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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 at the intersection of Sycolin Road with the Route 7-15 Bypass in the Town of Leesburg in Loudoun County, Virginia and extends approximately 0.37 miles from 0.10 miles north of Hope Parkway to 0.02 miles north of Gateway Parkway. The purpose of this project is to improve safety and operations along the Route 7-15 Bypass by building a grade separated bridge for Sycolin Road over the Route 7-15 Bypass and removing the existing signalized intersection.

Sycolin Road shall be reconstructed as a four-lane undivided overpass with no direct connection to the Route 7 Bypass after the Project is complete. Pedestrian access will be provided on the proposed bridge with a sidewalk on the south side of Sycolin Road and a shared used path on the north side of Sycolin Road. The shared-use-path will be barrier separated from the vehicular traffic across the bridge.

The project includes but is not limited to (a) final design, (b) right of way acquisition, (c) utility relocation, (d) construction of new Sycolin Road overpass, (e) reconstruction of Sycolin Road, (f) construction of retaining walls, (g) construction of pedestrian facilities, (h) construction of noise walls, (i) removal of the existing traffic signal, (j) drainage, (k) lighting along Sycolin Road, (l) signing and pavement marking, (m) erosion and sediment control, (n) stormwater management facilities, (o) Transportation Management Plan, (p) landscaping, (q) quality assurance and quality control, and (r) overall project management. Refer to the details provided herein for the scope of work, technical information and requirements.

1.2 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 to surveying, roadways, drainage, structures, pedestrian facilities, noise abatement, stormwater management, erosion and sediment control, temporary traffic control devices and Transportation Management Plan, pavement marking, signs and guardrail. Other data collection and technical studies anticipated include, but are not limited to: stormwater management analyses, design and documentation; noise analysis; lighting analysis; further traffic analysis for signal operations; geotechnical investigation; borings and analysis; materials analysis; and hydraulic and hydrologic analysis. Offerors should note that all work performed on this Project shall be completed using English Units.

1.3 Anticipated Environmental Services

Environmental services shall address all items necessary for complying with the commitments identified in the June 26, 2012 Categorical Exclusion (“CE”) included in the RFP Information Package. 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 “Permittee”) and shall provide for any necessary stream and/or wetland compensation required by permits to accomplish the work. Additionally, the Design-Builder shall provide permanent noise mitigation in compliance with the Virginia State Noise Abatement Policy and the Highway Traffic Noise Impact Analysis Guidance Manual.

The Design-Builder will comply with all environmental commitments during design and construction as identified in the NEPA decision documents. This includes any NEPA related work such as the NEPA Document Re-evaluation for Right of Way Authorization, NEPA Document Re-evaluation for Plans, Specifications and Estimates Authorization, and the Environmental Certification/ Commitments Checklist.

The Design-Builder shall obtain all necessary environmental clearances and/ or construction permits required to accomplish the work as noted in Part 4, General Requirements of the Contract, Section 2.3. The Design-Builder will be the Permittee. The Design-Builder shall be responsible for performing necessary design and field investigations required to support acquisition of necessary water quality permits through the appropriate regulatory agencies.

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 proposed by the Design-Builder, that are acceptable to VDOT, may require additional environmental technical studies and analysis. The Design-Builder will be responsible for any additional environmental studies or analysis to support the Design-Builder proposed changes in scope. VDOT will be responsible for the preparation of NEPA document reevaluations, if required.

1.4 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 and permanent drainage and utility easements. ~~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 (Instructions for Offerors), Sections 2.8 and 2.9. .

The Design-Builder shall be responsible for assuming all risks associated with exceeding the right of way limits shown on the RFP Conceptual Plans and/or modifying the existing Limited Access lines including any public hearings that may be required. No modifications to the Contract Price or Contract Time(s) will be granted or considered for deviating from the right of way limits as shown on the RFP Conceptual Plans. All right of way acquisition costs (compensation paid to landowners for right of way or easements) will be paid by VDOT, and shall not be included in the Offeror's Price Proposal.

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

1.5 Anticipated Construction Services

Construction services are anticipated to include but are not limited to: temporary detours, earthwork, roadway, bridge and structures (including all necessary excavation, foundation work, substructure work, and superstructure work), pedestrian facilities, retaining walls, milling and overlay of the existing pavement, drainage, traffic control devices, Transportation Management Plan, landscaping, stream relocation, utility relocations/adjustments and coordination, lighting, erosion and sediment control, stormwater management, sound barrier walls (if required), and compliance with all environmental requirements, commitments and permit conditions. The Design-Builder shall provide construction engineering inspection and management, quality assurance and quality control testing for all materials manufactured off-site, including plant quality assurance inspection and testing excluding the items listed under Section 2.4514.2 of this document.

1.6 Coordination with Adjacent Project (Town of Leesburg)

The Design-Builder shall be responsible for coordinating with contractors of other construction projects in the vicinity of the Sycolin Road Project in accordance with Section 3.6 of Part 4. In addition, the Design-Builder shall organize and conduct joint meetings (to which VDOT and the Town of Leesburg shall be invited) with other Contractors on a quarterly basis at a minimum, or as requested by VDOT. The ultimate purpose of these meetings is to facilitate achievement of the Sycolin Road Overpass construction. It is expected that progress milestones will be jointly developed and mutually agreed to by the Design-Builder and Contractors for the project listed below.

Proposed Widening for Sycolin Road - Phase I - IV Construction

From: Approximately 440' North of County Line

To: Approximately 600' south of Bolen Park Access Road

Project No.: U000-253-R07, P101, C501 (UPC # 91474)

Status: Contract will be awarded in 2012

VDOT Contact: Calvin Britt (703) 259-2961

2.0 PROJECT TECHNICAL INFORMATION & REQUIREMENTS

The Offeror's proposed conceptual design shall meet all requirements of the RFP Documents. Any proposed deviations from the requirements of the RFP Documents by the Offeror shall be in accordance with Part 1 (Instructions for 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 deviations that result in a modification to the Contract Documents then the Value Engineering Proposal process as described in Section 104.02 of Division I Amendments to the Standard Specifications (Part 5) shall be followed.

2.1 References and Information

The design, right of way acquisition, 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 applicable version of the documents listed herein that were current as of the advertisement date of the RFP, or latest Addendum for this Project. 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 before it is included in the Contract Documents.

The VDOT 2007 Road and Bridge Specifications, and its associated Special Provision Copied Notes, Special Provisions, and Supplemental Specifications 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 the Part 3 Articles 6 and 7, Part 4, Article 6 and the 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 largely not provided to the Offerors in this RFP package, but these items are to be used as manuals for design and construction. Item (c) is included with the RFP Information Package for the ease of the Offeror's reference.

(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)
- 49CFR Part 24 – The Uniform Relocation Assistance and Real Properties Acquisitions Act of 1970
- AASHTO A Policy on Design Standards Interstate System, 5th Edition, January 2005
- AASHTO A Policy on Geometric Design of Highways and Streets, 5th Edition, 2004
- AASHTO Construction Handbook for Bridge Temporary Works, 1st Edition, 1995, 2008 Interim
- AASHTO Guide for Design of Pavement Structures (Rigid Pavement and Flexible Pavement), 1993 Edition
- AASHTO Guide for Protective Screening of Overpass Structures, 1990
- AASHTO Guide for Roadway Lighting Design, 6th Edition, 2005
- AASHTO Guide for the Development of Bicycle Facilities, 1999
- AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2004
- AASHTO Guide Specifications for Seismic Isolation Design, 3rd Edition
- AASHTO Guide Specifications for Structural Design of Sound Barriers
- AASHTO LRFD Bridge Construction Specifications, 3rd Edition, 2010, with 2011 Interims
- AASHTO LRFD Bridge Design Specifications, 6th Edition, and 2012 and VDOT Modifications
- AASHTO Manual of Bridge Evaluation, 2nd Edition, 2010, including current interims
- AASHTO Manual for Assessing Safety Hardware, First Edition, 2009
- AASHTO Roadside Design Guide, 4th Edition, 2011
- AASHTO Standard Specifications for Structural Supports of Highway Signs, Luminaires, and Traffic Signals, 2009 Edition, with 2010 and 2011 Interim Revisions
- AASHTO's Manual of Bridge Evaluation, 2nd Edition, 2010, and 2011 Interim Revisions
- 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/tecbtln1.PDF)
- DCR Virginia Erosion and Sediment Control Handbook, Third Edition, 1992
- DCR Virginia Stormwater Management Handbook, Vol. 1 and Vol. 2, First Edition, 1999
- DCR Virginia Stormwater Management Program Technical Bulletin 1 (See http://www.dcr.virginia.gov/stormwater_management/documents/tecbtln1.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
- Transportation Research Board Highway Capacity Manual, 2010 Edition
- Guideline for Context Sensitive Solutions/Design, February 25, 2004
- Highway Traffic Noise Impact Analysis Guidance Manual, dated September 16, 2011
- IEEE National Electric Safety Code
- 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
- 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, 2009 (including 2010 revisions)
- VDOT Construction Inspection Manual, April 2008
- VDOT Construction Manual, 2005 (including July 2008 revisions)
- VDOT Current Land Use Permit Manual
- VDOT Drainage Manual, Revised September 2011 (including current Errata Sheet)
- VDOT Guardrail Installation Training Manual (“GRIT”), May 2011
- 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 Manual of Instruction for Material Division, including revisions through July 2011

- VDOT Manual of Structure and Bridge Division, Vol. V Series
- VDOT Materials Division Approved List, May 2012
- VDOT Materials Division Memorandum Number MD299-07 for Materials Acceptance, October 4, 2007
- VDOT Policy for Integrating Bicycle and Pedestrian Accommodations
- VDOT Policy Manual for Public Participation in Transportation Projects, updated August 2011
- VDOT Post Construction Manual, May 2011 Edition
- 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 through July 2011
- VDOT Road Design Manual, Vol. I, including all revisions
- VDOT Survey Manual, 2010 Edition, including 2011 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, June 2011
- 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)

(b) Reference Manuals

- AASHTO's Highway Safety Manual, 1st Edition, Vol. 1-3, 2010
- 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: 6th Edition, with 2011 AASHTO Interim Revision
- 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
- FHWA publications HDS-6, HEC-11, HEC-14, HEC-15, HEC-18, HEC-20, HEC-22, and HEC-23
- gINT[®] Manual
- Institute of Electrical and Electronics Engineer (IEEE) Standards

- International Mechanical Code
- International Telecommunication Union (ITU) Requirements
- ISEE Blasters Handbook (Current Edition)
- National Electric Code (“NEC”)
- National Electric Safety Code (NESC) Standards
- 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)
- Virginia Calibration Methods, June 2011
- Virginia State Noise Abatement Policy, July 13, 2011
- Virginia Test Methods Manual, May 2012
- [Virginia Uniform Statewide Building Code](#)
- [Town of Leesburg Design and Construction Standards Manual \(DCSM\)](#)

(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)
- c105hf1 Subcontracting, December 19, 2008
- S100B00 Project Communication and Decision Making for Design-Build Projects, January 3, 2005c, Reissued August 2009
- S102CF1 Domestic Material, February 26, 2009
- S107HF1 DBE Program Requirements, December 10, 2010
- SF001AF Predetermined Minimum Wage Rates, July 2008
- SS51202 Supplemental Section 512—Maintaining Traffic Design-Build Projects, December 2, 2009

Environmental:

- S107E02-0910 Volatile Organic Compounds (“VOC”) Emissions Control Areas, August 12, 2010
- 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
- Special Provision for Storm Water Pollution Prevention Plan (“SWPPP”), February 19, 2009

Geotechnical/Materials:

- S302B00-0708 Restoring Existing Pavement, January 14, 2008c
- SPCN c109g02-1209 Polymer Modified (PG 76-22 and PG 70-28) Asphalt Cement Adjustment, November 1, 2009
- SS20801 Subbase and Aggregate Base Material, May 7, 2010
- SS21108 Asphalt Concrete, August 3, 2011
- SS21202 Joint Materials, June 28, 2011
- SS21402 Hydraulic Cement, January 28, 2008
- SS21501 Hydraulic Cement Concrete Admixtures, January 28, 2008
- SS21705 Hydraulic Cement Concrete, January 27, 2011
- SS22101 Guardrail, January 6, 2012
- SS22201 Masonry Units, June 28, 2011
- SS22401 Castings, November 15, 2007
- SS23202 Pipe and Pipe Arches, July 29, 2010
- SS24501 Geosynthetics, December 9, 2011
- SS24701 Reflective Sheeting, February 10, 2011
- Special Provision for Controlled Blasting, April 14, 2008
- Special Provision for Design-Build Tracking (“DBT”) Numbers, December 8, 2009
- Special Provision For Elastic Inclusion, November 24, 2009
- Special Provision for 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, revised 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
- Special Provision for Planing Asphalt Concrete Pavement, December 2010
- Special Provision for Section 315 – Asphalt Concrete Pavement, November 25, 2009
- Special Provision for Section 315 – Rideability for Asphalt Concrete Pavement, November 23, 2009
- Supplemental Specification – Section 248 — Stone Matrix Asphalt Concrete, April 1, 2012
- Supplemental Specifications, Sec. 2.1.1 (c) – Soil Design Parameters for Sound Barrier Walls, Retaining Walls and Non-Critical Slopes, April 14, 2011

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
- SS30202 Drainage Structures, April 13, 2011
- SS30505 Earthwork, May 20, 2011
- SS31507 Asphalt Concrete Pavement, July 19, 2011
- SS50101 Underdrains, January 25, 2010

Structure & Bridge:

- SPCN Demolition Notification for Structures Not Requiring Asbestos Removal, June 25, 2009
- Approved Retaining Wall Systems List, dated February 25, 2011
- Special Provision for Architectural Treatment, June 29, 2012
- Special Provision for Corrosion Resistant Reinforcing Steel, May 18, 2012
- Special Provision for Dismantling and Removing Existing Structures or Removing Portions of Existing Structures, August 5, 2008
- Special Provision for Drilled Shafts, November 18, 2009
- Special Provision for Dynamic Pile Testing for End Bearing Piles for LRFD, December 10, 2009
- Special Provision for Dynamic Pile Testing for Friction Piles for LRFD, December 10, 2009
- Special Provision for Micropiles, January 20, 2010
- Special Provision for MSE General Notes, April 10, 2009
- Special Provision for MSE Walls (Modular Cantilever Facing), December 10, 2009
- Special Provision for Quality Assurance/Quality Control (“QA/QC”) for the Construction of Deep Foundation Systems, December 10, 2009
- Special Provision for Sound Barrier Walls, April 4, 2012
- Special Provision for Powder Coated Galvanized Guardrail, dated October 10, 2010
- Special Provision for Structure Demolition, January 7, 2010
- Special Provision for T-Wall Retaining Wall System, December 10, 2009
- Special Provision for Wave Equation Analysis for LRFD, November 10, 2009
- SS40101 Structure Excavation, November 16, 2010
- SS40202 Hydraulic Cement Concrete Operations, December 17, 2010
- SS40502 Prestressed Concrete, December 20, 2010
- SS40702 Steel Structures, December 20, 2010
- SS41401 Riprap, January 25, 2010

