavement Markers (“TPM”), December 14, 2009
• SPCN c510am1-1010 Locating, Removing and Disposing of Recessed Pavement Markers and Raised Snow-Plowable Markers, October 17, 2010
• SPCN cu512003a Uniformed Flaggers, September 29, 2008a
• Special Provision for CG-12 Detectable Warning Surface, reissued July 2008c
• Special Provision for Emergency Preemption Equipment for DB Projects, December 2, 2009
• Special Provision for High Tension Cable Barrier System, revised March 28, 2013
• Special Provision for Preformed Thermoplastic Pavement Markings, November 29, 2011b
• Special Provision for Replacement of Pavement Line Markings, Pavement Markers and Loop Detectors, September 27, 2011
• Special Provision for Square Tube Steel Sign Post, March 3, 2008
• Special Provision for Temporary Construction and Permanent Pavement Markings, November 8, 2011
• Supplemental Section 710 – Traffic Signs, January 22, 2009c
• Supplemental Section 703 – Traffic Signals, January 6, 2009
• Special Provision for Decorative Lighting Pole and Luminaire, August 12, 2013
General Conditions:

- Special Provision for Personnel Requirements for Work Zone Traffic Control, June 11, 2009
- Special Provision for Section 301 – Clearing and Grubbing, November 15, 2006
- Special Provision for Field Office, DB Projects, November 24, 2009
- Special Provision for Work Zone Traffic Control Management, Design-Build Projects, revised November 2009
- SS52200 Supplemental Section 522—Partnering Design-Build Projects, revised June 1, 2012

The above list of Special Provisions is not intended to be an all-inclusive list. The Design-Builder is responsible for achieving the Work in accordance with all current VDOT standards as of the date of the RFP issuance, including any revisions and/or addenda thereof. If a construction element is not adequately addressed within VDOT Standard Specifications or the Special Provisions listed for the purpose of the Design-Builders design, it is the responsibility of the Design-Builder to develop an alternative specification that is acceptable to VDOT for that element of work.

In the event of a discrepancy between VDOT and non-VDOT Standards and References listed herein, the VDOT Road and Bridge Specifications, design standards, and manuals shall take precedence, with the following exception. If AASHTO or the MUTCD require that a higher or better standard be applied, then AASHTO and/or the MUTCD shall take precedence. In accordance with Section 2.1.3 below, all deviations from AASHTO minimum specified design values shall be documented, justified, and approved by VDOT and FHWA.

Special Provisions included in this contract document or other Special Provisions approved by VDOT shall govern over the VDOT specifications, design standards and manuals. Special Provision Copied 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.

2.1.2 RFP Information Package

An RFP Information Package is available for interested Offerors on CD for $50. Interested Offerors should complete the RFP Information Package Order Form included as Attachment 2.6 of Part 1. The RFP Information Package includes the following:

- Special Provisions and Special Provision Copied Notes listed in Part 2, Section 2.1.1(c) above
- RFP Conceptual Roadway and Bridge Plans, including electronic reference files Revised August 2013)
- Hydrologic and Hydraulic Analysis for Route 35 over the Nottoway River, dated August 7, 2012 (including HEC-RAS files)
- Documentation of FHWA Review, dated July 12, 2012
• Environmental Certification/Commitments Checklist, dated June 25, 2013
• VDOT Permit Determination, dated May 22, 2013
• Air Quality Analysis Report, dated June 28, 2012
• Geotechnical Engineering Data Report, dated September 17, 2012
• Minimum Pavement Design Recommendations for Design Build Project, dated September 11, 2012
• Supplemental Geotechnical Laboratory Data
• General Geology of Project Area
• gINT Files for Borings and CPTs
• Project Traffic Data, June 22, 2012
• VDOT/VDHR Determination of Eligibility, approved May 15, 2013
• Cultural Resources Summary Report, dated June 5, 2012
• Design Approval
• Letter from Coast Guard to VDOT, dated July 25, 2013
• Fish, Plant, and Wildlife Resources Clearance Report
• Hazardous Materials Summary Report, dated April 26, 2012
• Asbestos Inspection Report for Bridge 1006, dated October 26, 2012
• RFP Parts 3, 4 and 5 with Redline Changes, revised July 2013
• Dominion Virginia Power Email, dated August 2, 2013
• Dominion Virginia Power Email, dated August 13, 2013
• Project Design Revisions Impact on NEPA Document, dated October 29, 2012
• Noise Form, dated July 8, 2011

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

Record bridge plans for this Project, which are not deemed a component of the RFP, can be provided to Offerors upon request. These plans are solely for the information of the Offeror, which each Offeror may use at their own risk and as they deem appropriate. The Department does not represent or warrant that the information contained in the plans is suitable for designing the Project. Offerors interested in obtaining the previously developed record plans should contact the Design-Build POC specified in Part 1, Section 2.5.

2.1.3 Design Exceptions and Design Waivers

There are no anticipated substandard features reflected in the preliminary design. However if during further development of the design the Design-Builder identifies substandard
features, the Design-Builder is required to either eliminate them through design improvements or apply for the appropriate design exceptions and/or waivers. The costs for preparation of design waivers or exceptions and any information needed to support these documents is the responsibility of the Design-Builder. Any schedule delays as a result of the approval process are the responsibility of the Design-Builder.

2.2 Mainline and Other Roadway Improvements

The roadway inventory information and major design criteria are summarized in Attachment 2.2. The information contained in the Attachment shall serve as a basis for the Design-Builder to determine the appropriate criteria to apply to the design of Route 35. Offerors are on notice that the entirety of the information contained in the Design Criteria Table and Section 2.2 of this document including but not limited to the design criteria, and other notes and data, contain the minimum roadway geometric design requirements that the Design-Builder shall meet in its performance of the Work. By submitting its Proposal, Offeror certifies that the Project Concept presented in its proposal is fully compliant with such minimum requirements. Unless otherwise approved by VDOT, no changes to or deviation from the listed criteria shall be allowed. Any schedule delays as a result of changes or deviations are the responsibility of the Design-Builder.

2.3 Structures and Bridges

2.3.1 General

The Project includes construction of a new bridge and demolition of the existing bridge and substructure. A bridge geometric typical section depicting VDOT’s proposed concept is included in the RFP Conceptual Plans. The distance from face-to-face of curbs/railings shall be in accordance with Volume V-Part 2, Chapter 6 File No. 06.02-4 for a Rural Collector Road with a Design year ADT over 2,000 vehicles per day.

A preliminary type, size and location plan, including all the proposed stages of construction shall be submitted by the Design-Builder to VDOT for review and approved prior to proceeding with final design. Bridge type and layout shall be based on reducing long-term maintenance costs for VDOT. Detailed demolition and erection plans shall be included with the final design plan submittal.

The bridge span layout, profile grade line and superstructure depth shall be coordinated to provide the required hydraulic opening. The new bridge shall be designed to accommodate a 100 year storm event. The replacement bridge shall utilize a structure section providing vertical clearance that does not increase the 100-yr Flood Stage for the Nottoway River. Bridge design alternatives that indicate an increase the 100-yr Flood Stage of the Nottoway River run the risk of the Department or ACOE not approving the submittal and potential schedule delays. The Design-Builder shall assume all obligations and costs incurred with meeting the H&HA requirements of bridge design alternate submittals and the conditions of permits and certifications.
The bridge for this Project shall be designed using AASHTO LRFD Bridge Design Specifications, 6th Edition, 2012; and VDOT Modifications (I&IM-S&B-80) and the Additional Foundation Criteria (Attachment 2.3). A Coast Guard Bridge Permit is not required for this Project.

The Design-Builder is prohibited from any deviation of VDOT’s bridge standards without allowance granted in this document or prior written approval from VDOT. VDOT’s Standard Details, including VDOT Design Aids, are available from the VDOT Website at http://www.virginiadot.org/business/bridge-manuals.asp. These standards, design aids, and typical details shall be used to the maximum extent possible in the development of the plans.

The proposed structures shall utilize low permeability concrete in accordance with the Special Provision for Low Permeability Concretes for Design-Build Projects.

All reinforcing steel shall be deformed and shall conform to ASTM A615, Grade 60 except for reinforcing steels noted as CRR (corrosion resistant reinforcement). The proposed structure shall utilize CRR in accordance with I&IM-S&B-81. Epoxy coated reinforcing steel shall not be used.

Details and drawings not specifically included in the VDOT Manual of Structure and Bridge Division, Volume V Series may only be included in structural plans and working drawings after review and approval by VDOT. Should any such details not be acceptable, the Design-Builder shall make the necessary modifications or shall submit an alternate detail that is acceptable to VDOT.

