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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 in Loudoun County, Virginia, and includes widening Pacific Boulevard (Route 1036) from two to four lanes from the intersection of Sterling Boulevard (Route 846) to the intersection of Relocation Drive (Route 775). The total Project length is approximately 0.4 mile. However, it is noted that this description and length are approximate only and based on the preliminary design shown in the RFP Information Package - CD-ROM. The final project length may vary depending on the Design-Builder's final design and this fact shall be taken into account in the Design-Builder's proposal.

The elements detailed in the preliminary plans contained in the RFP Information Package are considered to be the basic Project configuration. Modifications such as additional right-of-way requirements, design exceptions/waivers, and environmental impacts due to adjustments of this design may be required as described elsewhere in this document.

1.2 Anticipated Scope of Work

The anticipated scope of work to be undertaken by the successful Design-Builder under the design-build contract for this Project is identified herein. This work is anticipated to include, among other things, but is not limited to: (a) completing design, (b) acquisition of right-of-way and easements, (d) coordinating and performing, or causing to be performed, required utility relocations and adjustments, (d) performing roadway construction, (d) construction of parallel 10-foot shared use path ("Multi-Use Trail") and 5-foot sidewalk (e) providing quality assurance and quality control for design and construction, (f) providing overall project management, and (g) construction of a traffic signal at Sterling Boulevard and Pacific Boulevard. Brief descriptions of this anticipated work are set forth below. Design-Builders should note that all work performed on this Project shall be completed using Imperial Units.

1.3 Anticipated Design Services

Design services shall address all items necessary for construction and operation of the completed facility. Design services are anticipated to include but are not limited to: surveying, roadway design, traffic control devices including traffic signals,, maintenance of traffic plans, signs, guardrail, pavement markings and marker plans, drainage design, geotechnical investigation including borings and analysis, materials analysis, pavement design.

A required minimum pavement section is provided by VDOT in Section 2.6.1 below for bidding purposes. The Design-Builder will be required to validate the suitability of the minimum pavement section, and if deemed inadequate increase the pavement layer thicknesses subject to VDOT approval. The Design-Builder will be responsible for the final design and construction of the pavement. A Location Survey has been performed for this Project, however any additional information that the Design-Builder may need for their particular design shall be included in the Design-Builder's scope of work. Any survey, design and subsurface information provided by VDOT is subject to the limitations as stated therein and must be validated and augmented as necessary to provide the final design.

1.4 Anticipated Right-of-Way and Utilities

Services for right-of-way acquisition and utility relocations, adjustments and coordination shall include all work necessary to acquire the right-of-way and to perform the relocations, adjustments and coordination of utilities as required by the Project. 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 Design-Builder's Price Proposal. All costs for utility relocations, including betterments, shall be included in the Design-Builder's Price Proposal. The existing sanitary sewer and water lines along Pacific Boulevard will not require relocation and are not included in the scope of work. Adjustments to manhole tops and valve boxes are anticipated and are included in the scope of work.

1.5 Anticipated Construction Services

Construction services are anticipated to include, but are not limited to, earthwork, roadway, traffic control devices, the demolition and removal of portions of the existing roadways, drainage, utility relocations/adjustments and coordination, traffic management plan, erosion and sediment control and all other environmental requirements and commitments. Design-Builder will also be expected to provide construction engineering inspection and management, quality assurance and quality control, including plant quality assurance inspection and testing, but excluding items listed under Section 2.13.2 below.

The Design-Builder has the option of closing Pacific Boulevard for the duration of construction as detailed under Section 2.9 below.

2.0 PROJECT TECHNICAL INFORMATION & REQUIREMENTS

2.1 Standards and Reference Documents

The design and construction work for the Project shall be performed in accordance with the applicable federal and state laws and VDOT Standards, Specifications and Reference Documents to include, but not limited to the documents listed herein. The Design-Builder must