Traffic Engineering:

- S704E02-1211 Type B, Class VI Pavement Line Marking, October 21, 2011
- S704F01-1209 Transitory Pavement Markers (“TPM”), December 12, 2009
- SPCN Locating, Removing and Disposing of Recessed Pavement Markers and Raised Snow-Plowable Markers, October 17, 2010
- SPCN Uniformed Flaggers, September 29, 2008a
- Special Provision for CG-12 Detectable Warning Surface, July 2008
- Special Provision for Emergency Preemption Equipment, August 10, 2010
- 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 Temporary Construction and Permanent Pavement Markings, November 8, 2011

- Special Provision for Remove Existing Signal Equipment, February 8, 2012
- Supplemental Section 703 – Traffic Signals, January 6, 2009
- Supplemental Section 701 – Traffic Signs, January 22, 2009
- SS70003 General (Traffic Control Devices), June 9, 2008
- SS70401 Pavement Markings and Markers, October 14, 2011

General Conditions:

- Special Provision for 2010 Division I Amendments to the Standard Specifications General Provisions for Design-Build Contracts Between Department and Design-Builder
- Special Provision for Field Office, November 24, 2009
- Special Provision for Section 105.02 – Plans and Working Drawings (Contract Management Software®), June 13, 2007
- Special Provision for Section 301 – Clearing and Grubbing, November 15, 2006
- Special Provision for Work Zone Traffic Control Management for Design-Build, revised November, 2009
- SS52200 Supplemental Section 522—Partnering, January 14, 2008

Landscaping

- Special Provision for Section 244 Roadside Development Materials, dated August 29, 2008
- Special Provision for Section 605 Planting, dated March 30, 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-Builder's design, the Design-Builder shall use a standard VDOT Special Provision for the element of work. If a standard VDOT Special Provision is not available, 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

Supplemental Specifications included in this contract document shall govern over the VDOT specifications, design standards and manuals. Special Provisions included in this contract document or other applicable Special Provisions approved by VDOT shall govern over Supplemental Specifications, the VDOT specifications, design standards and manuals. Special Provision Copy Notes approved by VDOT and requirements specified within the text of this RFP shall govern over Special Provisions, Supplemental Specifications and VDOT specifications, design standards and manuals.

2.1.2 RFP Information Package

An RFP Information Package CD-ROM will be provided to the point of contact for each short-listed firm. 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 Plans, including electronic reference files
- Categorical Exclusion (“CE”), dated June 26, 2012.
- Document Re-evaluation for Right of way (“RW”) Authorization, dated July 2, 2012
- Document Re-evaluation for Plans, Specifications and Estimates (“PS&E”) Authorization, dated July 2, 2012
- VDOT Permit Determination, dated January 11, 2012
- Environmental Certification/Commitments Checklist, dated July 2, 2012
- VDOT cultural resources eligibility and effect recommendation letter, dated March 2, 2012; and Virginia Department of Historic Resources concurrence, dated April 18, 2012
- VDOT Air Report, dated June 27, 2011.
- Noise Impact Analysis Technical Report and Appendices, dated January 30, 2012.
- VDOT Hazardous Materials Summary Report, dated April 3, 2012.
- Geotechnical Engineering Data Report, dated June 21, 2012.
- Soil Design Parameters for Sound Barrier Walls, Retaining Walls and Non-Critical slopes, dated April 14, 2011.
- Preliminary Tuscarora Creek - River Mechanics Analysis
- Stage I Bridge Report dated May 31, 2012
- Approved Scoping Documents
- Design Public Hearing Transcript
- Design Approval
- Value Engineering Report and Final Approval/Rejections
- Preliminary plans for Phase III plans- Adjacent Town Project
- VDOT Stormwater Program Advisory 12.02 (SWPA 12.02), April 26, 2012

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

2.2 Structures and Bridges Proposed Bridge B-666 – Sycolin Road over Route 7-15 Bypass and Proposed Culvert D-656

2.2.1 Sycolin Road Overpass (B-666) General

Design-Builder shall provide bridge B-666 with the geometric cross section shown in the RFP Conceptual Plans. The bridge cross section will provide four, 12-foot wide, undivided lanes; a 6-foot wide, raised, concrete sidewalk adjacent (as a buffer strip) to the south bound lanes, and a 14-foot wide shared-use-path located adjacent to the north bound lanes. The resulting out-to-out bridge width is 74 feet - 6 inches when the appropriate gutter and curb offsets are included. Provide pedestrian fences on each side of the bridge and provide lighting.

The total bridge length and span configuration shown in the conceptual plans are based on the future widening of Route 7-15 Bypass. The proposed bridge design shall incorporate the future widening of Route 7-15 Bypass and accommodate the required horizontal and vertical clearances. The minimum vertical clearance to be provided over the Route 7-15 Bypass shall include the future widening of the Route 7-15 Bypass as shown in Conceptual Plans and shall meet VDOT requirements of 16 feet-6 inch minimum vertical clearance above the travel lanes, auxiliary lanes, and shoulders.

All construction shall be staged as necessary to maintain existing travel lanes on Route 7-15 Bypass for the duration of construction and in accordance with the provisions of Section 2.10.1 – Maintenance of Traffic.

The Design-Builder shall submit a preliminary type, size and location plan to VDOT, and Town of Leesburg for review and approval prior to proceeding with final design. VDOT will not review any final design submittals until the preliminary plans have been submitted to VDOT.

Bridge B-666 shall be designed in accordance with AASHTO *LRFD Bridge Design Specifications*, 6th Edition, 2012; VDOT Modifications (IIM-S&B-80); the Additional Substructure and Foundation Criteria attachment (Attachment 2.2A); Proposed Pier protection (Attachment 2.2B) and Architectural Treatment criteria (Attachment 2.2C). 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.

Future wearing surface loads and construction tolerance loads shall be utilized in accordance with the most current version of IIM-S&B-80.

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 IIM-S&B 81. Epoxy coated reinforcing steel shall not be used.

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.

2.2.2 Sycolin Road Overpass (B-666) Superstructure

Either prestressed concrete or structural steel beams/girders may be used and designed as composite with the cast-in-place concrete deck. Provisions shall be made in the design to accommodate the dead load deflection of the girders by cambering the girders in accordance with VDOT criteria . Maximum beam spacing shall be limited to 12'-0". Bridge deck overhang shall not exceed 0.3 times the beam spacing.

For structural steel alternatives, the material shall be uncoated weathering grade steel if the conditions meet the requirements of the Federal Highway Administration Technical Advisory T5140.22. The use of HPS (high performance steel) 70 ksi will be permitted with prior approval from the State Structure and Bridge Engineer. The use of HPS 100 ksi will not be permitted. Cover plates on continuous rolled beam sections in the negative moment areas and longitudinal stiffeners shall not be used. Fatigue prone details shall be minimized. No field welding to structural steel members, primary or secondary, shall be permitted except as allowed by the VDOT Manual of Structure and Bridge Division, Vol. V. Weathering steel shall be unpainted except as required by Section 407 of the Specifications. Fractical-critical components will not be permitted.

For prestressed concrete alternatives, the precast concrete Bulb-T sections adopted by VDOT shall be used. AASHTO shapes will not be permitted. The use of HPC (high performance concrete) for prestressed concrete beams in excess of 8,000 psi concrete strength will not be considered.

Approach slabs shall conform to the requirements of the VDOT *Manual of the Structure and Bridge Division*, Volume V – Parts 2 and 3. A sleeper pad will be required when the bridge abutment is either integral or semi-integral.

2.2.3 Sycolin Road Overpass (B-666) Substructure

A preliminary design submittal indicating the Design-Builder's general plan for the Sycolin Road Overpass and an elevation view of the substructure units, including a description of the finishes that will be applied, is required and must be approved by VDOT prior to the Design-Builder submitting final design plans for the Sycolin Road Overpass bridge.

Concrete surfaces shall receive Architectural Treatment as noted in Attachment 2.2.C – Architectural Treatment Criteria and follow the requirements of the Special Provision for Architectural Treatment.

All substructures shall meet the crash loaded guidelines in AASHTO 3.6.5 – Vehicular Collision Force

2.2.4 Sycolin Road Overpass (B-666) Miscellaneous

The bridge shall be designed to support the following utilities including their associated structural supports and/or hangers:

- Lighting on the bridge
- Conduit and cable as may be required in the overall project design and based upon coordination with VDOT utilities and The Town of Leesburg.

VDOT Standard BR27C-7 and BR27C-8 Railings shall be used on the shared-use-path side of the bridge, and a VDOT Standard BR27C-10 Railing shall be used on the concrete sidewalk side of the bridge. The steel railings shall be galvanized and powder-coated (Coal Black, Federal Color No. 27038) in accordance with the Special Provisions for Powder Coating.

Pedestrian Fencing, Type C, shall be used on both sides of the bridge for the full length of the bridge. The pedestrian fencing shall be black, vinyl coated. Standard Details for fencing shall be modified as necessary to accommodate the light poles and signage.

Adequate drainage for the bridge structure must be provided; in particular, the designed system must be able to drain and control water that is on the deck and shared-use-path. 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. Deck drains, if required, shall collect and pipe water to the storm water collection system for Sycolin Road. Such piping system shall be accessible for future maintenance. Drainage from the bridge deck shall not be piped or released to the roadway or roadway drainage system on Route 7-15 Bypass beneath the bridge. 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.

Timber elements will not be accepted.

Pile bent supports shall not be used at any grade separation(overpass/underpass).

No bridge will be designed as fracture critical unless approved by the Department.

Three sided Steel “Tub” girders are not permitted.

2.2.5 Culvert (D-656) General

Design-Builder shall provide culvert D-656 to pass the design storm specified under Section 2.8 Hydraulics. Preliminary analyses studied a box culvert but alternative designs are permitted. Apply structural design and construction meeting the requirements above for bridge B-666 as appropriate for the type of culvert or bridge provided. AASHTO LRFD requirements shall apply.

2.2.6 Structure Load Ratings

The following structure load ratings analyses and reports will be required to be submitted by the Design-Builder to VDOT and approved prior to opening the structure to traffic (whether temporary or permanent traffic configuration. These represent hold points in the Design-Builder's CPM Schedule.

1. A load rating is required when an existing structure is modified and is intended to carry traffic in a temporary configuration. Load rating shall include changed conditions and loadings, including temporary barrier services.
2. A load rating is required when a newly constructed structure or phased portion of the new structure is intended to carry traffic in a temporary configuration.
3. A final, As-Built, load rating analysis of the new structure reflecting traffic in its final configuration. This load rating should incorporate any As-Built changes that may have made, which in the judgment of the Engineer will affect the load rating (e.g., minor changes in stiffener or diaphragm locations may not affect a load rating).

The load rating reports shall be submitted in accordance with IIM-S&B-86.

No structure shall be placed into service if a Load Restriction (Posting) is required based upon the load rating analysis. The Design-Builder is responsible for all remedial measures to make corrections to the design or as-built bridge.

2.2.7 Shop Drawings

The Design-Builder shall review and approve working/ shop drawings and submit three (3) approved sets to VDOT for the proposed bridge structure. Reference should be made to Article 105.10 of the 2007 VDOT Road and Bridge Specifications. The working/ shop drawings shall be approved by a Professional Engineer registered and licensed in the Commonwealth of Virginia

2.2.8 FHWA Bridge Construction Unit Cost Report

The Design-Builder shall submit Estimated Quantities along with the associated unit costs for all standard and non-standard 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 provided to FHWA. This data shall be submitted to VDOT within 90 days of the VDOT's approval of the construction plan submittal.

2.2.9 Safety and Acceptance Inspection for the Proposed Bridge

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 Roadway

The roadway inventory information and major roadway design criteria are summarized in the Design Criteria Table (Attachment 2.3). Offerors are on notice that the entirety of the information contained in the Design Criteria Table and Section 2.3 of Part 2, 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, the Offeror certifies that it will be fully compliant with such minimum requirements.

Functional Classification

Route 7-15 Bypass is classified as an Urban Principal Arterial. The VDOT geometric design standard that will be utilized for Route 7-15 Bypass will be GS-5 Freeway in rolling terrain with a minimum design speed of 60 mph. Sycolin Road is classified as an Urban Collector. The VDOT geometric design standard that will be utilized for Sycolin Road will be GS-7 in rolling terrain with a minimum design speed of 40 mph. The design minimum vertical clearance over Route 7-15 Bypass is 16'-6". The vertical clearance must consider the future widening of the Route 7-15 Bypass as shown on the RFP plans. Typical sections for Sycolin Road and the Route 7-15 Bypass are provided in the RFP Plans.

Sycolin Road improvements begin north of Hope Parkway and continue north to Gateway Drive. Sycolin Road will be widened to provide two (2) through lanes in each direction. Route 7-15 Bypass improvements include removing the existing turn lanes and signal, as well as the installation of guardrail and concrete median barrier. Construction of the Sycolin Road Overpass will require the use of retaining walls at the bridge abutments and along the west side of Sycolin Road, south of Route 7-15 Bypass. A sidewalk that is five (5) feet wide along with a four ~~(4) and a half (4.5)~~ feet wide buffer from the back of curb will be provided along the southbound side of Sycolin Road and a paved Shared Use Path that is ten (10) feet wide along with ~~a seven and a half (7.5) an eight (8)~~ feet wide buffer from the back of curb will be provided along the northbound side of Sycolin Road throughout the Project Limits.

All intersections shall be designed to accommodate, as a minimum, an AASHTO WB-50 design vehicle.

Offerors shall note that the southern terminus of the Project ties into an adjacent future project by the Town of Leesburg. This adjacent future project is known as Sycolin Road - Phase III and is scheduled to start in summer 2013. The Design-Builder will be required to coordinate Project termini and tie-in points with the adjacent future project to assure similar geometrics and lane continuity are provided.

2.4 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.
- Retaining walls shall be designed to accommodate all 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.
- 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.
- Mechanically stabilized earth ("MSE") walls that require traffic protection at the top shall utilize barriers and/or railings on moment slabs.
- For walls higher than 15 feet, design walls using shear strength and compressibility parameters based on laboratory test results for the soils that will support the walls.
- Retaining walls shall have the appropriate VDOT Standard BR27C Railing on top of concrete moment slab when located adjacent to a roadway shoulder.