Plan Submittal shall be in accordance with IIM-S&B-19 as a Tier 2 Bridge Project. Details provided in technical proposals are not Preliminary Plans. Preliminary Plans and a Preliminary Stage I Report (and all other subsequent bridge plan submittals) shall be developed and submitted to VDOT after award for approval in accordance with the I&IM.

2.3.2 Superstructure

Bridge type and layout shall be based on reducing long-term maintenance costs for VDOT. The use of continuous span units and jointless bridge design technologies shall be used as outlined in the VDOT Manual of the Structure and Bridge Division, Volume V – Part 2 Chapter 17. Joints in bridges may be used only with specific written approval of the Department through a design waiver.

Either prestressed concrete or structural steel beams/girders may be used and shall be designed as composite with the cast-in-place deck. Maximum beam spacing shall be limited to 12’-0”. Bridge deck overhang shall not exceed 0.3 times the beam spacing. The use of asphalt overlays on concrete decks shall not be permitted.

Bridge construction utilizing weathering steel, reinforced concrete, and prestressed concrete are acceptable. The following types of structures and/or types of construction are not permitted: timber, HDPE, aluminum, pre-cast segmental concrete, fracture critical structures,
prestressed AASHTO beam shapes, precast reinforced concrete three-sided structures or four-sided multi-cell boxes, segmental construction of any kind (post-tensioned box beams, segmental precast and/or balanced cantilever construction), steel box pier caps, and steel box “tub” girders.

For prestressed concrete alternatives, the precast concrete Bulb-T sections adopted by VDOT shall be used. AASHTO shapes will not be permitted.

For structural steel alternatives, the material shall be weathering steel if the conditions meet the requirements of the Federal Highway Administration Technical Advisory T5140.22, “Uncoated Weathering Steel in Structures.” Yield strength of steel shall be 50 ksi. Cover plates on continuous rolled beam sections in the negative moment areas and longitudinal stiffeners shall not be used. Other fatigue prone details shall not be used. No field welding to structural steel members, primary or secondary, shall be permitted except as allowed by VDOT Road and Bridge Specifications.

Structural approach slabs will be required at each end of the bridges on this Project. Approach slabs and sleeper pads, if the latter is required, shall conform to the requirement of the VDOT Manual of the Structure and Bridge Division Vol. V – Parts 2 and 3. A sleeper pad will be required when the bridge abutment is either integral or semi-integral.

2.3.3 Substructure

The proposed structure shall be designed to meet all applicable hydraulic requirements, including current FEMA and VDOT guidelines as described in the latest edition of the VDOT Drainage Manual. The Design-Builder shall submit a final Hydrologic and Hydraulic Analysis and a final Scour Analysis for the proposed design as noted in Section 2.8 herein. These analyses shall be submitted to VDOT for approval prior to the Design-Builder’s submission of final construction plans for approval.

When spread footings are proposed, the Offeror shall conform to Section 401 of the VDOT Road and Bridge Specifications 2007, Structure Excavation. The Design-Builder shall ensure that all recommendations related to the suitability of foundation material for spread footings at the time of construction are made in the field by the geotechnical engineer registered and licensed in the Commonwealth of Virginia. Foundation recommendations for the proposed bridge shall be submitted for review and approval prior to the submittal of final foundation construction plans.

When drilled shafts are proposed, the Offeror shall refer to the Special Provision for Drilled Shafts referenced in Section 2.1.1 for design and construction requirements. Steel piles shall not be used in pile bents.

2.3.4 Miscellaneous

A VDOT Standard open parapet/rail shall be used on the bridge. F-shape parapets are not allowed on this Project.
Adequate drainage for the bridge structures must be provided; in particular, the designed system must be able to control and drain water from the deck. Bridge deck drainage analysis and design shall be performed in accordance with the latest version of FHWA Publication HEC21-Design of Bridge Deck Drainage and the VDOT Drainage Manual. All hardware components for the deck drainage system shall conform to requirements of Section 226 of the Specifications, shall be galvanized steel, and shall be designed to minimize maintenance activity (min. 6” diameter pipes or pipes of equivalent areas shall be used) as well as avoid interference with aesthetics of the bridge. Provisions shall be made to provide clean-outs in the pipe and downspout systems. To the extent possible, pipes and downspouts should be hidden or coordinated with the design of the bridge and they should be pitched at four (4) percent or greater slope to achieve self-cleansing velocities.

The Design-Builder shall dismantle and remove the existing structure in accordance with Standard Specifications requirements. The existing structure is designated as a Type B structure in accordance with Section 411 of the Standard Specifications. Reuse of the existing structure including all substructure units for structural support of the new bridge will not be permitted. Removed materials shall become the property of the Design-Builder and shall be removed from the Project. The Design-Builder shall assume all personal and property liability associated with such materials and shall protect and save harmless the Department from any and all damages and claims associated with the handling, transportation, storage, or use of such materials. The Department does not warrant the condition or the physical or chemical characteristics of the materials.

2.3.5 Structure Load Ratings

The following structure load ratings analyses and reports will be required to be submitted to VDOT and approved prior to opening the structures to traffic (whether temporary or permanent traffic configuration) or prior to partial demolition of the existing structure:

1. A load rating is required when a newly constructed structure or phased portion of the new structure intended to carry traffic in a temporary configuration.

2. Load rating of any partial configuration of the existing structure.

3. A Demolition and Temporary Support Plan shall be submitted to VDOT for review and approval prior to the commencement of demolition.

4. A final, As-Built, load rating analysis of each new structure reflecting traffic in its final configuration. This load rating should incorporate any As-Built changes that may have been made, which in the judgment of the Engineer will affect the load rating (e.g., minor changes to stiffener or diaphragm locations may not affect a load rating).

The structural load rating analyses shall be in accordance with VDOT’s Structure and Bridge Division Instructional and Informational Memorandum (“I&IM”) Number I&IM-S&B-86, AASHTO’s Manual of Bridge Evaluation, 2nd Edition, 2011 with 2012 and 2013 Revisions;
and 23CFR650 Subpart C - National Bridge Inspection Standards (NBIS), Subsection 650.301 or the latest revision(s). The Design-Builder shall perform load ratings on bridge superstructures using Load and Resistance Factor Rating method for the NBIS rating, AASHTO HL-93 design loading, the blanket permit vehicle (90K and 115K), Specialized Hauling Vehicles including the Notional Rating Load, and Virginia’s Legal Load vehicles as specified in IIM-S&B-86.

All load ratings for structures shall be performed using AASHTOWare Bridge Rating (Br|R) software, except structures with steel curved girders/beams or structures not capable of being analyzed by Br|R software. Horizontally curved bridges with curved longitudinal steel members shall be evaluated using DESCUS software with rating capability. All other load ratings shall be generated by hand calculations or by use of software approved by VDOT. The structures shall be rated as a system of girders, not as single structural elements (line girder analysis). Bridge Alternatives must be provided so the load rating(s) can be run from the Bridge Explorer in Br|R.

Each load rating report shall contain all deliverables as specified in I&IM-S&B-and shall be sealed and signed by a Professional Engineer licensed in Virginia. This report shall include rating assumptions, pertinent analysis calculations and VIRTIS, DESCUS or other approved computer input as appropriate. In addition, a compact disc (CD) containing the load rating input files for Br|R, DESCUS or other approved computer programs shall be delivered to VDOT with the report. The as-built report for the new bridges shall be submitted to VDOT not later than thirty days after completion of the bridge or prior to opening the structure to traffic, whichever occurs first.

No new structure shall be placed into service if a Load Restriction (Posting) is required based upon the load rating analyses. The Design-Builder is responsible for all remedial measures/corrective action required to provide VDOT a structure which satisfies the load rating requirements outlined in IIM-S&B-86.

2.3.6 Safety and Acceptance Inspection for the Proposed Structures

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

1. A satisfactory safety/inventory inspection by VDOT as described below is required prior to Substantial Completion and opening the structure or portion of the structure to public traffic. This safety/inventory inspection by VDOT will serve as the initial inspection of the structure. Data gathered will include location, date completed, alignment, description, horizontal/vertical clearances, structure element description and condition data, and traffic safety features. Such inspections will be required prior to opening any newly constructed portion or phase of the bridge to traffic.

2. A satisfactory final construction inspection by VDOT is required prior to Final Acceptance of the structure. To facilitate inspection of the structure by VDOT, the Design-Builder shall ensure that all structural elements are accessible and shall provide adequate resources including:
• Man-lifts, bucket trucks, under bridge inspection vehicles, 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. 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 final construction inspection will be performed.