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

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

- VDOT 2002 Drainage Manual (including current Errata Sheet)
- VDOT Hydraulic Design Advisories (all current)
- VDOT CADD Manual (Version 2009)
- VDOT Construction Manual (2005)
- VDOT Post Construction Manual (1997 Edition)
- VDOT Construction Inspection Manual (December 2001)
- VDOT Traffic Engineering Design Manual
- VDOT Right-of-way and Utilities Division Manuals, Vol. I (July 1999) and II (November 2003)
- VDOT Current Land Use Permit Manual
- VDOT Policy Manual for Public Participation in Transportation Projects (updated September 2004)
- VDOT Instructional & Information Memorandums ("I&IM"), All Divisions
- VDOT Policy for Integrating Bicycle and Pedestrian Accommodations
- VDOT Road and Bridge Standards, Vol. 1 and Vol. 2 (2008)
- VDOT Road and Bridge Specifications (2007), including all revisions
- VDOT Guardrail Installation Training Manual ("GRIT") February 2006
- VDOT Road Design Manual, Vol. I
- VDOT Survey Manual (2009 Edition)
- VDOT Manual of Instruction for Material Division
- VDOT's Minimum Quality Control and Quality Assurance Requirements for Design-Build and Public-Private Transportation Act Projects (August 2008)
- VDOT Materials Division Memorandum Number MD299-07 for Materials Acceptance – October 4, 2007 (Included in the RFP Information Package – CD-ROM)
- VDOT 2005 Virginia Work Area Protection Manual
- VDOT Mobility Management Division Memoranda
- VDOT Water Quality Permit Manual, Revised - March 28, 2006 (Included in the RFP Information Package – CD-ROM)
- AASHTO A Policy on Geometric Design of Highways and Streets (2004)
- AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals, 1994 Edition
- AASHTO Guide for the Development of Bicycle Facilities (1999)

- AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities (2004)
- AASHTO Guide for Design of Pavement Structures (Rigid Pavement and Flexible Pavement) (1993 Edition)
- USDOT FHWA Standard Highway Signs
- Corps of Engineers laboratory testing procedures EM-1110-2-1906
- Manual of Uniform Traffic Control Devices ("MUTCD") (2003 Edition)
- Virginia Supplement to MUTCD
- Traffic Engineering Division Memorandums ("TDM")
- DCR Virginia Stormwater Management Handbook (First Edition – 1999)
- DCR Virginia Erosion and Sediment Control Handbook (Third Edition – 1992)
- Americans with Disabilities Act Accessibility Guidelines for State and Local Government Facilities
- Transportation Research Board Highway Capacity Manual, Fourth Edition (2000)
- Duncan, J.M. (April 2000) Factor of Safety And Reliability In Geotechnical Engineering, Journal of Geotechnical and Geo-environmental Engineering, ASCE, Discussions and Closure August 2008
- VDOT Northern Region Specification for Uninterruptible Power Supply (UPS) – Traffic Signals (Included in the RFP Information Package – CD-ROM) dated May 22, 2007
- Specification Section 315 – Asphalt Concrete Pavement Design-Build Projects (Included in the RFP Information Package – CD-ROM), dated December 12, 2009
- Special Provision for Section 108 – Prosecution and Progress of Work (Included in the RFP Information Package – CD-ROM), dated June 22, 2009.
- Special Provision for Surface Preparation and Restoration Prior to Plant Mix Overlay (Included in the RFP Information Package – CD-ROM), dated December 2, 2009
- Special Provision for Sealing Cracks in Asphalt Concrete Pavements Prior to Overlay (Included in the RFP Information Package – CD-ROM), dated December 2, 2009
- Special Provision for Flowable Backfill (Included in the RFP Information Package – CD-ROM),revised November 2009
- Special Provision for Non-tracking Tack Coat (Included in the RFP Information Package – CD-ROM), dated December 7, 2009
- Special Provision for Planing Asphalt Concrete Pavement (Included in the RFP Information Package – CD-ROM), revised November 2009
- Special Provision for Lime Modification of Soils (Included in the RFP Information Package – CD-ROM), dated November 23, 2009
- Supplemental Specification Section 214—Hydraulic Cement (Included in the RFP Information Package – CD-ROM), dated January 28, 2008
- Supplemental Specification Section 215—Hydraulic Cement Concrete Admixtures (Included in the RFP Information Package – CD-ROM), dated January 28, 2008