- Retaining wall shall receive Architectural Treatment as noted in Attachment 2.2C – Architectural Treatment Criteria and follow the requirements of the Special Provision for Architectural Treatment.

2.5 Environmental

2.5.1 Environmental Document

In accordance with the requirements of the National Environmental Policy Act (“NEPA”), and in cooperation with FHWA, VDOT completed a Categorical Exclusion (“CE”) for the Project on April 25, 2012. Preliminary NEPA Document Re-evaluations for Right of Way (“RW”) Authorization and for Plans, Specifications and Estimates (“PS&E”) Authorization, and a preliminary Environmental Certification/Commitments Checklist have also been completed by VDOT. These documents are included in the RFP Information Package. The reevaluations and certification are initial documents based on RFP plans and currently available information. VDOT shall complete a final NEPA Document Re-evaluation for RW Authorization prior to RW authorization. VDOT shall complete a final NEPA Document Re-evaluation for PS&E Authorization and final Environmental Certification/Commitments Checklist prior to the VDOT Project Manager releasing the Project for construction.

The Design-Builder shall carry out the environmental commitments during design, right of way acquisition, and construction as identified in the CE, the NEPA Document Re-evaluations for R/W Authorization and PS&E Authorization, and the Environmental Certification/Commitments Checklists. All commitment compliance shall be supported by appropriate documentation, to be provided by the Design-Builder to the VDOT Project Manager.

Any changes in the scope or footprint of the established basic Project concept, proposed by the Design-Builder and 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 the VDOT Project Manager of plan revisions, scope changes, and providing any necessary studies and other necessary information to support VDOT’s completion and reevaluation of the NEPA document. VDOT will be responsible for the coordination of any revised NEPA or associated environmental documentation with FHWA for concurrence of VDOT’s conclusions. The Design-Builder shall then carry out any additional environmental commitments that result from such coordination at its sole expense and at no additional cost to the Project.

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

2.5.2 Cultural Resources

VDOT completed coordination with the Virginia State Historic Preservation Officer (“VA SHPO”) in compliance with Section 106 of the National Historic Preservation Act. On

April 14, 2012, the SHPO determined the Project would have No Adverse Effect on eligible historic properties in the Area of Potential Effect.

The Design-Builder shall avoid any project-related activities on historic properties, including but not limited to staging, borrow/disposal, and any temporary or permanent easements. The Design-Builder shall submit written notification to the VDOT Project Manager if the design plans or construction methods necessitate any activity on historic properties. VDOT will determine whether the VA SHPO must be consulted.

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

2.5.3 Water Quality Permits

VDOT completed a Permit Determination (dated January 11, 2012) concluding that water quality permits are required for the project based on the preliminary plans. The Design-Builder will be responsible for, but not limited to, the following water quality permitting activities: determination, coordination, application, acquisition, reporting and administration of required state and federal water quality permits and permit modifications. VDOT's preliminary permit determination for the Project is included in the RFP Information Package.

The Design-Builder shall determine the applicability of water quality permits for the project (to include utilities to be relocated by the Design-Builder for the Project). Should it be determined that Water Quality Permits are required, the Design-Builder shall conduct the preliminary field assessment including, but not limited to, wetland delineation, stream assessment, and permit impact sketches. The Design-Builder shall also determine the required sequencing methodology to limit project impacts to wetland systems. The Design-Builder shall utilize this information to obtain required permits.

The Design-Builder will obtain all necessary environmental clearances, permits, and approvals required to accomplish the work as noted in Part 4 (General Conditions of Contract), Article 2.6. 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.

If the Design-Builder determines water quality permits are not required, 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.

If the Design-Builder determines that wetlands and/or stream mitigation is required to secure the permit authorization, the Design-Builder will provide the required compensatory mitigation. The Offeror shall account for all costs associated with water quality permit acquisition, as well as compensatory mitigation.

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 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.

After receiving the VDOT Project Manager’s release of the work, the Design-Builder shall notify VDOT and the regulatory permitting agencies in writing 14 days prior to beginning work in the jurisdictional areas covered by the water quality permits.

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

At the conclusion of the Project, the Design-Builder shall notify VDOT and the regulatory permitting agencies in writing of the completion of the work in the jurisdictional areas covered by the water quality permits. At the completion of the Project, the Design-Builder is required to transfer any VMRC permit back to VDOT.

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

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

2.5.4 Threatened and Endangered Species

VDOT has performed a preliminary review to determine potential effects of the Project on threatened or endangered (T&E) species. This review indicates that the Project will have no adverse effect on T&E species. Offerors shall be advised that new and updated T&E information is continually added to agency databases. The Design-Builder will be responsible for any subsequent coordination with and obtaining updated information, requirements, and clearances from environmental regulatory agencies that provide threatened and endangered species oversight. This additional T&E species coordination is also a standard component of the 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 practicable. The Design-Builder shall provide to the VDOT Project Manager copies of all documentation and correspondence with regulatory agencies.

2.5.5 Hazardous Materials

VDOT performed a cursory field assessment and database review to determine the potential for hazardous materials and/or contamination within the Project area. The Hazardous Materials Summary Report (dated April 3, 2012) providing the findings of that assessment is contained in the RFP Information Package.

The Hazardous Materials Summary Report concluded that no recognized environmental conditions (REC) are present on properties within the proposed project area. The Design-Builder will be responsible for updating and supplementing the Hazardous Materials Summary Report based on final right of way and construction plans and in accordance with American Society for Testing and Materials (ASTM) standards.

For asbestos waste and other 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.

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

All solid waste, hazardous waste, and hazardous materials shall be managed in accordance with all applicable federal, state, and local environmental regulations. The Design-Builder shall be responsible for the development of a Spill Prevention, Control, and Countermeasure Plan as required by regulation and for submission of any required plan to the VDOT Project Manager prior to start of construction. The Design-Builder shall 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-Builder shall not acquire property until the Hazmat Phase 1 Assessment and any mitigation required is complete. This shall represent a hold point in the Design Builder's CPM schedule.

2.5.6 Noise Mitigation

2.5.6.1 Permanent Noise Mitigation

The Design-Builder will provide permanent noise mitigation in compliance with the Virginia State Noise Abatement Policy and the Highway Traffic Noise Impact Analysis Guidance Manual. The final barrier location(s) and dimension(s) will be determined during the final design noise analysis. A Noise Abatement Design Report (NADR) shall be furnished by the Design-Builder at its sole cost and expense. The final noise mitigation design will use the design year traffic volumes defined in the "Noise Impact Analysis Technical Report – Sycolin Road Overpass Of Route 7-15 Bypass in Leesburg" and associated noise levels. The Noise Impact Analysis Technical Report is included in the RFP Information Package.

A preliminary noise evaluation was performed by VDOT and a more-detailed review shall be completed by the Design-Builder during final design. As such, 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.

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. Once concurrence is achieved the Design-Builder shall prepare and mail letters "certified return receipt" to benefitted receptors. Upon completion of the citizen survey the Department shall prepare a second concurrence letter documenting the results. All sound barrier walls should be named as presented within the NADR.

All sound barrier walls recommended for construction and concurred with by the Chief Engineer 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 barrier 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 sound barrier wall are proposed following concurrence from the Chief Engineer or FHWA, then additional documentation will be provided with the plan set when the set is submitted to the Department for review. This will include a plan and profile view of the roadway with the alignments recommended sound barrier wall and the proposed design. A justification of the deviation will be included with the plan set. The revised NADR chapter for the sound barrier wall for which modification is requested will be submitted with this additional information.

The Noise Abatement Section Manager's written approval of the barrier deviation will be required before the Department can approve AFC Construction Documentation.

A key plan will be clearly labeled to show the location of the ground-mounted combo wall (sound barrier wall on retaining wall) and bridge-mounted sound barrier walls.

Plan view will provide the alignment of the sound barrier wall 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 sound barrier walls will be included on both the plan and profile views.

Access may be provided by access doors for personnel. Gaps may be provided in the walls with a 3:1 ratio of barrier overlap.

When located adjacent to concrete traffic barriers, sound barrier walls shall have a minimum set-back from the back of the concrete traffic barrier of at least one (1) foot. The area between the concrete traffic barrier and sound barrier shall be filled with Aggregate #78 or approved equivalent to prevent debris from collecting in the area.

Sound barrier wall design will be coordinated with first responders to ensure access to fire hydrants and other emergency equipment.

Sound barrier walls shall receive Architectural Treatment as noted in Attachment 2.2.C – Architectural Treatment Criteria and follow the requirements of the Special Provision for Architectural Treatment.

General notes that state the following will be included:

- “Sound barrier walls will be designed and constructed in accordance with the Special Provisions for Sound Barrier Walls included in the Agreement Requirements.”

- “Sound Barrier walls will be designed and constructed in accordance with the roadway cross-sections in the plans dated [insert date]/or sheets numbered [insert sheet numbers].”
- Sound Barrier walls will be designed and constructed in accordance with the Soil Design Parameters for Sound Barrier Walls, Retaining Walls and Non-Critical Slopes, dated April 14, 2011.
- “Access doors will be determined prior to fabrication, with review and approval of VDOT maintenance staff.”
- “All sound barrier walls will have sound absorptive finish, unless otherwise noted.”

The Design-Builder is responsible for obtaining local noise ordinance variances prior to scheduling of night time operations pursuant to Section 1.11 (Third Parties and Permitting).

2.5.7 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 27, 2011) 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 a moderate ozone nonattainment area, a fine particulate matter (PM2.5) nonattainment area, and a volatile organic compounds (VOC) and nitrogen oxides (NOx) emission control area. As such, all reasonable precautions should be taken to limit the emissions of VOC, NOx, and particulate matter. The Air Quality Analysis describes precautionary requirements and Department of Environmental Quality air pollution regulations applicable to the project. Also, the Design-Builder will be required to adhere to the limitations outlined in the Special Provision for Volatile Organic Compound Emissions Control Areas.

2.5.8 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 require 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 PCE, 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.

2.6 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.

Offerors are advised that the survey provided in the RFP Information Package is not represented to be complete for purposes of designing the Project, and that Design-Builder’s scope of work includes performing all additional surveying that is necessary to supplement the above-referenced survey as required for design purposes.

The Design-Builder will be responsible for obtaining any additional survey data, including all right of entry and land use permits, locating and/or designating underground utilities, DTM, utility test holes and obtaining other related data necessary for the design, right of way acquisition, limited access revisions and construction of the project. Additionally, the Design-Builder will be responsible for any update (property owner changes, subdivisions, etc.) that may occur and 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 any survey control damaged, destroyed or located within the foot print of the final design construction limits. The control will be reestablished by a land surveyor licensed in the Commonwealth of Virginia with LD-200 information and supporting computations submitted to the Project Manager.

The Design-Builder shall be responsible for providing and setting all Right-of-Way monuments according to the Survey Manual. RM-2 type monuments will be required. The Design-Builder shall include monumentation on the final as-built plan in accordance with the Department's Survey Manual.

2.7 Geotechnical Work

VDOT completed a preliminary geotechnical subsurface investigation for the Sycolin Road Overpass encompassing the limits of this project. The results of the preliminary investigation are presented in the Geotechnical Engineering Data Report, dated June 21, 2012 and 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 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, 2012 and 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, bridge structures, storm water management facilities, minor structures including drainage pipe, 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 Town of Leesburg, 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, rock, aggregate, concrete, asphalt 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 with their depth limits in accordance with the requirements outlined in Chapter 3 of the VDOT Materials Division MOI. The Design-Builder shall provide to VDOT electronic copies of all subsurface explorations in accordance with the boring log template available on the website included in Chapter 3 of the VDOT Material Division MOI. The electronic files shall be provided by a certified Professional Geologist or a suitably qualified registered Professional Engineer in the Commonwealth of Virginia, in gINT© software. Upon request, VDOT will provide its gINT and ACCESS file structures for the Geotechnical Database Management System (“GDBMS”) to the Design-Builder for the borings contained in Preliminary Geotechnical Engineering Data Report.

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

The Design-Builder shall submit to 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. 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 document to assure that it has 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 Geotechnical Requirements

Blasting will not be permitted on this project without the approval of the VDOT Project Manager.

2.7.1.1 Minimum Settlement Criteria

The Design-Builder shall analyze methods to minimize differential settlement of the approach to Bridge B-666 (bump at the bridge) for new construction and provide construction recommendations to address soil-structure interaction to accommodate the construction methods applied to this Project. All geotechnical work shall be completed to satisfy baseline and post-construction contract performance requirements.

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, or subject the roadway to flooding.
- Settlement that does not result in damage to adjacent or underlying structures, including utilities.
- For pavement sections, 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. Design-Builder shall notify the Quality Assurance Manager (“QAM”) and VDOT for any non-conformance items.

The Design-Builder shall consider settlement and design foundations for Bridge B-666 Culvert D-656, retaining walls, potential noise barriers, and other structures based upon the criteria defined in Attachment 2.2A entitled Additional Foundation Criteria.

In summary, the Additional Substructure and Foundation Criteria attachment outlines 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 the General Notes. In either case, a General Note shall be placed on the plans to communicate the amount of settlement evaluated and accommodated by the structure. Specific General Note language, along with Notes to Designer are included in the Attachment 2.3.

In either case, 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 certain aspects of retaining wall design are not addressed by LRFD. As such when addressing slope angles for finished grades, settlement of natural soils, lateral earth pressures and global stability, the geotechnical engineering study shall provide design values for friction angle (peak, fully-softened or residual as appropriate), undrained shear strength, soil modulus, one-dimensional consolidation parameters (including the coefficient of secondary compression), lateral earth pressure coefficients, unit densities, the position of the ground water table and stratigraphy as simplified for the geotechnical design. It is not sufficient to state, “Total settlements are expected to be less than 1 inch” if the data are not provided to corroborate such a statement.

2.7.1.2 Geotechnical Requirements for Cut and Fill Slopes

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

- The maximum slope ratio to be used for cut shall not be steeper than 2H:1V and roadway embankment fill slopes shall not be steeper than 3H:1V.
- Improvements to the guardrail and shoulder design may require additional fill. The Design-Builder shall be responsible for designing and constructing a stable fill slope that meets the requirements below for a critical slope.
- Reinforced soil slopes shall not be used to construct critical slopes.

The following factors of safety are to be used with limit-equilibrium methods of analysis to determine factors of safety for representative sections of all soil cut and soil embankment fill slope areas greater than 10 feet in height and/or where slopes are supporting, or are supported by, retaining structures. The factors of safety listed in Table 1 below are valid for subsurface investigations performed in accordance with Chapter 3 of the Materials Division’s MOI, or for site specific investigation plans approved by the District Materials Engineer. Approval of site specific investigation plans with reduced boring frequency may require higher factors of safety.