2.3.7 Working Drawings

The Design-Builder shall review and approve working/shop drawings and submit three approved sets to VDOT for each bridge structure. Reference should be made to Article 105.10 of Part 5 of the RFP. The working/shop drawings shall be approved by a registered, licensed, Professional Engineer in the Commonwealth of Virginia.

2.3.8 FHWA Bridge Construction Unit Cost Report

For each bridge, the Design-Builder shall submit Estimated Quantities along with the associated unit costs for all standard and non-standard bridge items in the final bridge plan submittal. The bridge unit cost data is required to complete VDOT’s annual Bridge Construction Unit Cost Report which is required by FHWA. This data should be submitted to VDOT within 90 days of VDOT’s approval of the construction plan submittal.

2.4 Environmental

2.4.1 Environmental Documents

In accordance with the requirements of the National Environmental Policy Act (NEPA), VDOT prepared a Categorical Exclusion (CE) for the Project, which was approved by the Federal Highway Administration (FHWA) on June 27, 2012. VDOT has also completed preliminary document re-evaluations for Right of Way (RW) Authorization (EQ-201) dated June 25, 2013; Plans, Specifications and Estimates (PS&E) Authorization (EQ-200) dated June 25, 2013, and a preliminary Environmental Certification/Commitments Checklist (EQ-103) dated June 25, 2013, which 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 CE, 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 information needed 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 reevaluations associated with Design-Builder’s design changes and no time extensions will be granted. All costs associated with complying with these requirements shall be included in the Offeror’s Price Proposal.

2.4.2 Water Quality Permits and Compensatory Mitigation

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 Permitee. 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’s preliminary Permit Determination for the Project is included in the RFP Information Package. The Design-Builder should note that VDOT’s preliminary Permit Determination is provided for informational purposes only. Regulatory agencies will make the final determination which state/federal water quality permits will be required during coordination with the Design-Builder. The Design-Builder is responsible for ensuring that all wetlands and streams are correctly identified, delineated and confirmed. All impacts in Waters of the US (including streams and wetlands) will be appropriately mitigated via measures that the regulatory agencies determine acceptable. 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.

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.

2.4.3 Threatened and Endangered Species

VDOT has performed preliminary reviews to determine potential effects of the Project on threatened and endangered (T&E) species. The reviews included VDOT GIS Integrator searches for the potential presence of T&E species using a minimum search radius of two miles along the Project corridor. A search (June 27, 2012) in the VDOT GIS Integrator indicated that there are T&E species located in the Project area. The Fish, Plant, and Wildlife Resources Clearance report listing these species is 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.

2.4.4 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. On May 15, 2012, the VA SHPO concurred with the VDOT’s recommendation that there are no historic properties within the project’s Area of Potential Effects (this letter is included in the RFP Information Package) and as such, the project as proposed in the RFP Conceptual Plans will have No Effect on historic properties.

Please note that any changes to the design, alignment, right-of-way limits, or easements beyond the coordinated APE may require review by VDOT 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.

### 2.4.5 Hazardous Materials

All solid waste, hazardous waste, and hazardous materials shall be managed in accordance with all applicable federal, state, and local environmental regulations. A Hazardous Materials Summary Report, dated April 26, 2012 is provided in the RFP Information Package.

Unless a structure has been classified, the Design-Builder shall assume Type B structures are present in the Project rights of way. Disturbance of areas coated with a hazardous material shall require the following submittals to be approved by the VDOT engineer as per Section 411 of the VDOT Road and Bridge Specifications (unless it can be demonstrated that less than 100 square feet of coating will be disturbed): an environmental protection plan and a worker health and safety protection plan. The Design-Builder shall conform to the Special Provision for Dismantling and Removing Existing Structures or Removing Portions of Existing Structures (included in the RFP Information Package).

VDOT performed an Asbestos Inspection on Bridge #1006 and did not identify any positive Asbestos Containing Material (ACM). The Asbestos Inspection Report for Bridge #1006 is provided in the RFP Information Package.

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.

The Design-Build 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-Build 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.

2.4.6 Air Quality

The Project has been assessed for potential air quality impacts and conformity with applicable air quality regulations and requirements. The Air Quality Analysis report, dated June 28, 2012, is provided in the RFP Information Package.

The assessment determined that the Project would meet all applicable air quality requirements of NEPA and the federal transportation conformity regulation. This Project is located within an area that is currently in attainment with all of the National Ambient Air Quality Standards. The Air Quality Analysis describes precautionary requirements and Department of Environmental Quality air pollution regulations applicable to the Project.

2.4.7 Noise Mitigation

The Noise Scoping Decision for this project was that this is a Type III project and that a Noise study is not required. A preliminary noise evaluation was performed by VDOT and a more detailed review shall be completed by the Design-Build during final design. It was determined from the preliminary noise evaluation that no mitigation measures are required for the Project. However, noise abatement measures that were found to be feasible and reasonable during the preliminary noise analysis may not be found to be feasible and reasonable during the final design noise analysis. Conversely, noise barriers that were not considered feasible and reasonable may meet the established criteria and be recommended for construction. A copy of the Noise From Form, dated July 8, 2011, is included in the RFP Information Package.

A Final Design Noise Analysis shall be submitted to VDOT for review and approval. The Final Design Noise Analysis, consisting of a re-analysis of all noise sensitive receptors identified in the project area, will be required to confirm that there are no noise impacts and that no further analysis of noise abatement is required.

The Design Builder is prohibited from deviating on VDOT’s sound wall policy, guidance, or special provisions without allowance granted in this document or prior written approval from VDOT.

The final barrier location(s) and dimension(s) will be determined during the final design noise analysis. A draft Noise Abatement Design Report (NADR) shall be submitted for review and approved prior to the submittal of a final Noise Abatement Design Report (NADR). The NADR shall be conducted by an individual qualified in the field of highway traffic noise impact analysis as noted in Section 3.0 of the Highway Traffic Noise Analysis and Abatement Guidance Manual. The Noise Abatement Design Report (NADR) shall be furnished by the Design Builder at its sole cost and expense. The final noise mitigation design will utilize the design year traffic volumes defined in the Preliminary Noise Analysis Report dated April 2012 unless otherwise directed due to traffic updates. A copy of this report is included in the RFP Information Package.

Final design of noise abatement measures shall be based on the preliminary noise abatement design developed in the preliminary noise analysis as noted in Section 10.5 of the Highway Traffic Noise Analysis and Abatement Guidance Manual.

Upon approval of the Final Design Noise Analysis the Department shall prepare a concurrence letter outlining the results of the analysis for the Department’s Chief Engineer and FHWA. Once concurrence is achieved the Design Builder shall prepare and mail letters “certified return receipt” to benefitted receptors to ascertain the desire to have noise barriers constructed as part of the project. Upon completion of the citizen survey the Department shall prepare a second concurrence letter documenting the results, if necessary. All sound walls should be named as presented within the NADR.

All noise barriers recommended for construction and concurred with by the Chief Engineer and FHWA are included in the scope of the Construction Project and shall be funded by the Design Builder at its sole cost and expense. This includes barriers with conditions, as long as those conditions have been met.

Prior to submitting a sound wall plan for the Department’s review, the Design Builder will have the noise consultant that completed the NADR review the plan set and certify that the proposed design meets the noise abatement requirements. This certification will be included in the plan set when it is submitted to the Department for review.

If deviations in the horizontal or vertical alignment of a noise barrier (or the roadway alignment) are proposed following concurrence from the Chief Engineer or FHWA, then additional noise analysis will be provided to the Department for review and approval prior to construction. This will include a plan and profile view of the roadway with the alignments recommended barrier and the proposed design. A justification of the deviation will be included with the plan set. The revised NADR chapter for the noise barrier for which modification is requested will be submitted with this additional information.

A key plan will be clearly labeled to show the location of the ground mounted combo wall (sound wall on retaining wall) and bridge mounted noise barriers.
Plan view will provide the alignment of the noise barrier with the roadway plan view.

Profiles of the wall alignment will include the noise attenuation line and the existing and proposed elevation. If combo walls or bridge-mounted barriers are present along the alignment, the pattern of the line will be different so that all lines can be distinguished.

Stations of the roadway and noise barrier will be included on both the plan and profile views.

Access shall be provided by access doors for VDOT maintenance personnel. Sound barrier wall design shall also be coordinated with first responders to ensure access to fire hydrants and other emergency equipment. In lieu of access doors, gaps may be provided in the walls with a minimum 3:1 ratio of barrier overlap.

2.4.8 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.