- Supplemental Specification Section 217 – Hydraulic Cement Concrete (Included in the RFP Information Package – CD-ROM), dated October 15, 2008
- Supplemental Specification Section 306 – Lime Stabilization dated (Included in the RFP Information Package – CD-ROM), October 2, 2008
- Supplemental Specification Section 315 – Asphalt Concrete Pavement (Included in the RFP Information Package – CD-ROM), dated December 7, 2009
- Special Provision Copied Note Section 211 – Warm Mix Asphalt Pavement (Included in the RFP Information Package – CD-ROM)dated December 7, 2009
- Special Provision Copied Note Section 211 – Surface and Intermediate Mixes using RAP (Included in the RFP Information Package – CD-ROM), dated September 24, 2007, reissued July 2008
- Special Provision Copied Note Section 248 – Surface and Intermediate Mixes using RAP (Included in the RFP Information Package – CD-ROM), dated December 7, 2009
- Special Provision Copied Note Section 315 – Warm Mix Asphalt Pavement (Included in the RFP Information Package – CD-ROM), dated December 7, 2009
- Special Provision for Density Control of Embankments and Backfill (Included in the RFP Information Package – CD-ROM), Revised – November 26, 2006
- Special Provision for Section 301 – Clearing and Grubbing (Included in RFP Information Package – CD-ROM), dated November 15, 2006
- Special Provision for Design-Build Tracking ("DBT") Numbers (Included in the RFP Information Package – CD-ROM), dated February 8, 2008
- Special Provision for Square Tube Steel Sign Post (Included in the RFP Information Package – CD-ROM), dated July 7, 2005
- Special Provision for ARRA Project Requirements (Included in the RFP Information Package – CD-ROM), revised February 1, 2010
- Special Provision for Personnel Requirements for Work Zone Traffic Control (Included in the RFP Information Package – CD-ROM), dated June 11, 2009
- Special Provision for Project Communication and Decision Making for Design-Build Projects (Included in the RFP Information Package – CD-ROM), reissued August 2009
- Supplemental Specification Section 522 – Partnering Design-Build Projects (Included in the RFP Information Package – CD-ROM), dated December 2, 2009
- Northern Virginia Traffic Engineering Guidance to Consultants (Included in the RFP Information Package - CD-ROM), dated 2005
- Categorical Exclusion ("CE") (Included in the RFP Information Package – CD-ROM), dated November 3, 2009
- Plans, Specifications, and Estimates ("PS&E") Re-evaluation and Environmental Certification/Commitments Checklist ("EQ-103") (Included in the RFP Information Package – CD-ROM), dated December 10, 2009
- VDOT Geotechnical Engineering Data Report for Pacific Boulevard Widening, (Included in the RFP Information Package – CD-ROM), dated December 16, 2009
- Controller Cabinet Foundation and Conduit Placement Details CF-3 (NOVA Region) (Included in the RFP Information Package – CD-ROM), revised June 15, 2009

In the event that there is a discrepancy between VDOT and non-VDOT Standards and References listed herein, the VDOT specifications, design standards, and manuals shall take precedence. Design Waivers will be required for any element that does meet AASHTO minimum design criteria, but not VDOT minimum standards. Design Exceptions will be required for any design element that does not meet AASHTO minimum design criteria. See IIM-LD-227, for more information regarding Design Exceptions and Design Waivers. Special Provisions included in this contract document or other Special Provisions selected for use in design and construction of this Project that have been approved by VDOT will govern over the VDOT specifications, design standards and manuals. Special Provision Copied Notes approved by VDOT and requirements specified within the text of this RFP will govern over both the Special Provisions and VDOT specifications, design standards and manuals.

Specific design requirements described in the Technical Requirements ("Part 2") shall supersede the design depicted in the preliminary plans included in the RFP Information Package – CD-ROM. In the event that there is a discrepancy between the preliminary plans and the Technical Requirements ("Part 2") herein, the Technical Requirements ("Part 2") shall take precedence.

2.2 Roadway Design

Project widens Pacific Boulevard from 2 to 4-lanes, including left turn lanes and taper lengths, median modifications as generally depicted on the plans included in the RFP Information Package CD-ROM. The Design-Builder shall be responsible for developing detailed geometric design of these improvements consistent with applicable VDOT and AASHTO requirements for an Urban Collector with a design speed of 40 MPH and preparing construction plans for the improvements that incorporate drainage, traffic signal, signing, pavement markings, temporary traffic control, and other requirements identified elsewhere in this RFP.

The use of superelevation standard TC5.01 ULS will be permitted on Relocation Drive at the intersection with Pacific Boulevard.