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

SLOPE ANALYSIS PARAMETERS BASED ON:	FACTOR OF SAFETY	
	INVOLVES STRUCTURE OR CRITICAL SLOPE ¹	NON-CRITICAL SLOPE
IN-SITU OR LAB TEST MEASUREMENTS ^{2,3}	1.5	1.3
NO SITE SPECIFIC TESTS	N/A ³	1.5

Notes:

1. A critical slope is defined as any slope that is greater than 25 feet in height, affects or supports a structure, impounds water, or whose failure would result in significant cost for repair, or damage to private property
2. Site specific in-situ tests include ground water measurements, SPT testing, CPT, and DMT
3. Parameters for critical slopes involving structures must be based on specific laboratory testing
4. Problem soils (very soft soils, very loose soils, fissured or heavily over-consolidated soils), must be analyzed using shear strength parameters determined from appropriate laboratory strength tests in accordance with accepted local engineering practice
5. Problem soils such as silts shall be analyzed for short- and long-term stability using undrained shear strength and residual shear strength parameters, respectively, determined from laboratory shear testing. These residual strength parameters shall be determined by drained direct shear tests using sufficient stress reversals to obtain large strains as discussed in the Corps of Engineers laboratory testing procedures EM-1110-2-1906. Many reversals are required to reach residual strengths and some references suggest using a pre-split sample (Ref. Engineering Properties of Clay Shales, Report No. 1 by W. Heley and B.N. McIver).
6. Construction plans shall specify use of soil types consistent with the parameters used in slope analyses.
7. Incorporate reliability as referenced above.

The following specific minimum requirements are included for embankments constructed on the Project:

- Where settlement is anticipated in foundation or embankment soils, testing and analysis shall be provided to indicate that ninety percent (90%) of the predicted settlement will be completed by the end of construction, that there are no negative impacts on drainage pipes, and that the maximum differential settlement between bridge foundations, abutments and approaches is less than 1.0 inch. Settlement monitoring including settlement plates and surface monuments (settlement points) shall be included to verify estimated results versus actual performance.

2.7.1.3 Geotechnical Requirements for Retaining Walls

All retaining walls shall be designed in accordance with applicable VDOT and AASHTO requirements. 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 an external stability analysis for all walls and submit the results of the analysis, including boring logs, laboratory data, and any other applicable data, to VDOT Project Manager for review. The external stability analysis shall include bearing capacity, settlement, overturning, sliding and global stability evaluations. All computer programs for external analysis shall be acceptable to the Department. Retaining walls shall be designed to control settlements within tolerances identified by VDOT Guidelines for Preparation of Alternate Retaining Wall

Plans. Where undercutting and material replacement is required to reduce settlement or improve external stability, areas requiring repair shall be clearly identified on the plans with notes provided to aid plan review, construction, and inspection. The wall supplier shall provide to the Design-Builder for submittal to VDOT, an internal stability analysis which validates the design of the wall. Reinforced soil slopes shall not be used unless otherwise approved by the Department.

The Design-Builder shall not rely on the retaining system type, dimensions or limits depicted in the preliminary drawings.

2.7.1.4 Minimum Geotechnical Requirements for Storm Water Management Basins

The Design-Builder shall design the Storm Water Management (“SWM”) Basin(s) in accordance with the RFP.

2.7.2 Minimum Pavement Sections

Minimum pavement sections and anticipated locations for these sections are being provided for Proposal preparation purposes only. The anticipated locations for the pavement sections are provided on the RFP Plans included in the RFP Information package. 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 aggregate layers specified below. However, the Design-Builder may propose a change in both material type and thickness for the layer denoted as “subbase” in the minimum pavement sections provided. Any changes to the minimum pavement sections noted herein shall be approved by VDOT. The Design-Builder shall be responsible for the final design and construction of the pavements for the Project in accordance with the Contract Documents.

The Design-Builder shall prepare and incorporate the validated pavement sections into the plans, typical sections, profiles and cross-sections. Pavement sections shall be validated by analysis of projected traffic, analysis of soil conditions and pavement design calculations in accordance with the applicable manuals noted in Section 2.1. This includes drainage and subdrainage requirements to ensure positive drainage both within the pavement structure and on the pavement surface.

In areas of widening, existing shoulders and 1-foot of existing mainline pavement structure shall be fully removed to the subgrade before placing the new pavement section for widening. Pavement layers for widening shall be placed such that the top of the Intermediate Asphalt Course matches grade and cross slope with the milled surface of the existing pavement. The final Surface Asphalt Course shall be placed uniformly over the widened and milled pavement such that the joint between the new widened pavement structure and the existing pavement structure is concealed.

The pavement sections for each roadway segment within this Project are listed below. Any pavement sections requiring replacement or construction outside of those listed shall be designed in accordance with the 1993 AASHTO Guide for the Design of Pavement Structures (1993 Edition) and submitted to VDOT for review.

2.7.2.1 Sycolin Road

The following pavement section shall be used for Sycolin Road:

Surface – 1.5” Asphalt Concrete, Type SM-9.5A **Intermediate** – 2” Asphalt Concrete Type IM-19.0A **Base** – 6” Asphalt Concrete, Type BM-25.0A

Subbase – 6” Aggregate Base Material, Type I, Size No. 21B, connected to a standard UD-4 edgedrain beneath the curb and gutter.

Any existing pavement on Sycolin Road that will not be demolished and reconstructed shall be milled to a depth of 1.5” and resurfaced with 1.5” Asphalt Concrete, type SM-9.5D within the project limits.

The following pavement section shall be used for the shared use path along Sycolin Road:

Surface - 2" Asphalt Concrete, Type SM-9.5A

Base - 6" Plain Aggregate, Type I, Size No. 21B

Hydraulic cement concrete sidewalk shall have a minimum base course of 4” of aggregate base material Type I, Size No. 21A or No. 21B.

2.7.2.2 Route 7-15 Bypass and Shoulders

The following pavement section shall be used for the Route 7-15 Bypass. The typical sections for the paved shoulders shall match the pavement design provided for Route 7-15 Bypass new pavement sections. This minimum pavement section shall also be used to replace any removed or damaged pavement on the inside travel lane and inside shoulder of Route 7-15 Bypass adjacent to the center bridge pier:

Surface – 2” Asphalt Concrete, Type SM-9.5D **Intermediate** – 2” Asphalt Concrete Type IM-19.0A

Base – 9” Asphalt Concrete, Type BM-25.0A

Subbase No. 1 – 8” Aggregate Base Material, Type I, Size No. 21B connected to a standard UD-4 edgedrain located beneath the outer edge of the paved shoulder. Modified UD-1 shall be provided in lieu of standard UD-4 edgedrain for pavement sub-drainage in areas of high groundwater, springs or deep (>15’) cuts; the modification consists of wrapping the aggregate with geotextile drainage fabric.

Subbase No. 2 – 8” Select Material, Type I, Minimum CBR 30 connected to a standard UD-4 edgedrain located beneath the outer edge of the paved shoulder. Modified UD-1 shall be provided in lieu of standard UD-4 edgedrain for pavement sub-drainage in areas

of high groundwater, springs or deep (>15') cuts; the modification consists of wrapping the aggregate with geotextile drainage fabric.

The existing pavement on the Route 7/15 By-Pass that will not be demolished and reconstructed shall be milled to a depth of 2" and resurfaced with 2" Asphalt Concrete, type SM-9.5D within the project limits.

2.7.2.3 Temporary Pavement

The Design-Builder shall also be responsible for any temporary pavement design. Temporary pavement designs shall be designed in accordance with the 1993 AASHTO Guide for the Design of Pavement Structures (1993 Edition) and submitted to VDOT for review. Temporary pavement designs developed using AASHTO shall have the following minimum design criteria. At a minimum, temporary pavement shall consist of 6 inches asphalt concrete and 6 inches of crushed aggregate. All temporary pavement shall be completely removed once it is no longer in service:

Minimum Design Criteria for Temporary Pavement

- Design Life – 6 months minimum
- Reliability – eighty percent (80%) minimum
- Initial Serviceability – 4.2 minimum
- Terminal Serviceability – 2.8 minimum
- Standard Deviation – 0.49 minimum
- CBR value for subgrade soils determined by laboratory tests

Note: The existing paved shoulders are not full strength and shall not be used for maintenance of traffic in their present condition.

The minimum pavement sections require that proper grading be maintained to direct surface water away from paved areas and to provide for efficient runoff from surrounding areas. Control of both surface and ground water will be a very important consideration for the overall performance of these pavement designs.

2.7.2.4 Private and Commercial Entrances

The proposed pavement within existing commercial areas shall be reconstructed utilizing the following minimum pavement section or matching the existing entrance pavement structure, whichever is greater:

Minimum Commercial Entrance Pavement Section

- 1.5-inches Asphalt Concrete Surface Course, Type SM-9.5A or SM-9.5D
- 4-inches Asphalt Concrete Base Course, Type BM-25.0A
- 6-inches Aggregate Base Material, Type I, No. 21-B

2.8 Hydraulics

2.8.1 General

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

2.8.2 Hydrologic and Hydraulic Analysis (H&HA)

An H&HA, including scour analysis shall be completed for bridges over waterways and major culvert crossings that have a total 100 year design discharge greater than 500 cubic feet per second. 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 hydrologic & 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 IIMs.

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 applicable FHWA Publications. Acceptable FHWA publications include, but are not limited to, HDS-6, HEC-11, HEC-14, HEC-20, and HEC-23.

The hydrologic & hydraulic analyses shall be documented by the completed VDOT LD-293 or 294 (if applicable) 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 or LD-294 (if applicable). 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.

2.8.3 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 sealed and signed copies on compact disc (CD) of a final drainage report incorporating all drainage calculations including pre-development 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.

The Design-Builder shall provide the Department with an inventory of all existing serviceable drainage structures within the project area that are intended to be used in the proposed drainage design within the scope validation period. The Design-Builder shall perform the assessment utilizing the technical requirements presented in VTM 123 and VDOT Road and Bridge Specification 302.3. Drainage pipes damaged or deteriorated to the point that they are no longer functional, or their functionality has been considerably impacted, shall be replaced or rehabilitated at the discretion of the Department in accordance with VDOT's guidelines including, but not limited to those as outlined in the latest version of IIM-LD-244. The inventory shall include structure material type, size, condition and digital photography documenting condition and serviceability.

A tributary to Tuscarora Creek crosses beneath Sycolin Road on the south side of the Route 7-15 Bypass. The existing triple-cell concrete box culvert at this location shall be removed and replaced with a hydraulically adequate structure designed to the appropriate strength for the fill height. Adequate conveyance for the normal stream flow shall be provided during all phases of construction in accordance with VDOT Road and Bridge Specification 107.16(b). Access for maintenance of the new culvert shall be provided at both the inlet and outlet end of the culvert. See Section 2.14-13 Utilities for additional requirements.

Underdrain outfall locations are not shown in the Conceptual Plans included and it shall be the responsibility of the Design-Builder to develop the underdrain design including adequate outfall locations. The Design-Builder may, at its discretion, utilize access structures (i.e. manholes, cleanouts, etc.) in lieu of EW-12's in order to outfall an underdrain according to the guidelines set forth in the VDOT Road and Bridge Standards and the VDOT Drainage Manual while maintaining the ability for the underdrain to be accessed in the future for maintenance purposes.

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

An Erosion and Sediment Control (ESC) Plan and Narrative, Stormwater Pollution Prevention Plan (SWPPP), and a post construction Stormwater Management (SWM) Plan shall be prepared and implemented by the Design-Builder in compliance with applicable requirements of the standards and reference documents listed in Section 2.1 including the Virginia Erosion and Sediment Control Law and Regulations and the Virginia Stormwater Management Program (VSMP) Law and Regulations.

It shall be the responsibility of the Design-Builder to have a qualified person, other than the ESC and post construction SWM Plan designer, who is authorized by the Department of Conservation and Recreation (DCR) to perform plan reviews, shall 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 this project is greater than one acre and coverage under the VSMP General Construction Permit For The Discharges From Construction Activities (VSMP Construction Permit) is required. Permit coverage is required, the Design-Builder shall coordinate and submit the required permit coverage application information to the VDOT Project Manager. The Design-Builder shall complete the applicable sections of the VSMP Construction Permit Registration form (LD-445), VSMP Construction Permit Contact Information (LD-445A), VSMP Construction Permit Fee Registration form (LD-445B). These forms along with the completed ESC and SWM Plan Certification form (LD-445C) shall be submitted to the VDOT Project Manager. The VDOT Project Manager will review the submitted information and, if complete and acceptable, process a request for coverage under the VSMP Construction Permit in accordance with VDOT's guidelines as outlined in the latest version of IIM-LD-242. If any information submitted by the Design-Builder is found to be incomplete and/or unacceptable, the assembly will be returned to the Design-Builder for corrective action and resubmission.

A working conceptual ESC and post construction SWM Plan and SWPPP for the entire Project must be submitted for review and approval with the initial application for permit coverage. This initial conceptual Plan submittal shall include the proposed total expected Land Disturbance Area and Land Development Area, including any off-site facilities, for the entire

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

2.8.5 Post Construction Stormwater Management Facilities

The Design-Builder shall be responsible for the design and construction of stormwater management (SWM) facilities as required for the Project in accordance with the latest version of IIM-LD-195, and the other standards and reference documents listed in section 2.1 including the Virginia Stormwater Management Program Law and Regulations, VDOT Stormwater Program Advisory 12.02 (SWPA 12.02), April 26, 2012. This project is considered a Category 2 per SWPA 12.02. The Design Builder shall provide to the VDOT Project Manager the supporting evaluation documentation developed in accordance with a Category 2 stormwater management plan. The Design-Builder is to insure proper ingress and egress to any stormwater management facility and that any specific proprietary facilities have proper maintenance details included in the plans.

If Low Impact Development (LID) techniques are used for stormwater management, they shall be compatible with the Town of Leesburg's maintenance requirements for LID

facilities. As-Built' drawings of the LID facilities shall be provided showing the actual finished ground contours, outlet structure dimensions and elevations, etc. as they exist at the completion of the Project. These drawings shall be signed and sealed by a Professional Engineer or Land Surveyor registered in the Commonwealth of Virginia.

2.8.6 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 installation and demolition of temporary and permanent traffic signals, signage, guardrail, and pavement markings. All TCD designed and installed under this project shall be in accordance with standards and references included in Section 2.1. The Signing and Pavement Marking Plans, Transportation Management Plan (“TMP”), and Temporary Traffic Control/ Public Information/ 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.