2.5 Survey

Preliminary field survey and utility data has been obtained, including, but not limited to the following:
• Horizontal control
• Vertical control
• Notification of property owners*
• Post photography control
• Photogrammetry
• Field data
• Topography
• Property data
• Utilities
• Levels
• Digital Terrain Model
• Bridge Site Plan

*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 is advised that such survey is not represented to be complete for purposes of designing the Project, and that Design-Builder’s scope of work shall include performing all additional surveying and utility designation that is necessary to supplement the above-referenced survey as required for design purposes.

The Design-Builder will be responsible for obtaining final 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.

The Design-Builder will be responsible to reset or relocate and survey control damaged, destroyed or located within the footprint of the final design construction limits. The control will be established by a land surveyor licensed in the Commonwealth of Virginia with LD-200 information and supporting computations submitted to the Project Manager.
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 plans in accordance with the Department’s Survey Manual.

2.6 Retaining Walls

Retaining wall structures shall be designed in accordance with the following requirements:

- Retaining walls shall be designed in accordance with VDOT and AASHTO specifications and requirements.
- Existing or new retaining walls shall be analyzed or designed for any additional loads imposed by sign structure supports or other structures.
- Only retaining wall systems for which FHWA has developed guidelines will be permitted for this project.
- Only retaining walls presenting an essentially vertical concrete face shall be used. Walls with vegetated and/or sloping faces shall not be allowed for this project.
- All components of the retaining walls shall be contained within VDOT’s right-of-way.
- In addition to cast-in-place reinforced concrete cantilever walls, the retaining wall systems indicated on the VDOT Approved Retaining Wall Systems List shall be allowed, except as noted above and as noted on the list itself.
- Mechanically stabilized earth (MSE) walls shall be selected from VDOT’s fully approved panel MSE wall systems (for which special provisions are included in the RFP Information Package).
- MSE walls that require traffic protection at the top shall utilize barriers or railings on moment slabs.
- Parapets located on top of MSE walls shall utilize low permeability concrete in accordance with current VDOT Specifications.
- Retaining walls shall have metal railing except where top of wall is located adjacent to a roadway shoulder in which case the concrete barrier shape shall be used. Metal railing shall conform to VDOT Standard HR-1, galvanized and powder-coated (Federal Color No.27308) in accordance with the Special Provisions for Powder Coating.

2.7 Geotechnical Work

VDOT has completed a preliminary geotechnical subsurface investigation for this Project. The results of the investigation are presented in the Geotechnical Engineering Data Report dated September 17, 2012, which is included in the RFP Information Package.

The data included in this RFP is being provided for Offeror’s information in accordance with Section 102.04 of Division I Amendments to the Standard Specifications (Part 5). The Design-Builder shall perform a design-level geotechnical investigation to validate and augment the geotechnical information included in this RFP. The geotechnical engineering investigation performed by the Design-Builder shall meet or exceed Chapter 3 of the VDOT Materials Division’s Manual of Instructions (“MOI”); the current AASHTO LRFD Bridge Design
Specifications, 6th Edition with current VDOT Modifications; and Section 700.04 (c) of the Road and Bridge Specifications.

The Design-Builder shall collect appropriate data for geotechnical evaluation of pavements, embankments, soil and rock cuts, culverts, bridge and wall structures, sound walls, storm water management facilities, minor structures including drainage pipes, and any other earth-supported or earth-retaining structures or elements of highway design and construction required for this Project. The Design-Builder will be responsible for obtaining all necessary permits and utility clearances as required by VDOT, the Commonwealth of Virginia, or any other jurisdictional body or owner prior to accessing public or private property for the purpose of conducting geotechnical field work. 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.

The Design-Builder shall provide VDOT with 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 Materials Division MOI. The gINT and ACCESS file structures for the Geotechnical Database Management System (“GDBMS”) for the borings contained in Geotechnical Engineering Data Report, dated September 17, 2012, are contained in the RFP Information Package.

Unless otherwise addressed by AASHTO LRFD, the Design-Builder shall incorporate reliability assessments in conjunction with standard analysis methods in accordance with Chapter 3 of the VDOT Materials Division MOI. 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 Geoenvironmental Engineering, ASCE, Discussions and Closure August 2001. 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. VDOT may, in its sole discretion, accept or reject such proposed methods.

The Design-Builder shall submit to the VDOT for its review all geotechnical design and construction memoranda and/or reports that summarize pertinent subsurface investigations, tests, and geotechnical engineering evaluations and recommendations utilized in support of their design/construction documents. This submittal shall be made at least 90 days in advance of the submittal of any final design/construction documents that are dependent upon the geotechnical evaluations and recommendations. Upon completion of the geotechnical program the design builder shall provide to VDOT gINT files of their geotechnical program, as required by the Chapter 3 MOI. 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 (“QA/QC”) 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.

2.7.1 Minimum Pavement Sections

Minimum pavement sections are being provided for proposal preparation purposes only. If the Design-Builder confirms that the minimum pavement sections below 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 above shall be approved by VDOT. The Design-Builder shall be responsible for the final design and construction of the pavements for this Project in accordance with the Contract Documents.

The Design-Builder shall prepare and incorporate into the plans, typical sections, profiles and cross-sections the validated pavement sections in accordance with the applicable manuals noted in Part 2, Section 2.1. This includes drainage and subdrainage requirements to ensure positive drainage both within the pavement structure and on the pavement surface. The minimum pavement sections are as follows:

1. Asphalt Concrete Type SM-12.5A at 220 lbs per square yard
2. 4” Asphalt Concrete Type BM-25.0A Base Course
3. 6” Aggregate Base Material, Type 1, No. 21B Subbase

All paving shall extend to the face of guardrail and shall utilize MC-4 method for asphalt pavement under guardrail.

The Design-Builder may wish to consider the following paving recommendations:

For the proposed new fill heights of 2.0 feet and greater (over existing roadway surface):

- Scarify the surface of the existing pavement. This can be accomplished by milling the pavement surface to a depth not to exceed 2”. The millings are to be left in place.
- Upon completion of the scarification process, place a minimum of 6.0” compacted lift of either crusher run aggregate, Size no 25 or 26; or 21-B aggregate directly on the scarified surface. The combination of the scarification and compacted aggregate is intended to function as stabilizing friction course.
- Complete the fill as designed with the appropriately prescribed material.

For proposed new fill height of less than 2.0 feet (over existing roadway surface):
• In areas where the proposed fill height is 0-2’, demolish and remove the existing pavement. Proceed with contracting the new fill in accordance with the plans.

For transition from new to existing pavements:

• Mill the surface of the existing pavement to a maximum depth of 2” for a length not to exceed 25ft (the width of the pavement should be sawcut at this 25’ boundary).

• Clear and tack coat the milled surface per the Specifications.

• Extend the prescribed new pavement 2” surface course across the milled surface as an overlay.

2.7.2 Geotechnical Requirements

The Design-Builder shall analyze methods to minimize differential settlement of the approach to the bridge for new construction and provide construction recommendations to address soil-structure interaction to accommodate the unique construction methods applied to this Project. All geotechnical work shall be completed to satisfy baseline and post-construction contract performance requirements.

Blasting will not be permitted on this Project.

Design and construct pavements, subgrades, and embankments to meet the following post-construction settlement tolerances:

• Total vertical settlement less than two inches over the initial 20-years, and less than one inch over the initial 20-years within 100 feet of bridge abutments;

• Settlement that will not impede positive drainage of the pavement surface especially within the travel lanes nor subject the roadway to flooding in area where it is applicable;

• Settlement that does not result in damage to adjacent or underlying structures, including utilities; and

• For pavement sections of approach slabs, bridge decks, and tie-ins to the Project, grade tolerances shall be measured with a 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 (+) 0.25-inch to minus (-) 0.125 -inch at structures and (+/-) 0.25-inch at Project tie-ins.

• Humps, depressions, and irregularities 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.

The Design-Builder shall consider settlement of design foundations (bridges, retaining walls, sound barriers, and other structures) based upon the criteria defined in Attachment 2.3a entitled Additional Foundation Criteria.
In summary, the Additional Foundation Criteria outlined in Attachment 2.3 provides two options for managing settlement of structures; a) limit total settlement to 0.5 inch and subsequently limit the need for a refined analysis of the superstructure and substructure or b) allow the Design-Builder to design the structure for their estimates of elastic, consolidation and secondary settlement (total settlement) and subsequently communicate the total and differential settlement in a the General Notes. In either case, a General Note shall be included in the plans to communicate the amount of settlement evaluated and accommodated by the structure. Specific General Note language and Notes to Designer are included in Attachment 2.3a.