There are no anticipated substandard features reflected in the preliminary design except for the following:

- Design speed / rate of superelevation of curve on Relocation Dr. at the Pacific Blvd intersection. The nominal design speed of Relocation Dr is 40 mph; however, use of the ULS standard with a maximum superelevation of 2% results in a design speed for this curve slightly higher than the posted speed of 35 mph, and slightly less than 40 mph. A design waiver for this is in process; Design-Builder's Price Proposal shall be based on the assumption that this will be approved prior to issuance of NTP.

However if during further development of the design the Design-Builder identifies substandard features, the Design-Builder is required to either eliminate them through design improvements or apply for the appropriate design exceptions and/or waivers. The costs for preparation of design waivers or exceptions and any information needed to support these documents is the responsibility of the Design-Builder. Any schedule delays as a result of the approval process are the responsibility of the Design-Builder.

The preliminary plans call for the construction of free-standing handrail VDOT Std. HR-1 adjacent to a partial length of the proposed multi-use path. Since Std. HR-1 does not include a foundation detail for free-standing HR-1, the Design-Builder shall be responsible for designing and constructing a foundation that meets the requirements of the current edition of the Virginia Uniform Statewide Building Code.

2.3 Structures

Structural elements of this project may include traffic signal poles, foundations, and mast arms, and will include minor drainage structures such as manholes and drop inlets.

2.4 Environmental

2.4.1 Environmental Document

In accordance with the requirements of the NEPA, a CE, dated November 3, 2009, has been completed for the Project. Preliminary Plans, Specifications, and Estimates ("PS&E") Re-evaluation and Environmental Certification (dated December 10, 2009) have also been completed by VDOT. These documents are included in the RFP Information Package – CD-ROM.

The Design-Builder shall carry out the environmental commitments during design and construction, as applicable, as identified in the CE, the PS&E re-evaluation, and the Environmental Certification forms. All commitment compliance shall be supported by appropriate documentation, to be provided by the Design-Builder to VDOT. VDOT shall then complete the final PS&E re-evaluation and Environmental Certification forms prior to the VDOT Project Manager releasing the project for construction.

Any changes in scope or footprint proposed by the Design-Builder that are acceptable to VDOT may require additional environmental technical studies and analysis. The Design-Builder will be responsible for providing design information to support any additional environmental technical studies and analysis that may be necessary. VDOT will be responsible for the preparation and coordination of any revised environmental documents. The Design-Builder shall carry out any additional environmental commitments that result from such coordination at its sole expense and no additional cost to the Project.

2.4.2 Water Quality Permits and Compensatory Mitigation

VDOT's permit determination (dated July 7, 2009; included in RFP Information Package CD-ROM) for the project indicated no jurisdictional waters of the U.S. (i.e., streams and wetlands) will be impacted by the proposed construction; no water quality permitting or compensatory mitigation is required for the current project.

However, any changes in scope or footprint proposed by the Design-Builder that are acceptable to VDOT will require a revised permit determination. In the event that water quality permit(s) are required by scope/footprint changes, the Design-Builder shall support VDOT's permit acquisition efforts by providing (but not limited to) design details, utility relocations, project descriptions, permit sketches and quantities information which shall include information such as limits of jurisdiction, square feet of impact below OHW (or MLW) both permanent and temporary, cubic yards of impact below OHW (or MLW) both permanent and temporary and broken out by excavation, permanent fill and temporary fill quantity calculations, plan views, section views, construction notes, construction phasing details, temporary construction measures, erosion and sediment controls, hydraulic commentary, and access requirements. VDOT shall utilize this information to complete a Joint Permit Application.

The Design-Builder shall support/attend VDOT's presentation if requested at the IACM, address agency comments/concerns, evaluate and/or incorporate design changes for avoidance and minimization, attend regulatory agency field reviews, etc as requested by VDOT. The Design-Builder's Price Proposal shall not include costs for VDOT's tasks associated with water quality permit acquisition. However, all costs associated with the Design-Builder's support of VDOT's permit determination and/or permit acquisition shall be included in the Design-Builder's Price Proposal.

If VDOT determines that wetlands and/or stream mitigation is required to secure the permit authorization, VDOT will provide the required compensatory mitigation. The Design-Builder shall not include that cost in its Price Proposal.