2.9.1 Traffic Signals

The existing traffic signal at the intersection of Sycolin Road and the Route 7-15 Leesburg Bypass shall be removed by the Design-Builder. Existing traffic signal controller and cabinet must be salvaged intact and delivered to VDOT Northern Region Operation traffic field operations facility located at 8010 Mason King Court, Manassas, VA 20109. The Contractor shall contact the traffic field operations facility at least 24 hours in advance to arrange delivery of salvaged equipment. Contact person is Greg Wayland (703) 334-0364.

2.9.1.1 Requirements for All Signals

Plan Sheet Requirements – The Design-Builder shall prepare signal plans at a scale of 1” = 25’.

Signal Timings – The Design-Builder shall request the existing signal timings from the Traffic Engineer for the Town of Leesburg upon project notice to proceed. During construction, the Design-Builder may be required to modify existing signal timings and phasing. Plans to permanently and/or temporarily modify traffic signal timing shall be submitted to VDOT and the Town of Leesburg for review and approval, and implemented by the Design-Builder. Forty-eight (48) hours prior to any adjustments. The Design-Builder shall notify VDOT and the Town Engineer(Calvin Grow) with the nature of the changes and when they are to be implemented. The Design-Builder shall

also notify VDOT and the Town of Leesburg prior to any planned traffic shifts associated with the MOT.

Signal Related Signing – The Design-Builder shall furnish and install all signal related signing in accordance with the current edition of the MUTCD. Intersection Lane Control Signs shall be installed on the mast arms for all dedicated turn lanes and all shared lanes.

Signal Head Alignment – All signal heads should be aligned by ‘lane line extended’ methodology and in accordance with the MUTCD.

Left Turns – Signal indications and signage shall conform to the MUTCD.

Right Turns – Right turn overlaps may be used when appropriate; all overlaps shall be approved by VDOT.

2.9.2 Temporary Traffic Signals

The Design-Builder shall provide temporary traffic signalization as required by the sequence of construction and temporary traffic control plans developed by the Design-Builder. The plans shall be submitted to VDOT and Town of Leesburg for review and approval prior to the construction phase where detours or traffic shifts may require temporary signalization. The plans shall be included as part of the Maintenance of Traffic / Sequence of Construction work package. ~~Video~~ Vehicular detection and emergency preemption shall be maintained for all intersection approaches during all phases of construction. The Design-Builder shall be responsible for all work and costs associated with maintaining communication between all (existing, temporary, and newly constructed) traffic signals impacted within the project area.

2.9.3 Utility Requirements

Design – The Design-Builder shall develop TCD designs that are not in conflict with existing and proposed utilities (both overhead and underground).

Designation – The Design-Builder shall be responsible for locating and marking all underground utilities prior to any TCD installation work. At least seventy-two (72) hours prior to beginning TCD installation work, the Design-Builder shall contact:

- 1) Miss Utility of Virginia at 1-800-552-7001 or 811 in order to determine the extent and location of underground utilities within the project limits, and
- 2) VDOT NRO Maintenance at 703-334-0203, Mark D. Hagan, Regional Operations Maintenance Manger, Northern Regional Transportation Field Operations , 8010 Mason King Court, Manassas, VA 20109 to determine the extent and location of all VDOT-owned underground electric equipment.

Electrical Service Requirements – The Design-Builder shall be responsible for all work, materials, and costs associated with obtaining power and maintaining power throughout construction for all TCD’s (including both permanent and temporary traffic signals). It is the

Design-Builder’s responsibility to coordinate with Dominion / Virginia Power and the appropriate maintaining agency to schedule all utility connections so as not to adversely impact the project schedule. See the table below for specifics for obtaining power.

Table 2: Electrical Service Requirements for Project Utilities

Description	Metered	Service
Traffic Signals	Yes	SE-5 or SE-9
Sycolin Road Lighting	No	Hand Hole

The electrical service for VDOT’s lighting (LP-1’s and underbridge lighting) will be Standard SE-5 or SE-9.

Testing of Electrical Service Grounding System – The Design-Builder shall test the electrical service grounding system for each electrical service in accordance with 700.04 of the Road and Bridge Specifications. A Representative from VDOT Maintenance shall witness the testing of the system and approve that the system meets VDOT’s requirements. The Design-Builder shall contact VDOT Maintenance at Mark D. Hagan, Gen Admin Manager I, Smart Traffic Signal System, 8010 Mason King Court, Manassas, VA 20109 (telephone number 703-334-0203) at least seventy-two (72) hours prior to the intended testing to arrange the testing dates and times.

2.9.4 Signs

The Design-Builder shall be responsible for all required modifications to existing signs and structures and furnishing and installing all required new signs and structures (both temporary and permanent). 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.

An existing sign inventory shall be completed prior to site demolition in accordance with the VDOT Traffic Engineering Design Manual. The final lines of sight and sight distances must be considered in the placement of all Project signage.

All signs and sign structures to be removed during the construction of the Project shall be disposed of by the Design-Builder. Salvageable Town owned signs shall be delivered to the Town of Leesburg Street Maintenance Division at 25 West Market Street, Leesburg, VA 20176. VDOT signage on Route 7-15 Bypass that is salvageable is to be returned to the VDOT NOVA District Sign Shop. Where appropriate and approved by the Department, existing VDOT signage that is found to be in good condition shall be reused in close proximity to current sign locations.

2.9.4.1 Limits of Project Signing

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

2.9.4.2 Signing Plan Sheet Requirements

The signing plans shall be prepared at a scale equal to the roadway plans, with a maximum allowable scale of one (1) inch = fifty (50) feet. 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 shall also be noted on the plans. These plans shall also show the location and messages of all existing signs. If approved by VDOT, the Design-Builder may relocate an existing sign onto a new structure if the sign is applicable and meet the new requirements of final inspection. All existing sign removals and relocations shall be shown on the signing plans. The plans shall also include the location and type of delineation devices (including markers and pavement markings).

2.9.4.3 Design of Sign Panels and Locations

Proposed, relocated and replaced signage shall be of high intensity prismatic reflective sheeting. Location of signage shall be placed between the shared-use-path and the curb and gutter, maintaining the lateral offset and clear zone requirements shown in the current version of VDOT Road Design Manual and the MUTCD. The design capacity of the square tube steel posts shall be evaluated for the proposed sign panel(s) in accordance with VDOT Road and Bridge standards. The Design-Builder is responsible for ensuring that square tube steel posts are sufficient to support all project signage. The Design-Builder shall coordinate all sign locations with all proposed landscaping, signal, utility, hydraulic, and all other roadside features to assure proper clearances and adequate sight distances. All signage and route marker assemblies installed as part of the Project along the Route 7-15 Bypass and on overhead sign structures shall be Freeway size and signs installed on all other roadways shall be Standard size. The sizes shall adhere to the latest edition of the MUTCD, FHWA Standard Highway Signs Book, the Virginia Supplement to the MUTCD, and all applicable Traffic Engineering Division Numbered Memoranda.

The Design-Builder shall use Standard MUTCD and VDOT legends for new and relocated VDOT owned signs. For all non-standard signs and all signage mounted on Project overhead structures, the Design-Builder shall use GUIDSIGN software to design the sign panels. The Clearview font shall be utilized for all positive contrast guide signs in accordance with Traffic Engineering Memorandum TE-337. Overhead signage shall not be illuminated.

2.9.5 Guardrail

The Design-Builder shall ensure that the clear zone within the project limits is free from hazards and fixed objects. In the event that removal or relocation of hazards and fixed objects from the clear zone is not feasible, the Design-Builder shall design and install appropriate barrier system for protection in accordance with VDOT GRITT Manual, Road and Bridge Standards and in conformance with NCHRP 350 or AASHTO Manual for Assessing Safety Hardware, First Edition. The same requirement applies to existing conditions affected by this project where guardrail upgrades will be required. All existing sub-standard guardrail within the Project Limits must be upgraded by the Design-Builder to meet current standards in accordance with the latest

VDOT IIM 220 This may require the upgrade of guardrail to the nearest logical termination point beyond the current Project limits. The Design-Builder shall not reuse the existing guardrail within the project limits; all guardrail installed must be new. All salvage guardrail will become the property of the Design-Builder and will be responsible for proper disposal and any associated costs. The Design-Builder will be responsible for coordinating with VDOT for the limits of guardrail upgrades for their specific design. The following general notes for guardrail installation shall apply:

1. Guardrail materials removed during this contract shall become the property of the Contractor and shall be disposed of at a licensed landfill, recycled, or be retained by the Design-Builder.
2. The Design-Builder shall perform all work such that there are no fixed objects or blunt ends exposed to the traveling public. Approved, crashworthy terminals shall be installed by the end of each workday.
3. All new guardrail installed under this contract shall be protected with an approved crashworthy terminal before the end of each workday.
4. Pavement markings, asphalt curb and rumble strips damaged by the Design-Builder during shoulder or guardrail operations shall be replaced by the Design-Builder at their cost.
5. All stored material and equipment shall be kept out of clear zone and deflection area behind guardrail.
6. The Design-Builder shall submit shop drawings for each terminal used & an FHWA NCHRP 350 approved letter.
7. Cracks in the shoulder as a result of driving posts shall be repaired. In soil or aggregate stabilized shoulders, cracks and voids around the posts shall be filled with like material and thoroughly compacted. In asphalt paved or surface treated shoulders, cracks and voids around the post shall be filled, compacted and sealed with fine asphalt plant mix no larger than SM -9.5A, or filled with fine aggregate No. 8 or 9, sealed with asphalt emulsion CRS-2 or CRS-1 at the rate of approximately 0.35 gal. Per sq. yd. All cost for this work shall be included with the price of guardrail.
8. The Design-Builder shall backfill all unused post holes. Guardrail post holes shall be backfilled to existing ground level with approved material placed in layers not more than 4 inches in height. Each layer shall be compacted by tamping.
9. Any guardrail which is removed, at a structure location, shall be replaced the same day to include bridge attachments and terminal end sections. All other removed guardrail shall be replaced within 72 hours of removal or prior to the weekend. Group 2 channelizing devices shall be placed along areas where guardrail has removed.

2.9.6 Pavement Markings / Markers

The Design-Builder shall include all required pavement markings and markers for the traffic patterns shown in the RFP Pavement Marking Plans. All pavement markings shall conform to the requirements of the MUTCD, the 2011 Virginia Supplement to the 2009 MUTCD, and applicable special provisions. All pavement markings shall be in accordance with VDOT Traffic Engineering Design Manual, dated 2011. All edge lines, centerlines and skip lines along Sycolin Road and Route 7-15 Bypass shall be Type B, Class I thermoplastic. Pavement markings on the bridge shall be Type B, Class VI with contrast markings.

Typical lane line widths on Sycolin Road and Route 7-15 Bypass shall adhere to VDOT Standards PM-3 or PM-4 and shall be four (4) inches. Stop bars shall be staggered in accordance with VDOT Standard PM-4, and shall be oriented perpendicular to roadway centerlines. All pedestrian crosswalks shall be marked with six (6) inch transverse lines and be a total of ten (10) feet in width. Acceptable material is preformed thermoplastic tape or equivalent installed in accordance with applicable MUTCD standards.

2.10 Transportation Management Plan

The Design-Builder shall develop and incorporate a Transportation Management Plan (“TMP”) in accordance with the requirements of VDOT IIM 241. The TMP shall document how traffic will be managed during the construction of the Project. The Project is classified as a Type C Category V project in terms of the TMP. The Design-Builder shall coordinate all work in accordance with the TMP. Within 180-days of the Date of Commencement, the Design-Builder shall submit the TMP to the VDOT Project Manager for approval. VDOT approval of the TMP shall be a Hold Point in the Design-Builder’s Proposal Schedule.

The TMP shall incorporate and address the following elements defined in Section 2.10.

2.10.1 Maintenance of Traffic

The Design-Builder’s TMP shall include a Maintenance of Traffic Plan detailing all phases of work, proposed lane closures, roadway detours, maintenance of traffic through 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 include coordination with local agencies and other contractors performing work on the Route 7-15 Bypass corridor. This plan shall reflect the noted Scope of Work and all applicable VDOT Standards and Specifications regarding time of work. This plan shall be in accordance with VDOT IIM 241 and incorporate all strategies meeting the criteria for a Type C Category V project for temporary traffic control, public communication and outreach, and transportation operations. The Design-Builder will be responsible for any changes to the TMP resulting from any Design-Builder changes to the sequence of construction or scope of work.

The phases in the Design-Builder's 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 intent of the sequence of construction is that portions of roadways in the different phases may be allowed to be constructed provided they do not interfere with existing traffic flow and/or do not cause any delay in the project completion. Under no circumstances will concurrent construction left and right of any lane of traffic be allowed, unless otherwise approved by the Department.

The Maintenance of Traffic Plans shall extend an appropriate distance beyond the construction tie-in locations to allow for the required length of shift per the current editions of the Virginia Work Area Protection Manual and the Federal Manual on Uniform Traffic Control Devices. Any areas that are immediately adjacent to traffic, excavated below the existing pavement surface, within the clear zone, and not protected by positive barrier, at the conclusion of each work day shall be backfilled to form an approximate 6:1 wedge against the pavement surface for the safety and protection of vehicular traffic.

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

At locations on Route 7-15 Bypass where Traffic Barrier Service, Concrete or Group II Channelizing Devices are used, a minimum width of one (1) feet should be maintained between the edge of the traffic lane and Traffic Barrier Service, Concrete or Group II Channelizing devices.

The Design-Builder shall utilize the Virginia State Police (“VSP”) during rolling lane closures on Route 7-15 Bypass for operations associated with events such as demolition, setting girders and/or approved blasting. The Design-Builder shall coordinate VSP usage as needed for other lane closures and traffic changes on Route 7-15 Bypass. All rolling lane closures shall be in accordance with Traffic Engineering Memorandum TE-241. The Design-Builder shall be responsible for coordinating through VDOT for VSP service. VDOT shall be responsible for all costs incurred by the VSP specific to the Project.

The Design-Builder shall be responsible for coordinating with the Town of Leesburg police if Town assistance with maintenance of traffic is required for the Project. The Design-Builder shall contact the Town Engineer, Calvin R Grow, at (703) 771- 2791 and the Town of Leesburg Police Department’s Patrol Administration Office at (703) 771-4500 to coordinate and schedule Town police assistance. A minimum of forty-eight (48) hours advance notice is required. The Design-Builder shall be responsible for all costs incurred by the Town of Leesburg Police Department specific to the Project.