In either case defined in Attachment 2.3, the total vertical and/or differential settlements of the proposed structures shall not exceed the performance tolerance noted above for pavements and of the bridge decking. In addition, angular distortion between adjacent foundations greater than 0.008 radians in simple span and 0.004 radians in continuous span structures is not permitted unless first approved by VDOT.

Embankments and cut slopes should be designed in accordance with Section 305 of the VDOT Materials Division MOI.

Unsuitable Material is defined as material for use as embankment fill, and in cut areas to a depth of at least 5 feet below subgrade directly beneath pavements and at least 2 feet beneath the bedding of minor structures and laterally at least 2 feet beyond the outside edge of the pavement shoulders and bedding limits of the minor structures that meets one or more of the following criteria: classifies as CH, MH, OH and OL in accordance with the Unified Soil Classification System (USCS); contains more than 5 percent by weight organic matter; exhibits a swell greater than 5 percent as determined from the California Bearing Ratio (CBR) test using VTM-8; exhibits strength, consolidation, or any other characteristics that are deemed unsuitable by the Design-Builder’s geotechnical engineer or as denoted in the Contract Documents for use in the Work. All materials within the uppermost 5 feet of a pavement subgrade that exhibits a CBR value less than that stipulated in the pavement design shall also be considered unsuitable. The anticipated locations and methods of treatment for unsuitable materials identified by the design-builder’s qualified geotechnical engineer shall be shown on the design plans and cross sections. Saturated or very dry and/or loose or very soft coarse- and fine-grained soils that exhibit excessive pumping, heaving or rutting under the weight of construction equipment are also considered unsuitable unless they can be moisture conditioned through either mechanical or chemical means to an acceptable moisture content that allows adequate compaction to meet project specifications, and classification testing indicates they are not otherwise unsuitable. All unsuitable material shall be disposed of and/or treated as discussed in Section 106.04 at no additional cost to the Department. Topsoil or other organic soils can be considered for use as cover for slopes for the purpose of establishing vegetative cover. When used as cover for slopes, the thickness of topsoil shall not exceed 12 inches.

If the Design-Builder elects to use mechanically stabilized earth (“MSE”) walls, the fill material used in the reinforced zone shall be a crushed aggregate with properties in accordance with VDOT’s Special Provisions for approved proprietary MSE walls. The Design-Builder shall provide global and external stability analyses utilizing a computer program acceptable to VDOT.
and submit the results of the analysis, including boring logs, laboratory data, and any other applicable data, to VDOT geotechnical engineers for review. The wall supplier shall provide to the Design-Builder, for submittal to VDOT, an internal stability analysis that validates the design of the wall. Retaining walls shall be designed to control settlements within tolerances identified by VDOT Guidelines for Preparation of Alternate Retaining Wall Plans.

Material and Construction requirements shall follow VDOT’s Special Provision for Reinforced Earth Walls. Where undercutting and material replacement is required to reduce settlement or improve bearing capacity/global stability, areas requiring repair shall be clearly identified on the plans with notes provided to aid plan review, construction, and inspection.

2.7.3 Pipe Installation Methods

Culverts or utility pipes shall be installed by either conventional methods in accordance with Section 302.03 of VDOT’s Road and Bridge Specifications, or Jack and Bore and/or Micro-tunneling in accordance with the applicable Special Provisions contained in the RFP Information Package. Trenchless technology other than these methods of installation is not permitted unless otherwise approved by VDOT. The Design-Builder’s Design Engineer shall choose which of the methods of installation is best suited for the ground and site conditions where the work is to be performed and that will meet the design requirements of the proposed culverts or utility pipes. The Design Engineer shall be responsible to establish both the vertical and horizontal tolerances in support of the design. Such tolerances shall be noted on the construction plans. The design tolerance may be more stringent than what is called for in the both the Jack and Bore and Micro-Tunneling Special Provisions; however, under no circumstances shall the design tolerances used in design of either culverts or utility pipes exceed those specified in the VDOT Road and Bridge Specifications and the applicable Special Provisions. Performance requirements and tolerances stipulated in the Special Provisions shall also apply to conventional tunneling methods. If trenchless technology is used to complete roadway crossings, surface settlement monitoring must be performed to verify that there is no adverse impact on the stability and performance of the embankment and pavement structure above the pipe alignments in accordance with Section 302.03 of the VDOT Road and Bridge Specifications and the Special Provisions for Jack and Bore and/or Micro-Tunneling, as applicable.

2.8 Hydraulics

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 Program permitting requirements of the standards and reference documents listed in Part 2, Section 2.1.

VDOT completed H&HA and preliminary scour analysis (contained in the RFP Information Package) using the preliminary bridge configuration provided in the RFP
Conceptual Plans. The Design-Builder shall submit to VDOT a final H&HA to include scour analysis and mitigation design of the final proposed bridge configuration.

2.8.1 Hydrologic and Hydraulic Analysis

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 hydrologic and hydraulic analysis 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 Hydrologic and Hydraulic 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 shall be responsible for mitigating the adverse impacts of the post construction condition at no additional cost to VDOT.

2.8.2 Drainage
The drainage work shall include the design and construction of culverts, open channels, storm sewer systems, underdrains, bridge deck drainage assemblies and structures, adequate outfall analysis, stormwater management facilities, and erosion and sediment control measures in compliance with the standards and reference documents listed in Part 2, Section 2.1 and the VDOT Erosion and Sediment Control & Stormwater Management Programs. The Design-Builder shall provide VDOT two (2) paper and two (2) electronic copies on compact disc (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. 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 with 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.

2.8.3 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.

Effective July 1, 2013 the administration of the Virginia Erosion and Sediment Control and Stormwater Management regulatory programs was transferred from the Virginia Department of Conservation and Recreation (DCR) to the Virginia Department of Environmental Quality (DEQ). References and links to DCR manuals and documents contained herein may no longer be correct as these programs are being transferred between the State agencies. The erosion and sediment control certification requirements shall still apply, but with the DEQ having oversight over the certification program beginning July 1, 2013.
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 Environmental Quality (DEQ) 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 One Acre in a Non-Chesapeake Bay Preservation Area 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-242.3. 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 Permitee and shall be responsible for all permitting fees.

A working conceptual ESC 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, 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-246.3. 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 complete and sign the VSMP Construction Permit Termination Notice form (LD-445D) and submit it 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 DEQ Inspector Certification, a DEQ Responsible Land Disturber (RLD) Certification and a VDOT Erosion and Sediment Control Contractor Certification (ESCCC) to ensure compliance with all DEQ and VDOT erosion and sediment control plan implementation requirements.

2.8.4 Post-Construction Stormwater Management Facilities

Under the direction of the Stormwater Program Advisory issued April 5, 2012 (SWPA 12-01), this project is grandfathered under the provisions of Section 4VAC50-60-48 of the VSMP Regulations adopted September 13, 2011 and utilizes the technical criteria of Part IIC (4VAC50-60-93.1 et. seq.) for determining its post development stormwater management design.

A Willingness for Public Hearing for this project was posted on August 1, 2012 which marks the end of the public participation stage of plan development. The criteria of SWPA 12-01 define this project as a “Category 2” activity. Category 2 projects “will be required to incorporate any additional water quality requirements into their proposed post development stormwater management plan to the maximum extent practicable without impacting (increasing) the existing or currently proposed right of way/easement footprint and without impacting (delaying) the construction schedule.” Additionally the SWPA makes the following condition: “…any revisions to the proposed post development stormwater management plan to address additional water quality requirements should be reasonable and practicable and be applied in a logical and common sense approach.”

Under this guidance, it has been determined that a BMP to address water quality cannot be added within the right of way limits proposed at the time of the Willingness. The project right of way is tightly constrained and mostly located within flood plain. To add a BMP would require additional right of way and would result in a delay to the project.

The Design-Builder shall include the following statement in Section IV of the SWPPP: “This project is grandfathered under the provisions of Section 4VAC50-60-48 of the VSMP
Regulations adopted September 13, 2011 and utilizes the technical criteria of Part IIC (4VAC50-60-93.1 et. seq.) for determining its post development stormwater management design.”

### 2.8.5 Other Drainage Requirements

All drainage facilities (existing and newly constructed) within the project area that are disturbed or extended as a part of the project 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.

### 2.9 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 and the Special Provision for Work Zone Traffic Control Management, Design-Build Projects.

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

#### 2.9.1 Signs

The Design-Builder shall be responsible for modifications to existing signs and sign structures, and furnishing and installing all required new temporary and permanent signs, luminaries, and structures, along Route 35 mainline. Any signs on adjacent roadways and other facilities that require relocation/replacement due to construction activities shall be the responsibility of the Design-Builder. The final lines of sight and sight distances must be considered in the placement of all Project signage. “Town of Courtland Welcome” and “Leaving Town of Courtland” signs shall be installed at approximately Station 12+10. Town of Courtland sign details are provided in the RFP Conceptual Plans.