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. However, 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 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 Manger release of the work, the Design-Builder shall notify in writing the VDOT Project Manager 14 days prior to beginning work in the jurisdictional areas covered by the water quality permits so the required agency notifications can be made by VDOT.

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 in writing the VDOT Project Manager of the completion of the work in the areas covered by the water quality permits so the required agency notifications can be made by VDOT. Any fines associated with environmental permit or regulatory violations shall be the responsibility of the Design-Builder.

2.4.3 Hazardous Materials

VDOT Hazardous Materials staff performed a review of available documents and site surface inspections revealed no hazardous materials concerns with the proposed project footprint (dated October 9, 2009; included in RFP Information Package – CD-ROM).

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 notify the VDOT Project Manager immediately of all instances involving the spill, discharge, dumping or any other releases of hazardous materials into the environment and shall provide all required notifications and response actions. 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 is to conduct a review(s) of all the staging areas for the presence of hazardous materials prior to use, and shall document the findings, and submit to the VDOT Project Manager.

2.4.4 Environmental Compliance

The Design-Builder is responsible for compliance with all applicable state and federal environmental laws, regulations, and permits. Should any non-compliant item(s) be identified during construction by the Design-Builder, immediate and continuous corrective action shall be

taken to bring the item(s) back into compliance. If at any time, the Design-Builder is not in compliance with all applicable environmental laws, regulations, and permits the VDOT Project Manager has the authority to suspend work, in whole or in part, until such time as the deficiencies or non-complaint situations have been corrected.

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 or any environmental restoration activities associated with violations shall be the responsibility of the Design-Builder.

The Design-Builder shall include in the Price Proposal all costs associated with complying with these requirements.

2.5 Survey

VDOT has completed a Location Survey according to VDOT Survey Manual, conforming to VDOT Standards, including, but not limited to the following:

- Horizontal control
- Vertical control
- Notification of property owners*
- Field data
- Topography
- Property data
- Utilities
- Levels
- Digital Terrain Model

*Design-Builders should be aware that Virginia Code 33.1-94 requires that notice "be sent to the owner by certified mail, at the address recorded in the tax records, return receipt requested, 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." Advance notification of property owners is required for all data collection efforts related to the development of highway plans.

The Design-Builder will be responsible for obtaining any additional survey needed to accommodate their final design. 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 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.

2.6 Geotechnical Work

VDOT completed a preliminary geotechnical subsurface investigation for this Project. The results of the investigation are presented in the Geotechnical Engineering Data Report prepared by VDOT dated December 16, 2009 (Included in the RFP Information Package – CD-ROM).

The data included in this RFP is being provided for Design-Builder's information in accordance with Section 102.04 of Division I Amendments to the Standard Specifications ("Part 5"). The Design-Builder shall perform a design-level geotechnical investigation to validate and augment the geotechnical information included in this RFP. The geotechnical engineering investigation performed by the Design-Builder shall meet or exceed both Chapter 3 of the VDOT Manual of Instructions ("MOI") for Material Division and VDOT Modifications as well as Section 700.04(c) of the 2007 Road and Bridge Specifications.

The Design-Builder shall collect appropriate data for geotechnical evaluation of embankments, soil and rock cuts, signal pole foundations and minor structures including drainage pipes, and any other earth supported structures or elements of highway design and construction. The Design-Builder will be responsible for obtaining water quality permit(s) required for any additional borings needed in performance of the Design-Builder's geotechnical investigation for this Project. The Design-Builder shall complete laboratory tests in accordance with pertinent ASTM or AASHTO standards and analyze the data to provide design and construction requirements. Soils, aggregate, concrete and other materials tests shall be performed by a laboratory accredited through the AASHTO Accreditation Program ("AMRL" and "CCRL") for each test it conducts for the Project, unless otherwise approved by VDOT.

The Design-Builder shall provide all records of subsurface explorations and describe the soils encountered and their depth limits in accordance with the requirements outlined in Chapter 3 of the VDOT MOI's for Materials Division. The Design-Builder shall provide electronic copies of all subsurface explorations in accordance with the boring log template available on the website address included in Chapter 3 of the VDOT MOI's for Materials Division. The electronic files shall be provided by a certified professional geologist or a 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").