If desired, reductions in the speed limits within the work zones on Route 7-15 Bypass or the secondary roadways shall be requested and prepared by the Design-Builder in accordance with TE-350, and must be reviewed and approved by VDOT’s Northern Regional Operations (NRO) Traffic Engineer. This includes a Work Zone Speed Analysis prepared by a Professional Engineer licensed and registered in the Commonwealth of Virginia.

Flag persons shall be certified according to the Virginia Flagger Certification Program.

The Design-Builder may modify traffic signalization at the intersection of Plaza Street and East Market Street.

All temporary pedestrian accommodations utilized during construction shall be shall be ADA compliant.

The minimum allowable traffic lane widths are 11.0 feet on Route 7-15 Bypass, 11.0 feet lane widths on all other roadways through the Project area.

Weekday lane, shoulder, or road closures shall be detailed in the Design-Builder's Transportation Management Plan and shall be in accordance with the lane closure restrictions identified in Section 2.10.1.1. Anticipated and proposed lane and/or shoulder closures shall be reviewed and approved by VDOT. The Design-Builder shall restore all lanes of traffic per the times specified below. Restoration of traffic shall mean the completion of all construction work, the removal of all traffic control devices, signs, workers, materials, and equipment from the roadway to whereby the flow of traffic is unimpeded and able to flow at posted travel speed.

2.10.1.1 Allowable Work Hours

Lane or road closures shall be in accordance with the restrictions identified below. Lane closures above and beyond what is shown below shall be approved by VDOT as part of the Design-Builder's Transportation Management Plan.

Sycolin Road

Sycolin Road may be closed to through traffic just north of Hope Parkway and just south of Gateway Drive from June 15, 2013, or the last day of classes for Loudoun County Public Schools, whichever is later to August 15, 2014, or the first day of classes for Loudoun County Public Schools, whichever is earlier. Traffic on Sycolin Road shall remain open at the Hope Parkway intersection and the Gateway Drive intersection throughout the duration of the Project.

Route 7-15 Bypass

ROUTE 7 / US 15 BY-PASS, NB & SB LANE CLOSURE ALLOWABLE HOURS		
Day	Single Lane Closure or Shoulder closure	Total Closure 20 Minute duration (Maximum)
Monday	10:00AM-3:00PM, 7:00PM to 5:00AM	12:00AM to 5:00AM
Tuesday	10:00AM-3:00PM, 7:00PM to 5:00AM	12:00AM to 5:00AM
Wednesday	10:00AM-3:00PM, 7:00PM to 5:00AM	12:00AM to 5:00AM
Thursday	10:00AM-3:00PM, 7:00PM to 5:00AM	12:00AM to 5:00AM
Friday	10:00AM-3:00PM, 8:00PM to 7:00AM	12:00AM to 5:00AM
Saturday	8:00PM to 7:00AM	12:00AM to 5:00AM
Sunday	8:00PM to 7:00AM	12:00AM to 5:00AM

Complete Route 7-15 Bypass closures performed at night will only be permitted from 12:00 AM to 5:00 AM for a maximum of 20 minutes. Complete closures of the mainline can only occur for installation and removal of overhead sign structures, demolition of existing bridges, erection of bridge members or with substantiation of need by the contractor and written authorization by VDOT’s Project Manager. Approval of this closure is mandatory and must also be coordinated with VDOT TOC seven (7) days in advance of the closure.

When the Route 7-15 Bypass is reduced to one (1) lane in each direction, Group Two channelization devices shall be used for identifying lane layout.

The Design-Builder shall provide seven (7) days advance notice to VDOT NRO and the Town of Leesburg prior to beginning any scheduled/planned lane closures or demolition operations. Any requests to close a lane outside the work hours detailed in Section 2.10.1 shall be submitted to the VDOT Project Manager, at least two (2) weeks prior to the planned work for review and approval.

The Contractor is responsible for providing adequate advance notification via variable message and required static signing for lane and/or shoulder and complete road closures in accordance with the 2011 *Virginia Work Area Protection Manual (WAPM)*. Once a closing is in place, work shall commence immediately and shall progress on a continuous basis to completion or to a designated time.

All preparatory or exploratory work to any existing facilities including, but not limited to, geotechnical investigations shall follow the WAPM for any planned lane closures.

If the Design-Builder fails to restore traffic lanes, the Design-Builder will not be allowed further lane closures until the causes for the failure are evaluated by VDOT and VDOT concurs

that the causes have been corrected by the Design-Builder. A formal submission as to the reasons for the failure to restore traffic lanes within the lane closure restrictions referenced in the table above and the proposed corrective measures shall be provided to VDOT within two (2) days of the occurrence. No modifications to the Contract Price or Contract Time(s) will be granted or considered for these days.

VDOT reserves the right to monitor traffic conditions impacted by the work and to make additional restrictions as may be necessary; i.e., terminate a lane closure early.

2.10.1.2 Lane Closure User Fees

Extension of a lane closure time, except as approved by VDOT, is not acceptable and bears a User Fee charge. The charges for failure to restore all lanes to traffic by the previously designated times, during its operational hours, shall be assessed at the rates reflected in the below tables for every 15 minutes interval starting from approved time. User Fee charges will be deducted from the Design-Builder's next monthly payment. Restoring all lanes to traffic shall mean the completion of all construction work, the removal of all traffic control devices and signs and removal of all workers, materials, and equipment from the roadway.

A time limit has been established for the duration of the closure of Sycolin Road. The begin date of the duration of the closure for Sycolin road shall be the date when through movements between Hope Parkway and Gateway Drive are first reduced by the Design –Builder below one lane in the northbound direction and one lane in the southbound direction within the project limits. The end date of the duration of closure for Sycolin Road shall be the date that through movements between Hope Parkway and Gateway Drive are restored with one lane in the northbound direction and one lane in the southbound direction within the project limits.

TABLE OF USER FEES FOR NB ROUTE 7 / US 15 BY-PASS LANE CLOSURES - AM PEAK HOURS			
Monday – Friday		Saturday	Sunday
Hours	Failure to Remove Single Lane Closure By:	Failure to Remove Single Lane Closure By:	Failure to Remove Single Lane Closure By:
5:01 AM - 5:15 A.M.	\$150	\$0	\$0
5:16 AM - 5:30 AM	\$150	\$0	\$0
5:31AM - 5:45 A.M.	\$300	\$0	\$0
5:46 AM - 6:00 AM	\$300	\$0	\$0
6:01 AM -6:15 AM	\$500	\$0	\$0
6:16 AM - 6:30 AM	\$500	\$0	\$0
6:31 AM - 6:45 AM	\$500	\$0	\$0
6:46 AM - 7:00AM	\$500	\$0	\$0
7:01 AM - 7:15 AM	\$500	\$0	\$0
7:16 AM - 7:30 AM	\$500	\$0	\$0
7:31 AM - 7:45 AM	\$500	\$0	\$0
7:46 AM - 8:00 AM	\$500	\$0	\$0
8:01 AM - 8:15 AM	\$500	\$500	\$500
8:16 AM - 8:30 AM	\$500	\$500	\$500
8:31 AM - 8:45 AM	\$500	\$500	\$500
8:46 AM - 9:00AM	\$500	\$500	\$500
And continues until all lanes are restored to traffic.	@ the rate of \$500 per 15 minute period	@ the rate of \$500 per 15 minute period	@ the rate of \$500 per 15 minute period

TABLE OF USER FEES FOR NB ROUTE 7 / US 15 BY-PASS LANE CLOSURES - PM PEAK HOURS			
Monday – Friday		Saturday	Sunday
Hours	Failure to Remove Single Lane Closure By:	Failure to Remove Single Lane Closure By:	Failure to Remove Single Lane Closure By:
3:01 PM - 3:15 PM	\$200	\$200	\$200
3:16 PM - 3:30 PM	\$500	\$500	\$500
3:31 PM - 3:45 PM	\$750	\$750	\$750
3:46 PM - 4:00 PM	\$1,000	\$1,000	\$1,000
4:01 PM - 4:15 PM	\$1,000	\$1,000	\$1,000
4:16 PM - 4:30 PM	\$1,500	\$1,500	\$1,500
4:31 PM - 4:45 PM	\$1,500	\$1,500	\$1,500
4:46 PM - 5:00 PM	\$1,500	\$1,500	\$1,500
5:01 PM - 5:15 PM	\$1,000	\$1,000	\$1,000
5:16 PM - 5:30 PM	\$500	\$500	\$500
5:31 PM - 5:45 PM	\$500	\$500	\$500
5:46 PM - 6:00 PM	\$500	\$500	\$500
And continues until all lanes are restored to traffic.	@ the rate of \$500 per 15 minute period	@ the rate of \$500 per 15 minute period	@ the rate of \$500 per 15 minute period

TABLE OF USER FEES FOR SB ROUTE 7 / US 15 BY-PASS LANE CLOSURES - AM PEAK HOURS			
Monday – Friday		Saturday	Sunday
Hours	Failure to Remove Single Lane Closure By:	Failure to Remove Single Lane Closure By:	Failure to Remove Single Lane Closure By:
5:01 AM - 5:15 A.M.	\$150	\$0	\$0
5:16 AM - 5:30 AM	\$150	\$0	\$0
5:31AM - 5:45 A.M.	\$300	\$0	\$0
5:46 AM - 6:00 AM	\$300	\$0	\$0
6:01 AM -6:15 AM	\$1,000	\$0	\$0
6:16 AM - 6:30 AM	\$2,000	\$0	\$0
6:31 AM - 6:45 AM	\$2,000	\$0	\$0
6:46 AM - 7:00AM	\$2,000	\$0	\$0
7:01 AM - 7:15 AM	\$2,000	\$0	\$0
7:16 AM - 7:30 AM	\$2,000	\$0	\$0
7:31 AM - 7:45 AM	\$2,000	\$0	\$0
7:46 AM - 8:00 AM	\$2,000	\$0	\$0
8:01 AM - 8:15 AM	\$1,000	\$500	\$500
8:16 AM - 8:30 AM	\$1,000	\$500	\$500
8:31 AM - 8:45 AM	\$1,000	\$500	\$500
8:46 AM - 9:00AM	\$500	\$500	\$500
And continues until all lanes are restored to traffic.	@ the rate of \$500 per 15 minute period	@ the rate of \$500 per 15 minute period	@ the rate of \$500 per 15 minute period

TABLE OF USER FEES FOR SB ROUTE 7 / US 15 BY-PASS LANE CLOSURES - PM PEAK HOURS			
Monday – Friday		Saturday	Sunday
Hours	Failure to Remove Single Lane Closure By:	Failure to Remove Single Lane Closure By:	Failure to Remove Single Lane Closure By:
3:01 PM - 3:15 PM	\$700	\$700	\$700
3:16 PM - 3:30 PM	\$2,000	\$2,000	\$2,000
3:31 PM - 3:45 PM	\$2,000	\$2,000	\$2,000
3:46 PM - 4:00 PM	\$2,000	\$2,000	\$2,000
4:01 PM - 4:15 PM	\$2,000	\$2,000	\$2,000
4:16 PM - 4:30 PM	\$2,000	\$2,000	\$2,000
4:31 PM - 4:45 PM	\$2,000	\$2,000	\$2,000
4:46 PM - 5:00 PM	\$2,000	\$2,000	\$2,000
5:01 PM - 5:15 PM	\$2,000	\$2,000	\$2,000
5:16 PM - 5:30 PM	\$2,000	\$2,000	\$2,000
5:31 PM - 5:45 PM	\$2,000	\$2,000	\$2,000
5:46 PM - 6:00 PM	\$2,000	\$2,000	\$2,000
6:01 PM - 6:15 PM	\$1,000	\$1,000	\$1,000
6:16 PM - 6:30 PM	\$1,000	\$1,000	\$1,000
6:31 PM - 6:45 PM	\$500	\$500	\$500
6:46 PM - 7:00 PM	\$500	\$500	\$500
And continues until all lanes are restored to traffic.	@ the rate of \$500 per 15 minute period	@ the rate of \$500 per 15 minute period	@ the rate of \$500 per 15 minute period

2.10.1.3 Holiday Restrictions

In addition to the Limitations of Operations defined by Section 108.02 of the Division I Amendments (Part 5) to the Standard Specifications, the Design-Builder shall not be permitted to conduct any operations within the project limits during the following periods:

- New Year Day Holiday shall be from 7:00 AM December 31st of each calendar year until 7:00 AM the next work day following New Year Day of each calendar year, unless the holiday occurs on a Sunday and then the following Monday shall be considered the Holiday.
- Memorial Day Holiday shall be from 7:00 AM Friday prior to Memorial Day of each calendar year until 7:00 AM Tuesday following the Memorial Day of each calendar year.
- Easter Holiday shall be from 7:00 AM on Good Friday of each calendar year until 7:00 AM the following Monday after Easter Sunday.
- Independence Day Holiday shall be from 7:00 AM July 3rd of each calendar year until 7:00 AM the next work day following Independence Day of each calendar year,

unless the holiday occurs on a Sunday and then the following Monday shall be considered the Holiday.

- Labor Day Holiday shall be from 7:00 AM Friday prior to Labor Day of each calendar year until 7:00 AM Tuesday following the Labor Day of each calendar year.
- Thanksgiving Day Holiday shall be from 7:00 AM Wednesday prior to Thanksgiving Day of each calendar year until 7:00 AM Monday following the Thanksgiving Day of each calendar year.
- Christmas Day Holiday shall be from 7:00 AM December 23rd of each calendar year until 7:00 AM December 27th of each calendar year.

2.10.2 Portable Changeable Message Signs

Portable Changeable Message Signs (“PCMS”) shall be used in advance of the work zone when closing lanes and for notification of roadway detours on Route 7-15 Bypass and Route 7 east of Leesburg. The Design-Builder shall provide at least seven (7) PCMS’s along Route 7-15 Bypass, Route 7, Sycolin Road, and Plaza Street which are to be placed in advance of the Project in each direction. PCMS’s shall also be used to provide en-route travel information about planned construction, detours, delays or other sudden changes in travel conditions throughout the Project’s duration.

The Design-Builder shall provide notification via PCMS’s (one in each direction) for a minimum of one week in advance of any planned lane closures, community entrance closures, ingress/egress diversions and other activities that will impact access and circulation through the communities with the project limits.

For the duration of the Sycolin Road closure, the Design-Builder shall place PCMS’s on each direction of the Route 7-15 Bypass and each direction of Sycolin Road in advance of the Route 7-15 Bypass/ Sycolin Road intersection to notify the public of the construction activities and suggest alternate routes to avoid delays.