An existing sign inventory shall be completed prior to site demolition in accordance with the VDOT Traffic Engineering Design Manual. This existing information shall be submitted at the same time as the first plan submittal for proposed signing.

All signs and sign structures to be removed during the construction of the Project shall be disposed of by the Design-Builder.

#### 1 Limits of Project Signing
The Design-Builder shall replace all existing ground mounted signage and install new signing within the Project limits. Any signing on adjacent roadways beyond the project limits that require relocation, replacement, or modification due to the proposed design shall be the responsibility of the Design-Builder.

.2 Signing Plan Requirements

The signing plans shall be prepared at a one (1) inch = fifty (50) feet scale when plotted full size at thirty-five (35) inches by twenty-three (23) inches. The signing plans shall show the proposed sign message, MUTCD or Virginia Supplement sign designation (if applicable), size and location of all signs. The structure type used for mounting sign shall be noted on the signing plans. These signing plans shall show the location and messages of all existing signs. All existing sign removals and relocations shall be shown on the signing plans. The signing plans also shall include the location and type of delineation devices (including pavement markings and markers).

.3 Design of Sign Panels and Locations

Proposed and replaced sign panels shall be in accordance with the VDOT 2007 Road & Bridge Specifications and other references in Part 2, Section 2.1. Overhead sign structures shall be located, designed, fabricated, and constructed in accordance with applicable standards and specifications. The Design-Builder shall coordinate all sign locations with all proposed and existing signing, landscaping, fencing, signals, utility, drainage, and all other roadside features to assure proper clearances and adequate sight distances. Existing signs that are in conflict with, or for which visibility will be impacted by proposed signing or structures, including proposed DMS structures, shall be removed and replaced with new signs replicating the existing messages at new locations. Sign sizes shall adhere to the latest edition of the FHWA Standard Highways Signs Book, the current edition of the MUTCD, the 2011 Virginia Supplement to the 2009 MUTCD, and all applicable Traffic Engineering Division Numbered memoranda. All guide signs shall be mounted on overhead or cantilever sign structures. No guide signs shall be mounted on bridges.

The Design-Builder shall use Standard VDOT sign structures for new and relocated VDOT owned signs. Ground-mounted VDOT sign structures shall use Standard SSP-VIA or SSP-VA structures, unless otherwise approved by VDOT. The Design-Builder shall utilize the current edition of the MUTCD, 2011 Virginia Supplement to the 2009 MUTCD, the FHWA’s Standard Highway Signs including Pavement Markings and Standard Alphabets to design all non-standard signs that do not have a MUTCD or VDOT standard sign designation. The Clearview font shall only be utilized for all positive contrast guide signs in accordance with the 2011 Virginia Supplement to the 2009 MUTCD and applicable Traffic Engineering Division Numbered Memoranda. Overhead signage shall be illuminated using luminaire retrieval system in accordance with VDOT Road and Bridge Standards. Use of a LED illumination system will not be permitted.
The Design-Builder shall coordinate the permanent location of sign structures and all proposed, relocated, or modified with Integrated Directional Signing Program (IDSP) signs such as Supplemental Guide Signs (SGS), Specific Travel Services (Logo) Signs, General Motorist Services Signs (GMSS), Tourist Oriented Directional Signs (TODS), and all other signs approved and maintained as part of the IDSP. All impacts to IDSP signs shall be reviewed and approved by the IDSP Manager before relocation, fabrication, and installation. Whenever possible all proposed, relocated, or modified IDSP signs should not be installed in sign assemblies with other non-IDSP signs. IDSP signs should be installed on 2 ½” square tube posts and concrete foundations in accordance with Standards STP-1, Standards SSP-VA structures and foundations, or Standards SSP-VIA structures and foundation as appropriate and as approved by the IDSP Manager. The Design-Builder is responsible for costs associated with removal and replacement of IDSP signs.

\subsection{2.9.2 Guardrail/Barrier}

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 guardrail where appropriate, for protection in accordance with standards. The same clear zone requirement applies to existing conditions affected by this Project where guardrail upgrade will be required. If required, existing and sub-standard guardrail within the Project Limits must be upgraded by the Design-Builder to meet current standards per I&IM 220.

\subsection{2.9.3 Pavement Markings/Markers}

The Design-Builder shall include all required pavement markings, markers, and delineators. Pavement markings, markers, and delineators shall conform to the requirements of the MUTCD, the 2011 Virginia Supplement to the 2009 MUTCD, and applicable special provisions (included in the RFP Information Package). All pavement marking plans shall be in accordance with VDOT Traffic Engineering Design Manual, dated 2011. All edge lines, centerlines, and skip lines on Route 35 shall be Type B, Class I thermoplastic. Contrast tape pavement markings shall be used for concrete pavement. Pavement markers shall be installed on the new bridge in accordance with VDOT’s Road and Bridge Standards and the Traffic Engineering Manual.

Proposed pavement markings, markers, and delineators shall be shown on the Signing Plans in accordance with Section 2.9.1.1 of this RFP.

\subsection{2.9.4 Lighting}

The project shall include limited lighting along Route 35 on the east approach to the Town of Courtland as shown in the RFP Conceptual Plans. The Design-Builder will be responsible for submitting final lighting plans for VDOT approval.

All conductor cables shall be in conduit and junction boxes; no direct burial cable will be allowed. Voltage drop calculations must be performed for the entire lighting system which shall not exceed 3%. Number 8 AWG wire is the smallest wire size allowed in any feeder or branch circuit. The lighting system will require equipment grounding conductors in non-metallic conduits in accordance with Article 250 of the NEC. Lighting system grounding conductors shall be the same size as the largest power conductor within the non-metallic conduit. The Design-Builder shall provide point-to-point lighting analysis and calculations of the illuminated areas, using AGI-32 software, and submit them to VDOT for review and approval.

The lighting within the eastern limits of the bridge shall be owned and maintained by VDOT. Service connection location and energizing the system shall be coordinated with Virginia Power and shall be the responsibility of the Design-Builder.

2.10 Transportation Management Plan

The Design-Builder shall prepare a Transportation Management Plan (TMP) in accordance with I&IM-241/TE-351 for all proposed work associated with the Project. The TMP shall document how traffic shall be managed during the construction of the Project. This Project is classified as a Type B, Category III in terms of the TMP. The Design-Builder shall coordinate all work in accordance with the TMP. The phases in the Design-Builder’s sequence of construction shall be followed unless the Design-Builder submits and secures VDOT approval for a sequence which will both expedite construction while lessening the effect of such construction upon the traveling public. The TMP shall incorporate and address the elements provided in this Section 2.10.

2.10.1 Maintenance of Traffic

The Design-Builder’s TMP shall include a Maintenance of Traffic (MOT) Plan detailing all phases of work, proposed lane closures, maintenance of traffic through the work area, and all construction accesses for approval by VDOT’s Project Manager. This plan shall also address safe and efficient operation of adjacent public transportation facilities and State Highways. The plan shall also include coordination with local agencies and other contractors performing work in the vicinity of the Town of Courtland. This plan shall reflect the noted Scope of Work and all applicable VDOT Standards and Specifications regarding time of work. All users must be addressed and accommodated in the TMP, including pedestrians, bicyclists, transit vehicles, and other motorists. The TMP shall also accommodate safe and efficient snow removal operations and ensure proper drainage during all phases of construction. Access must be maintained to all businesses, residential communities, and private entrances at all times. The phases in the Design-Builder’s suggested sequence of construction that accompany an approved work package shall be followed unless the Design-Builder submits and secures VDOT approval for a sequence which will both expedite construction while lessening the effect of such construction upon the traveling public.

The Department has determined that the existing bridge does not have to remain open to traffic during construction. The Design-Builder will be permitted to fully close Route 35
(Meherrin Road) in the immediate vicinity of the Darden Bridge for a time period of no more than 365 days. Access to all entrances along Meherrin Road between Route 651 and Rte 35/Business Rte 58 in Courtland must remain open. The Design Builder will coordinate with the Residency to allow for coordination with Emergency Services.

The Department has determined there are adequate detours on state primary routes that can be used. The Transportation Management plan shall comply with the applicable Work area Protection Manual; II&M-241 for Type B, Category 3. Also, the Design-Builder shall provide detour routes that fulfill the following:

- Detour route will not place traffic on posted structures.
- Roadway width of detour routes will be at least 24 feet and have sufficient pavement condition for the traffic load.
- Impact on Traffic: An assessment of the Work Zone Traffic Impact will be completed using sketch planning traffic analysis tool such as Quick zone, QUEZ and/or operational-level traffic analysis software simulation program such as CROSIM, Synchro or other applicable programs. Lane closures and detour routes will be implemented based on results of the Work Zone Traffic Impact assessment. All lane closures and time restrictions shall comply with the Regional Operation’s lane closure policies, with any deviations requiring the approval of the Regional Operations Director.

Construction signs and pavement markings (temporary) shall be installed, maintained, adjusted, and removed by the Design-Builder throughout the duration of the Project.

All entrances, intersections or pedestrian access points/routes that will be affected by the work zone or by the traffic control devices will be maintained or an acceptable alternate must be provided by the Design-Builder.

2.10.2 Cooperation among Contractors

The Department plans a concurrent Contract to construct an interchange at Rte 58 and Route 742, UPC 11758 and may, at any time, contract or approve other contracts for performance of other concurrent work on, near, or within the same geographical area of work specified in this contract or an existing contract.

The Design-Builder shall not impede or limit access to or egress from such work by others, but shall cooperate and coordinate with other contractors for the timely completion of all construction activities. This shall include attendance at coordination meetings deemed necessary or advantageous by the VDOT Project Manager. If the Design-Builder asserts that any of the other contractors have hindered or interfered with the progress or completion of the Design-Builder’s Work, then the Design-Builder’s sole remedy will be to seek recourse against such other contractors.

The Design-Builder shall coordinate all lane closures and detours with any other Contractors working on other projects along the Route 58 (Franklin-Emporia) corridor, prior to
submitting any request(s) for lane closure(s) to the VDOT Project Manager. Of particular concern is the potential for overlapping work zones and overlapping activity areas among contractors. The Design-Builder should avoid overlapping work zones, (“Road Work Ahead” to “End Road Work”), closing dissimilar lanes (inside lanes to outside lanes). The minimum distance between the end of a downstream taper and the beginning of an upstream taper for adjacent work zones closing dissimilar lanes should be a minimum of 1.5 miles. In case of conflict, or when activity areas among contractors overlap, the Engineer will determine the work priority.

In the event the Design-Builder experiences delays due to the fault of another contractor while prosecuting this work as required herein, no additional compensation will be considered, except for a consideration of an extension of time in accordance with the requirements of Section 108.09 of the Road & Bridge Specifications.

The Design-Builder will be required to attend scheduled coordination meetings that the Department will chair. It is expected that intermediate commitments and benchmarks shall be jointly developed and mutually agreed to by the Design-Builder and other contractors at these meetings. The content of these meetings may include reviews, analysis and dialogue on:

- Planned contractor(s) operations
- Schedule coordination issues among projects
- Haul routes
- Contractor access issues
- Public access issues
- Lane closure schedules
- Environmental permit compliance
- Traffic switch coordination, scheduling, and implementation
- Opportunities for collaboration

The Design-Builder shall be responsible for contacting contractors regarding their anticipated schedules to complete the associated projects or key milestones of the associated projects they are working on.

Contractors are currently working or are anticipated to be working on major improvements along the Route 58 (Franklin-Emporia) corridor while this project is under construction, including but not limited to, the following:

- UPC 85949, Camp Parkway bridge over Blackwater River
- UPC 81435 Rte 58 Business Bridge Carrsville over CSX

All detour routes will be approved by the Department, to include the required signage, and use of portable message boards. The Department will be allowed a 30 day approval process to assess detour route proposals.
2.11 Public Involvement / Public Relations

The Design-Builder shall be responsible for providing a point of contact and phone number for the public to use in calling to request information or express concerns during the Project development and delivery. All information to be released to the public shall be approved by VDOT.

During the design and construction phases, the Design-Builder shall:

- Hold at least monthly meetings with the Courtland Business Leader Panel and other affected stakeholders, as necessary and as directed by VDOT. VDOT formed a Courtland Business Leader Panel after Public Hearing to keep stakeholders informed of project activities and develop context sensitive solutions for the Project. VDOT has been meeting with this panel monthly at the Franklin Residency to keep them informed and will furnish contact information and previous meeting minutes to the successful bidder. A list of other affected stakeholders shall be developed by the Design-Builder and submitted to VDOT for acceptance prior to holding any meetings. All stakeholders shall be informed of meetings.

- Concurrent with the first plan submittal, provide to VDOT’s Hampton Roads District Office of Public Affairs written information about the Project suitable for posting by VDOT on its Website. Information will include a Project overview, sequence of construction, overall Project schedule, and potential impacts to traffic (i.e., detours.), up-to-date Project photos, and contact information. Updated web content should be provided to Public Affairs monthly throughout the Project.

During the Construction Phase, the Design-Builder shall:

- Operate as a liaison between VDOT, Southampton County, Courtland Business Leader Panel, the Town of Courtland, and the Design-Builder’s Construction Manager to ensure compliance with applicable local ordinances and provide monthly notification to affected officials, business and property owners.

- Provide an emergency contact list of Project personnel and response plan to respond to any onsite emergency, including any work zone incidents in accordance with IIM-241.

A public hearing was conducted on February 7, 2013 for this Project. Applicable Public Hearing comments have been compiled and have been incorporated into the plans as deemed necessary by VDOT. Any meetings held will be conducted in accordance with the VDOT Policy Manual for Public Participation in Transportation Projects, revised August 2011.

2.12 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 Conceptual Plans, with the exception of temporary construction, permanent drainage, and utility easements (other than permanent drainage easements for stormwater management facilities). Utility easements have not yet been identified or shown on the RFP Conceptual Plans. Deviations from the proposed right of way limits shown on the RFP Conceptual 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 within the right of way limits shown on the RFP Conceptual Plans, with the exception of temporary construction, permanent drainage, and utility easements (other than permanent drainage easements for stormwater management facilities). If the Design-Builder proposes to exceed the right of way limits shown on the RFP Conceptual 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 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. 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. 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 I&IM-LD-243 and Chapter 12 of the VDOT Survey Manual. 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.

- 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 maximum of sixty (60) days, in order to reach settlement after the filing of certificate. After that time the case will be assigned 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 maintain access at all times to properties during construction.

- 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 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 with 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.

- The Design-Builder must notify VDOT of any and all encroachments (temporary or permanent) within the right of way prior to final acceptance.

2.13 Utilities

The Design-Builder shall be responsible for coordination of the Project construction with all utilities 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 Design-Builder or its subcontractors due to interference from utility owners or the operation of relocating utilities or betterments. All cost for utility relocations shall be included in the Offeror’s Price Proposal. 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 Design-Builder shall be responsible for all utility designations, utility locates (test holes), conflict evaluations, cost responsibility determinations, utility relocation designs, utility relocations and adjustments, utility reimbursement, replacement land rights acquisition, utility coordination, and coordination of utility betterments required for the Project. The Design-Builder is responsible for all necessary utility relocations, adjustments, and betterments to occur in accordance with the accepted Baseline Schedule. All efforts and cost necessary for all utility designations, utility locates (test holes), conflict evaluations, cost responsibility determination, utility relocation designs, utility relocations and adjustments, utility reimbursements, replacement land rights acquisition and utility coordination shall be included in the Offeror’s Price Proposal; provided, however, that the compensation paid to landowners for replacement land rights will be paid by VDOT as a part of the 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
or required right of way needs of all utilities necessary for relocation due to conflicts with the Project.

It is the Design-Builder’s responsibility to verify whether utility owners exist within the Project limits and coordinate with them.

The Design-Builder shall provide all utility companies with roadway 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 companies will use the Design-Builder’s design plan for preparing relocation plans and estimates. If a party other than the utility 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 utility review meeting with all affected utility companies 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 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 existing easements, as-built 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; or letters of "no conflict" where the utility's facilities will not be impacted by the Project.

The Design-Builder shall review all relocation plans to ensure that relocations comply with the VDOT Utilities Manual of Instruction (Tenth Edition, Dated: 01/01/2011) Utility Relocation Policies and Procedures and VDOT’s Land Use Permit Manual. 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 to VDOT all relocation plans. The Design-Builder is expected to 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 is expected to meet with VDOT’s Regional Utilities Office within 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 must be accompanied by a
certification from the Design-Builder stating that the proposed relocation will not conflict with
the proposed roadway improvement 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 will 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. The Design-Builder will ensure the utility companies submit as-built
drawings upon completion of their relocation and/or adjustments. VDOT shall issue an as-built
permit to the utility companies after receipt of permit application and as-built drawings.