2.10.3 Available Alternate Routes For Incident Management

This segment of Route 7-15 Bypass is paralleled by various VDOT and Town maintained streets from (US Route 15) King Street exit to (VA Route 7) Harry Byrd Highway exit. These routes vary in speed limit, traffic control and number of lanes. These surface streets could be used to navigate around lane closures or incidents in the Project area along Route 7-15 Bypass by using Catoctin Circle or Battlefield Parkway in the Town of Leesburg. The Design-Builder shall coordinate with VDOT and the Town of Leesburg to determine allowable alternate routes and detours. The Design-Builder shall be responsible for all detour signage and traffic control measures required.

Upon notification from the TOC of an incident requiring a detour, the Design-Builder shall establish the detour within 30 minutes from 6 AM-8 PM daily, critical construction activities, and during the limitation of operations as defined in Section 2.10.1.1. The Design-Builder shall establish the detour within one hour during all other times not referenced.

The Design-Builder shall coordinate exclusively with the NOVA TOC. The NOVA TOC will coordinate with the appropriate state and local authorities.

Response/ Setup times will be based on those recorded at the NOVA TOC Traffic Management System.

2.11 Public Involvement/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 throughout the duration of the project. All information to be released to the public shall be approved and controlled by VDOT. The existing project webpage on VDOT website is http://www.virginiadot.org/projects/northernvirginia/sycolin_road_overpass.asp. The Design-Builder shall also be responsible for coordinating preparation and release of public information with VDOT's NOVA District Office of Public Affairs.

During the Design, Right of Way and Construction Phases, the Design-Builder shall:

- Hold “Pardon our Dust” meeting prior to construction commencement with the general public and affected stakeholders. These stakeholders will include but not be limited to local institutions, Town of Leesburg and Loudoun County service providers (Police, Fire and EMS Departments.)
- In addition to the “Pardon our Dust” meeting, hold a minimum of one (1) formal meeting with the general public and approximately six (6) ~~Hold~~ informal meetings with affected stakeholders when necessary and/or as directed by VDOT. These stakeholders will include but not be limited to, area merchants, local institutions (hospitals, schools, etc.), Town of Leesburg service providers (Police, Fire and EMS Departments, Utilities, Parks and Recreation, etc.), Leesburg Executive Airport, and Homeowners Associations. All stakeholders shall be informed of meetings, as well as area medical agencies responsible for emergency transport of patients. Any meetings held will be in accordance with the VDOT Policy Manual for Public Participation in Transportation Projects.
- Concurrent with the first plan submittal, provide to VDOT's Northern Virginia 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., temporary lane closures, shoulder closures, etc.), up-to-date Project photos, and contact information. Updated web content should be provided to Public Affairs monthly throughout the Project.
- Develop and maintain an email distribution list which will communicate relevant project information to all stakeholders on a quarterly or as-needed basis. The project information to communicate includes, but is not limited to a project

overview, plan of work, overall project schedule and progress, potential impacts to traffic on all roadways within the project limits (i.e., temporary lane closures, ramp reconstruction, milling operations), community entrance closures, and ingress/egress diversions. Provide project information to VDOT for review and approval prior to distribution.

During the Construction Phase, the Design-Builder shall:

- Provide an emergency contact list of project personnel and have sufficient manpower and resources available to respond to any onsite emergency, including any work zone incidents.
- Provide to the Northern Virginia District Office of Public Affairs information for Traffic Alerts whenever there are new impacts to motorists. All information for Traffic Alerts must be submitted at least one week in advance of the traffic impact. If the impact is major (changes or additional lane closures that are anticipated to cause traffic delays that exceed existing conditions), Public Affairs must be notified one month in advance.
- Operate as a liaison between VDOT, the Town of Leesburg and the Design-Builder's Construction Manager to ensure compliance with local ordinances and provide appropriate notification to affected property owners and stakeholders.

A public hearing was held for this Project on May 17, 2012. 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. 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 (Instructions for Offerors), Sections 2.8 and 2.9. .

The Design-Builder's design shall also be contained within the right of way limits shown on the RFP Conceptual Plans. If the Design-Builder proposes to exceed the right of way limits shown on the RFP Conceptual Plans, then this shall be considered a deviation of the Contract Documents and shall be addressed as described in Part 2, Section 2.

The Design-Builder, acting as an agent on behalf of the Commonwealth of Virginia ("Commonwealth"), shall provide all right of way acquisition services for the Project's acquisition of fee right of way and permanent, temporary and utility easements including survey plats. Right of way acquisition services shall include certified title reports, appraisal, appraisal review, negotiations, relocation assistance services and parcel closings, to include an attorney's final certification of title or title insurance. The Design-Builder's lead right of way acquisition

consultant shall be a member of VDOT’s prequalified right of way contracting consultants (listed on VDOT’s website) and the Design-Builder’s right of way team shall include VDOT prequalified appraisers and review appraisers (also listed on VDOT’s website). VDOT will retain authority for approving the scope of the appraisal and the appraiser, just compensation, relocation benefits, and settlements. VDOT must issue a Notice to Commence Right of Way Acquisition to the Design-Builder prior to any offers being made to acquire the property. This represents a hold point in the Design-Builder’s Baseline Schedule. VDOT must also issue a Notice to Commence Construction to the Design-Builder once the property has been acquired and prior to commencing construction on the property. This also represents a hold point in the Design-Builder’s Baseline Schedule. The Design-Builder will **NOT** be responsible for the right of way acquisition costs. As used in this RFP, the term “right of way acquisition costs” means the actual purchase price paid to a landowner for right of way, including fee, any and all easements, and miscellaneous fees associated with closings as part of the Project. All right of way acquisition costs will be paid by VDOT, and shall not be included in the Offeror’s Price Proposal.

Notwithstanding the foregoing provision, should additional right of way (whether fee or easements) be required to accommodate Design-Builder’s unique solution and/or Contractor’s means, methods and resources used during construction above and beyond the right of way limits depicted on the conceptual plans included in the RFP Information Package, then all right of way acquisition costs for such additional fee or easements shall be paid by the Design-Builder. These costs would include (but not be limited to) the costs of any public hearings that may be required, actual payments to property owners and all expenses related to the additional acquisitions and associated legal costs as well as any additional monies paid the landowners to reach a settlement or to pay for a court award. In the event additional right of way is needed as a result of an approved scope change request by the Design-Builder, the Design-Builder shall follow the procedures indicated in the “Right of Way Acquisition Guidelines” (Chapter 5 of VDOT’s Right of Way Manual of Instructions; <http://www.virginiadot.org/business/row-default.asp>). Additionally, the Design-Builder is solely responsible for any schedule delays due to additional right of way acquisition associated with the Design-Builder’s design changes and no time extensions shall be granted.

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

- The Design-Builder shall acquire property in accordance with all Federal and State laws and regulations, including but not limited to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (the “Uniform Act”) and Titles 25.1 and 33.1 of the 1950 Code of Virginia, as amended. The acquisition of property shall follow the guidelines as established by VDOT and other State and Federal guidelines that are required and the VDOT Right of Way Manual of Instructions and the VDOT Utilities Manual of Instructions, as well as IIM-LD-243.4 and Chapter 12 of the VDOT Survey Manual, which require individual plats to be prepared and recorded with each deed, easement agreement, certificate or other instrument relating to the acquisition of any interest in real property required for this Project. All conveyance documents for

the acquisition of any property interest shall be accompanied by properly marked plan sheets and profile sheets.

- The Design Builder may not employ the use of Right of Entries until the property owner has been made a bona fide offer to acquire the property.
- If the Design Builder and/or the Right of Way sub-consultant does not follow 49 CFR Part 24 Uniform Relocation and Real Property Acquisition Act of 1970 (The Uniform Act) in the performance of the acquisition and/or relocation processes, or fails to obtain or create any mandatory written documentation in their right of way parcel file, the Design Builder shall be responsible for any and all expenses determined to be ineligible for reimbursement of federal funding (80% of amount).
- VDOT shall designate a hearing officer to hear any Relocation Assistance appeals. VDOT agrees to assist with any out of state relocation by persons displaced within the rights of way by arranging with such other state(s) for verification of the relocation assistance claim.
- VDOT will entertain the use of relocation incentive plans on project with significant numbers or critical relocations. Such incentive plans must be presented to VDOT for approval. If VDOT approves the incentive plan, it will seek Federal Highway Administration approval. Any relocation incentive plan must be uniformly administered so that all landowners and displaces of a similar occupancy receive fair and equitable treatment. Under no circumstances is a relation 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 protected 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 site 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. The commitment is based on the Plan providing a reasonable and orderly workflow and the work being provided to the VDOT Representative as completed. 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.

- The Design-Builder shall make direct payments of benefits to property owners for negotiated settlements, relocation benefits, and payments to be deposited with the court. Payment documentation is to be prepared and submitted 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 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 a prior recorded easements.
- Because these acquisitions are being made on behalf of the Commonwealth, VDOT shall make the ultimate determination in each case as to whether settlement is appropriate or whether the filing of an eminent domain action is necessary, taking into consideration the recommendations of the Design-Builder. When VDOT authorizes the filing of a certificate, the Design-Builder shall prepare a Notice of Filing of Certificate and the certificate assembly. All required documents necessary to file a certificate shall be forwarded along with a prepared certificate to the VDOT Project Manager. Once reviewed, the certificate will be forwarded to Central Office for review and approval. VDOT will execute the certificate, provide the money as appropriate and will return the assembly to the Design-Builder. The Design-Builder shall update the title examination and shall file the certificate.
- When VDOT determines that it is appropriate, the Design-Builder shall be responsible for continuing further negotiations for a minimum of sixty (60) days, in order to reach settlement after the filing of certificate. After that time the case will be assigned to an outside attorney appointed by VDOT and the Office of the Attorney General. When requested, the Design-Builder shall provide the necessary staff and resources to work with VDOT and its attorney throughout the entire condemnation process until the property is acquired by entry of a final non-appealable order, by deed, or by an Agreement After Certificate executed and approved by VDOT and the appropriate court. The Design-Builder will provide updated appraisals (*i.e.*, appraisal reports effective as of the date of taking) and expert testimony supporting condemnation proceedings upon request by VDOT. Services performed by the Design-Builder or its consultants after an eminent domain action is assigned to an outside attorney will be paid, if and when

necessary, under a Work Order in accordance with Article 9 of Part 4 (General Conditions of Contract).

- The Design-Builder will be responsible for all contacts with landowners for rights of way or construction items.
- The Design-Builder shall 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 within the Project limits.
- Any existing fencing impacted by the Design-Builder's design and construction activities shall be restored or replaced to the same alignment and configuration relative to improvements as the existing. Any new VDOT fencing shall be Std. FE-CL.

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 utilities 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.

Underground utilities shown on the RFP plans are based on data collected on or about 2004. Design-Builder shall confirm and verify location of all existing utilities.

The Design-Builder shall be responsible for utility designations, utility location (test holes), conflict evaluations, cost responsibility determinations, utility relocation designs, utility relocations and adjustments, utility reimbursement, replacement land rights acquisition and utility coordination required for the Project. The Design-Builder shall be responsible for all necessary utility relocations and adjustments to occur in accordance with the accepted Baseline Schedule. All efforts and cost necessary for utility designations, utility location (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 and shall **NOT** be included in the Offeror's Price Proposal. Private utilities will be responsible for utility relocation costs per cost responsibility determinations. Any utility betterments relocated/installed by the Design Builder 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 Design-Builder shall contact each Utility owner prior to submitting bids to determine the scope of each Utility owner's relocation/betterments.

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 needed for all utilities necessary for relocation due to conflicts with the Project.

The Design-Builder shall provide all utilities 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 Utility 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; 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 current VDOT Utility Manual, 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 shall assemble the information included in the relocation plans in a final and complete form and in such a manner that VDOT may approve the submittals with minimal review. The Design-Builder shall meet with VDOT's Regional 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 shall be accompanied by a certification from the Design-Builder stating that the proposed relocation will not conflict with the proposed roadway improvements and will not conflict with another utility's relocation plan.

At the time that the Design-Builder notifies VDOT that the Design-Builder deems the Project to have reached Final Completion, the Design-Builder shall certify to VDOT that all utilities have been identified and conflicts have been resolved and that those utilities with compensable rights or other claims related to relocation or coordination with the Project have been relocated and their claims and compensable rights satisfied or shall be satisfied by the Design-Builder.

The Design-Builder's design shall provide or accommodate access for utility maintenance. The Town of Leesburg has requested access for their water and sewer lines below the eastern base of the proposed retaining wall along Sycolin Road from Station 117+00 to the inlet end of the proposed culvert near Station 118+50 (See RFP Plans). This access shall also allow for maintenance of the inlet end of the culvert.

The Design-Builder shall accurately show the final location of all utilities on the as-built drawings for the Project. It is the Design-Builder's responsibility to verify whether other utility owners exist within the Project limits and coordinate with them.

Known utility owners and their respective contact numbers include but are not limited to the following:

Water and Sanitary Sewer

Town of Leesburg

1385 East Market Street

Leesburg, Virginia 20176

Contact: Mr. Aref Etemadi

Telephone: (703) 771-2750

Town of Leesburg

24 West Market Street

Leesburg, Virginia 20175

Contact: Mr. Calvin R Grow

Telephone: (703) 771-2791

Gas

Washington Gas

6801 Industrial Road

Springfield, Virginia 22151

Contact: Mr. Alan Melliza

Telephone: (703) 750-4256

Telephone

Verizon Virginia

502 East Piedmont Street

Culpepper, Virginia 22701

Contact: Mr. John Boswell

Telephone: (540) 829-2709

Electric

Dominion/Virginia Power

3072 Centreville Road,

Herndon, Virginia 20171

Contact: Mr. Frank Kapper

Telephone: (571) 283-9958

Dominion Power Transmission

701 Cary Street, 12th Floor

Richmond, Virginia 23219

Contact: Mr. Kyle Keno

Telephone: (804) 771-3548

NOVEC

5399 Wellington Road

Gainesville, Virginia 20155

Contact: Mr. Jeremy Spittle

Telephone: (703) 754-6745

Cable Television:

Comcast
12345-G Sunrise Valley Drive
Reston, Virginia 20191
Contact: Mr. Terry Saines
Telephone: 571-434-1784

2.13.1 Project Lighting

The Design-Builder shall prepare a roadway lighting plan in accordance with the VDOT Traffic Engineering Design Manual and shall coordinate the design and construction of roadway lighting with the local utility company(s). A point-to-point lighting analysis and calculation shall be performed for the entire project layout in accordance with IES RP-8-00 for the illuminated areas, using AGI-32 software, and submitted to VDOT for review and approval prior to construction of the project lighting.

High Pressure Sodium (HPS) luminaries shall be used unless otherwise approved by VDOT in writing. Conductor cables shall be used in all conduit and junction boxes. All conduits, including extensions from junction boxes to a light support base shall be a minimum of two (2) inches in diameter. No direct burial cable is allowed.