2.14 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. Preparatory Inspection Meeting requirements, including incorporation of at least one
each, Witness and Hold Point, as set forth in Sections 5.3 and 5.14 of the
Department’s guidance document for Minimum Requirements for Quality Assurance
and Quality Control on Design Build and Public-Private Transportation Act Projects,
January 2012 (January 2012 QA/QC Guide);
2. At least one (1) material which VDOT retains responsibility for testing as identified
in Table 5-2, January 2012 QA/QC Guide;
3. 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 Sections 5.10 and
5.11 of the January 2012 QA/QC Guide for non-conforming work resulting from:
   a. defective equipment
   b. construction activities/materials which fail to conform as specified;
4. Inspection documentation capturing requirements as set forth in Section 5.20 and 5.21
of the January 2012 QA/QC Guide; as well as inspection of foundation and pavement
subgrades that are to be performed and certified by the Design-Builder’s licensed
geotechnical engineer in accordance with the Contract requirements;
5. Application for payment for Work Package which includes work element, including
review and approval by Quality Assurance Manager; and
6. Measures that will be implemented to ensure compliance with Buy America
requirements on the Project.
Detail two (2) sample entries in Materials Notebook showing completion of Form C-25, including subsequent submission and review by Department Project Manager as set forth in Section 5.21. Refer to Section 803.73 of VDOT’s Manual of Instruction for Materials Division, Form TL-142S, for an example of a completed Materials Notebook and VDOT Materials Division Memorandum Number MD299-07 for Materials Acceptance – October 4, 2007.

2.14.1 Design Management

The Design-Builder is 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 (January 2012 QA/QC Guide). The Design-Builder’s Design Manager shall be responsible for establishing and overseeing a 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.

2.14.2 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 also shall 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, girders, and sign structures)
- 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) and Independent Verification Sampling and Testing (IVST)), Owner’s (the Department) Independent Assurance (OIA), and Owner’s Independent Verification Sampling and Testing (OVST) required as a result of the quantities and the sampling and testing requirements as set forth in Table A-3 and A-4 of the January 2012 QA/QC Guide. VDOT will
provide all OIA and OVST tests and, therefore, final determination of the actual number of OIA and OVST 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), 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 and 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 full-time 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 shall 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 for the types of materials testing that they are assigned to perform in accordance with Section 3.6 of the January 2012 QA/QC Guide, and for the safety and use of nuclear testing equipment as required by the Road and Bridge Specifications. The QA programs shall be performed under the direction of the QAM. The QC programs shall 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, including 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 shall include the remedial actions to be taken as discussed in Sections 5.10 and 5.11 of the January 2012 QA/QC Guide.

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
• Test reports
• Invoices
• Materials books
• Certified survey records
• DBE/EEO records
• Warranties
• As-Built drawings
• Special tools

2.15 Field Office

The Design-Builder shall provide office space, equipment, and services consistent with requirements for a Type I Field Office. This field office should be configured and equipped for joint operations by Design-Builder and Department staff. The configuration and equipping of the field office shall be coordinated between the Design-Builder and the VDOT Project Manager prior to on-site placement of the field office. The field office will be operational throughout the duration of the Project construction and shall be removed upon final Project acceptance.

2.16 Plan Preparation

2.16.1 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 RFP Conceptual Roadway and Bridge Plans including aerial images, if available, and survey files.

2.16.2 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 only for the duration specified for that Project. Any adjustment made 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 will be responsible for keeping track of the license(s) provided to them or a team member and, upon completion of the Project, 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.

### 2.16.3 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.

### 2.16.4 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.

### 2.16.5 Plan Submittals

In addition to electronic files as described in Section 2.16.4 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):

- Bridge Plan Submissions
- 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 Design-Build Contractor will, at a minimum, make two bridge plan submissions for review and
approval; 1) Preliminary Plan (Stage I) Submission and 2) Final Plan (Stage II) Submission. If major changes in geometry, and/or design concepts are made during final design an interim submission shall be made.

1. Preliminary Plan (Stage I) Submission

   a. The Design-Build Contractor will submit a preliminary plan for each permanent structure (new bridge, bridge replacement, and bridge widening) documenting how the structure geometrics were determined. If design waivers are being considered, the design waivers should be submitted on the LD 440 form prior to submitting the Preliminary Plan and Report.

   b. The preliminary plan submittal will include:

      i. Completed Stage I Bridge Report Summary Form,
      ii. Preliminary geotechnical recommendation report,
      iii. Bridge Plan View,
      iv. Developed Section Along Bridge Centerline/Construction Baseline,
      v. Transverse Section,
      vi. Abutment Typical Section (include expected footing/foundation support)
      vii. Typical Pier/Bent Plan and Elevation Views (include expected foundation support)

   c. Preliminary plans must be submitted to and approved by the Department prior to any final bridge design submittal. The Department will not review any final design submittals until the preliminary plan has been submitted to the Department. The commencement of the final design prior to the review of the preliminary plan submittal by the Department will be done solely at the risk of the Design-Build Contractor.

   d. The Stage I bridge submittal will be subject to modifications based upon requirements identified in the detailed hydrologic and hydraulic study and scour analysis of the waterway crossing.

2. Final Plan (Stage II) Submission

   a. The Design-Build Contractor will submit final plans for each permanent structure. The final plans will be assembled according to the procedures and guidelines presented in the Department’s office practices.

   b. Final bridge plans may be submitted as completed bridge plan set(s) or in plan submission packages (i.e., foundation plan package, substructure plan package, superstructure plan package, etc.). The Geotechnical Recommendation Report is required with the Stage II submission. The final plans are to be submitted for review and approval by the Chief Engineer prior to construction of that element and should be submitted according to the submission schedule provided by the Design-Build Contractor.

   c. Each sheet of the contract plans shall be completely dimensioned, and all elevations necessary for construction purposes shall be shown. An Estimated Quantities table shall be included on the final bridge plans. The Design-Builder shall provide complete
details for steel structures or steel components, showing all sizes and overall dimensions of members, number and arrangement of all fasteners at joints, type and size of welds

3. Interim submission

a. An interim submission shall be made when major changes to the bridge concepts change after the Preliminary Approval and prior to Final Plan Submission. Examples of major changes include, but are not limited to, the following:

i. Changes in span arrangement,

ii. Change in substructure type,

iii. Change in superstructure type (i.e. from composite steel plate girder to precast composite for live load),

iv. Change in foundation support,

v. Changes in hydraulic opening, etc.

The bridge plans must use the standard sheets in Volume V (all parts) of the VDOT Manual of Structure and Bridge Division. Structural elements that have a corresponding standard sheet in Volume V must be detailed using the appropriate standard sheet. The sequence of concrete deck placement operations for beams or girder construction shall be given for continuous structures, and all erection stresses shall be computed where necessary for design. A summary table of moments, shears, reactions and stresses for primary load carrying members shall be included in the plans.

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 two (2) full-size sets and ten (10) half-size sets of each submission, with the exception of the Released for Construction Plans (see Section 2.16.8 below). FHWA shall receive two (2) half-size sets of each submission. The plan submissions shall be delivered to the following addresses:

Virginia Department of Transportation  
Attention - John Harman, P.E.  
1700 North Main Street  
Suffolk, VA 23434

Federal Highway Administration  
Attention – Jose Granado, P.E.  
400 N. 8th Street, Suite 750  
Richmond, VA 23219-4825

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.

2.16.6 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 2.15 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.

2.16.7 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.

2.16.8 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 one (1) full-size set and five (5) half-size sets of Released for Construction Plans, along with all electronic files. FHWA shall receive two (2) 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 - John Harman, P.E.  
1700 North Main Street  
Suffolk, VA 23434

Federal Highway Administration  
Attention – Jose Granado, P.E.  
400 N. 8th Street, Suite 750  
Richmond, VA 23219-4825

2.16.9 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.

2.17 Virginia Occupational Safety and Health Standards

The Project shall comply with Virginia Occupational Safety and Health Standards in accordance with Section 107.17 of the Division I Amendments to the Standard Specifications.

At a minimum, all Contractor personnel 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.

• 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.

3.0 ATTACHMENTS

The following attachments are specifically made a part of, and incorporated by reference into, these Technical Information & Requirements:

ATTACHMENT 2.2 -- ROADWAY INVENTORY AND MAJOR DESIGN CRITERIA
ATTACHMENT 2.3 -- ADDITIONAL FOUNDATION CRITERIA
All additional information is included in the RFP Information Package – referred to in Part 1 (Instructions for Offerors), Section 2.8.4 of this RFP.

END OF PART 2 - TECHNICAL INFORMATION & REQUIREMENTS