Light poles and street lights shall be in accordance with the Town of Leesburg’s Design and Construction Standards for “Standard Roadway Fixture.” Dominion Virginia Power will be responsible for installing poles and lights and the Design-Builder shall be responsible for providing reimbursement to Dominion Virginia Power for this work. The Design-Builder shall perform all other work required for Project Lighting in accordance with Dominion Virginia Power requirements.

The Design-Builder will provide electrical service and temporary electrical services for all new and temporarily relocated or adjusted items for the purpose of traffic control and lighting. Upon Final Completion of the Project, the Design-Builder shall transfer electrical service to VDOT.

~~The project shall include lighting along Sycolin Road within the Project limits. The Design-Builder shall prepare a Roadway Lighting Plan in accordance with the American National Standard Practice for Roadway Lighting *ANSI / IESNA RP-8-00* and the lighting system shall be constructed in accordance with the VDOT Traffic Engineering Design Manual, current edition of VDOT’s Road and Bridge specifications, requirements of the National Electric Code and AASHTO Guide for Roadway Lighting Design, 6th Edition (2005). Some components of the lighting system may be provided by the Dominion / Virginia Power.~~

~~The Design-Builder shall provide point-to-point lighting analysis and calculations for complete project layout using AGI 32 software, and submit them to VDOT for review and approval. High Pressure Sodium (HPS) luminaires shall be used unless otherwise approved by VDOT. Minimum maintained average roadway Illuminance for Sycolin Road shall be 1.7 foot-~~

~~candles values with 3:1 uniformity ratio. All conduit, including extensions from junction boxes to a light support base, shall be a minimum of two (2) inches in diameter.~~

~~The lighting along Sycolin Road within the limits of the project will be owned and maintained by Dominion / Virginia Power. Service connection location and energizing the system shall be coordinated with Dominion / Virginia Power and shall be the responsibility of the Design Builder. Poles, luminaire arms, luminaire Mounting heights shall be coordinated with Dominion / Virginia Power. Design Builder shall be responsible for installing junction boxes, conduit, wiring, light support bases on the bridge and wall parapets and anchor bolts. Junction boxes for lighting shall not be placed within vehicular travel lanes and any lighting pole inside the clear zone must be fixed with breakaway base. All clear zone requirements are explained in the VDOT Road Design Manual.~~

~~The Design Builder shall be responsible for coordinating all aspects of installation with Dominion / Virginia Power. Dominion / Virginia Power may install all light poles and luminaires, and for connection of wiring to power sources. The anchor bolt pattern and electrical service for the lighting will be provided by Dominion / Virginia Power. Any light pole anchorages on the bridges or retaining wall parapets shall be in accordance with Structure and Bridge Division's Bridge Conduit System BCS or otherwise approved by Structure and Bridge Division.~~

~~The Design Builder shall be responsible for staking the location of the proposed poles according to their approved design and installing two (2) inch diameter conduit from and to each location along Sycolin Road. Dominion / Virginia Power may install the pole fixture/luminaire, pull the wire and energize the system.~~

~~The Design Builder is responsible for all costs associated with Dominion / Virginia Power work in relation to lighting on the Project.~~

~~2.14 — Landscaping and Roadside Development~~

~~Landscape Plans shall be prepared by a licensed Landscape Architect and shall be submitted to the VDOT Project Manager. The plans shall be prepared in Microstation V8i and in accordance with VDOT's CADD manual. All landscaping shall be in accordance with the references in Section 2.1 and with the following:~~

- ~~• Landscaping shall be designed and installed along Sycolin Road within the project limits.~~
- ~~• A majority of the plant materials should be indigenous to the area and can adapt and survive in roadside environments.~~
- ~~• The landscaping should be designed to be low maintenance and measures should be incorporated on the plans and in the special provisions to reduce maintenance activities for the landscaping. These include, but are not limited to plant density, mulch, pre-emergent herbicides, and weed barriers. The landscaping and architectural features shall be compatible with the existing landscape adjacent to the Project site and may reflect historic and cultural features of the area.~~

- ~~Landscaped areas shall be planted with larger plant stock. When planted, shade trees should be 2" in caliper and spaced 20 to 30 feet on center, flowering trees 6 to 8 feet in height and spaced 10 to 15 feet on center, evergreen trees 7 feet in height and spaced 15 to 25 feet on center, shrubs 2 to 4 feet in height and spaced 3 to 5 feet on center, depending on the species. All plants should conform to the ANLA standards, container grown or balled and burlaped.~~
- ~~The roadside development sheet should not include tall fescue. It shall include native and low growing grasses and groundcovers both for erosion and sediment control and permanent seeding.~~

~~Design Builders shall assume that adequate locations will be identified within the proposed right of way or temporary construction easements, and without modification to the typical section.~~

~~A Roadside Development Seed Mix has been provided in the RFP Information Package. A roadside development sheet shall be submitted to the VDOT Project Manager for review and approval prior to land disturbing activities.~~

~~One large canopy tree shall be planted for every 40 (forty) feet of road frontage, including the bridge. These trees shall be 2 inches in caliper, ball and burlaped or container grown, and be planted where there is adequate space for the tree to grow to maturity.~~

~~Tree Selection for Large Canopy Trees:~~

Common Name	Botanical Name
Willow Oak	Quercus phellos
Zelkova	Zelkova serrata
Ginko (male only)	Ginko biloba
Bald Cypress	Taxodium distichum

~~Mitigation of tree loss may be required. An estimated 4 acres of heavy to moderate tree cover will be removed as part of the project and will require replacement. Replacement will be with 1/2 inch caliper deciduous trees and 4 foot tall evergreen trees. The trees shall be planted ten (10) feet on center.~~

~~The narrow area between the noise barriers and road barrier shall be planted with vines that will climb the walls such as Virginia creeper or cross vine.~~

~~Tree Selection for Re-forestation Areas~~

Common Name	Botanical Name
Hackberry	Celtis occidentalis
American Beech	Fagus grandifolia
White Oak	Quercus alba
Bur Oak	Quercus macrocarpa

Sweet Gum	Liquidambar styraciflua
American Hop Hornbeam	Ostrya virginiana
Eastern Red Cedar	Juniperus virginiana
Serviceberry	Amelanchier
Norway Spruce	Picea abi

~~The Offeror shall provide additional landscaping as required to mitigate Project Impacts on the community and the traveling public.~~

2.1514 Quality Assurance / Quality Control (“QA/QC”)

Design-Builder shall submit its QA/QC Plan for both design and construction to VDOT for review and approval at the meeting held after the Date of Commencement as set forth in Part 4 Section 2.1.2. Along with the QA/QC Plan submittal, the Design 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:

- Preparatory Inspection Meeting requirement, 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);
- At least one (1) material which VDOT retains responsibility for testing as identified in Table 5-2, January 2012 QA/QC Guide;
- Situation arising requiring the issuance of a Non-Conformance Report and subsequent review of the report, including completion of corrective measures and the issuance of a Notice of Correction of non-conformance work with proper log entries and proper interface with auditing and recovery requirements as set forth in Section 5.10 of the January 2012 QA/QC Guide for nonconforming Work resulting from:
 - defective equipment
 - construction activities/materials which fail to conform as specified;
- Inspection documentation capturing requirements as set forth in Sections 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;
- Application for payment for Work Package which includes work element, including review and approval by Quality Assurance Manager.

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 of the January 2012 QA/QC Guide. 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.

2.1514.1 Design Management

The Design-Builder is responsible for design quality in accordance with the January 2012 QA/QC Guide. The Design Manager, assigned by the Design-Builder 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.

2.1514.2 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 QAM shall have the authority to enforce requirements of the Contract Documents, and Reference Documents, when deficient materials or unsatisfactory finished products fail to conform to Contract Documents and Reference Documents. The QAM, in accordance with his/her assignment, shall monitor and inspect the construction work as it progresses. 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 Design Review process. All deficiencies (hereinafter referred to as a Non-Conformance), including those pertaining to rules, regulations, and permit requirements, shall be documented by the QAM. A Non-Conformance Report (NCR) referenced by a unique number, shall be forwarded to the Contractor and VDOT within 24 hours of

discovery of the Non-Conformance. Non-conformance procedures are provided in Section 5.10.5 of the January 2012 QA/QC Guide.

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

- Prestressed Concrete Structural Elements (beams, girders (VDOT adopted Bulb-T sections), and piles)
- Structural Steel Elements (beams, 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 (OIVST) tests 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 OIVST tests and, therefore, final determination of the actual number of OIA and OIVST tests to be performed will be made by VDOT based on these quantities.

The QAM shall be responsible for the QA inspection and testing of all materials used and work performed on the Project to include observing the Contractor's QC activities, maintaining the Materials Notebook (including adherence to the Special Provision for Design-Build Tracking (DBT) numbers included in the RFP Information Package), 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 that is normally performed by VDOT, as prescribed in the Construction Manual, Inspection Manual, Materials Manual of Instructions and all other applicable Reference Documents. 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 when testing hydraulic cement concrete, asphalt concrete, soils and aggregate, pavement markings and for the safety and use of nuclear testing equipment as required by the Road and Bridge Specifications. The QA programs 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 the remedial actions to be taken as discussed in Section 105.12 of Part 5.

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

- Project correspondence
- Project diaries
- Test reports
- Invoices
- Materials books

- Certified survey records
- DBE/EEO records
- Warranties
- As-Built drawings
- Special tools

2.1615 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.

2.1716 Plan Preparation

2.1716.1 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 Roadway and Bridge Plans including aerial images, if available, and survey files.

2.1716.2 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 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.

2.1716.3 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, VDOT's I&IM, VDOT's Traffic Engineering Design Manual and VDOT's Manual of Structure and Bridge Division, Vol. V, Part 2, Design Aids and Typical Details.

The approved plans shall be furnished by the Design-Builder with appropriate signature blocks and Professional Engineer seal on each sheet indicating approval for right of way or construction as applicable.

2.1716.4 Electronic Files

All plans shall also be submitted in electronic format using the provided versions of 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.

2.1716.5 Plan Submittals

In addition to electronic files as described ~~in Section 2.17.4~~ above, the Design-Builder shall prepare and distribute hard copy paper plans in the quantities as specified below, for each of the following deliverables (at a minimum, as other submittals and/or work packages may be necessary or desired):

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

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

Right of Way and/or Construction Plans shall be accompanied by a VDOT LD-436 checklist filled out as appropriate for the specific submittal, and 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 Town of Leesburg 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 2.1716.9 below). Town of Leesburg 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 - Christiana Briganti-Dunn, P.E.
4975 Alliance Drive
Fairfax, VA 22030

Town of Leesburg
Department of Public Works
Attention – Mr. Calvin Grow, P.E., Town Engineer
25 West Market Street
P.O. Box 88
Leesburg, VA 20178

VDOT ~~and Town of Leesburg~~ 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 Town of Leesburg~~ comments shall be provided in subsequent submittals.

VDOT ~~and Town of Leesburg have~~ has 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.

2.1716.6 Right of Way Plans

Right of Way Plans and any associated Design Calculations shall be submitted to VDOT and the Town of Leesburg simultaneously for review. The time frame for plan review and approval shall be in accordance with the requirements of the Contract Documents. All VDOT 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 2.12 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.

2.1716.7 Construction Plans

Construction Plans, and any associated Design Calculations, shall be submitted to VDOT and Town of Leesburg simultaneously for review. The time frame for plan review and approval shall be in accordance the requirements of the Contract Documents. All VDOT ~~and Town of Leesburg~~ 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.

2.1716.8 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 Ton of Leesburg. VDOT shall receive one (1) full-size set and five (5) half-size sets of Released for Construction Plans, along with all electronic files. The Town of Leesburg 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 – Arifur Rahman, P.E.
 VDOT Structure and Bridge Project Manager
 4975 Alliance Drive
 Fairfax, VA 22030

Town of Leesburg
 Department of Public Works
 Attention – Mr. Calvin Grow, P.E., Town Engineer
 25 West Market Street
 P.O. Box 88

Leesburg, VA 20178

2.1716.7 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.

2.1716.8 Plan Deliverables

The Design-Builder shall prepare Hard Copy paper plans and Electronic plans (DGN & PDF) formats on CD or other approved media for each of the following deliverables:

- Released for Construction Plans
- Design Calculations
- Supporting Calculations and Computations for Drainage Design, Erosion and Sediment Control Measures and Stormwater Management.
- Working/Shop Drawings
- Record Plans (As-Built)
- Right of Way Plats
- Bridge Design/ Analysis and Load Rating Report

2.1817 Monthly Progress Meetings

Design-Builder shall participate in monthly progress meetings. During such meetings, progress during the prior month shall be reviewed. The Design-Builder shall collect information from any key subcontractors/sub-consultants responsible for work completed during the specified duration and work scheduled during the upcoming reporting duration. These meetings shall be attended by the Design-Builder's Project Manager, Construction Manager, QAM and design manager, as well as other key personnel from the design and construction firms defined within the Offeror's proposal and Department representative's designated by the VDOT Project Manager. Meetings will occur monthly beginning the month after the issuance of the Notice to Proceed. Design-Builder shall be responsible for preparing, maintaining and distributing minutes of the meetings to all attendees for review, comment and/or approval. The meeting minutes shall be provided to the Department within two calendar days of the monthly progress meeting.

2.1918 Virginia Occupational Safety and Health Standards

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

At a minimum, all 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.
- Explosives shall be purchased, transported, stored, used and disposed of by a Virginia State Certified Blaster in possession of a current criminal history record check and a commercial driver's license with hazardous materials endorsement and a valid medical examiner's certificate. All Federal, State and local regulations pertaining to explosives shall be strictly followed.
- All electrical tools shall be adequately grounded or double insulated. Ground Fault Circuit Interrupter (“GFCI”) protection must be installed in accordance with the National Electrical Code (“NEC”) and current Virginia Occupational Safety and Health agency (“VOSH”) standards. 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 of six feet or greater.
- All vehicles with an obstructed view when backing shall be equipped with a backup alarm or ground guide.

- All equipment and materials shall be stored outside of the clear zone when not in use.

3.0 ATTACHMENTS

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

ATTACHMENT 2.2 A	--	ADDITIONAL SUBSTRUCTURE AND FOUNDATION CRITERIA
ATTACHMENT 2.2 B	--	PROPOSED PIER PROTECTION
ATTACHMENT 2.2 C	--	ARCHITECTURAL TREATMENT CRITERIA
ATTACHMENT 2.3	--	DESIGN CRITERIA TABLE

END OF PART 2

TECHNICAL INFORMATION & REQUIREMENTS