Where applicable, the Design-Builder shall incorporate reliability assessments in conjunction with standard analysis methods. An acceptable method for evaluation of reliability is given by Duncan, J.M. (April 2000) *Factors Of Safety And Reliability In Geotechnical Engineering*, Journal of Geotechnical and Geoenvironmental Engineering, ASCE, Discussions and Closure August 2008. 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. The Department may, in its sole discretion, accept or reject such proposed methods.

The Design-Builder shall submit to the Department for its review all geotechnical design and construction memoranda and/or reports that summarize pertinent subsurface investigations, test, and geotechnical engineering evaluations and recommendations utilized in support of their design/construction documents. This submittal shall be made at least 30 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 documents to assure that it appropriately incorporated the geotechnical components and shall submit evidence of this review to accompany the final design/construction documentation. The Design-Builder shall reference the drawings that incorporate the pertinent results. The Design-Builder's Quality Assurance and Quality Control Plan shall document how each specific geotechnical recommendation or requirement will be addressed in the final design/construction documentation. The results of the geotechnical investigation and laboratory results shall support design and construction efforts to meet the requirements outlined in this Section.

2.6.1 Minimum Pavement Sections

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

The Design-Builder shall prepare and incorporate into the plans, typical sections, profiles and cross-sections of the validated pavement sections 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. Underdrains are identified in the Geotechnical Engineering Data Report which governs over the location of underdrains shown in the preliminary plans. The minimum pavement sections are as follows:

Route 1036, Pacific Boulevard Widening and Reconstruction of Route 775, Relocation Drive

All new pavement widening to be accomplished in accordance with standard WP-2 prior to building up existing grades on the adjacent pavement. All existing pavement shall be cut to a smooth vertical face in all widened areas. All existing paved shoulder to be demolished in widened areas.

Surface – 1.5" Asphalt Concrete, Type SM-9.5D (estimated at 183 lbs/yd^2)
Intermediate – 2" Asphalt Concrete Type IM-19.0A (estimated at 245 lbs/yd^2)
Base – 5" Asphalt Concrete, Type BM-25.0A
Subbase – 8" Aggregate Base Material, Type I, Size No. 21B extended up to the face of UD-4/Modified UD-1 edgedrain placed beneath shoulders or curb and gutter. Modified UD-1 underdrain will be provided in lieu of standard UD-4 edgedrain for pavement sub-drainage in areas of high ground water, springs or deep (>15') cuts. The modification consists of wrapping the aggregate with geotextile drainage fabric.

For **paved shoulders** use 1.5" SM-9.5D, 2" IM-19.0A over 13" of Plain Aggregate, Type I, Size No. 21B extended up to the face of UD-4/Modified UD-1 edgedrain. All paved shoulders that are 3' in width or narrower shall be constructed using the mainline pavement section.

Route 775, Relocation Drive

The existing pavement at the intersection of Relocation Drive shall be demolished between Stations 304+50 and 308+00 and reconstructed with the minimum pavement section for Pacific Boulevard indicated above. The remaining sections of pavement on Relocation Drive within the project limits shall be milled to a depth of 1.5" and resurfaced with Asphalt Concrete, Type SM-9.5D.

Multi-Use Trail

Surface - 2" Asphalt Concrete, Type SM-9.5A estimated at 245 lbs/yd^2
Base - 6" Plain Aggregate, Type I, Size No. 21B extended a minimum of 6" on either side of the paved surface.

Sidewalk

Surface - 4" Hydraulic Cement Concrete, Class A-3
Base - 4" Plain Aggregate, Type I, Size No. 21B extended a minimum of 6" on either side of the paved surface.

The minimum pavement designs are based upon the following criteria:

- A minimum soil CBR value of 4.3 (therefore all imported borrow shall have a minimum CBR value of 5).
- All subgrade is compacted in accordance with the applicable sections of the Road and Bridge specifications and applicable special provisions.
- All unsuitable materials must be removed or modified in accordance with Part 5 of the RFP.

Traffic loadings and design considerations used in the development of the minimum pavement sections are documented in the Geotechnical Engineering Data Report. The Design-Builder shall confirm through VDOT that the traffic loading detailed in Data Report is valid for use in final pavement design during the Scope Validation Period.

Adequate control of surface and ground water will be a very important consideration for the overall performance of this pavement design. The area surrounding pavements should be graded to direct surface water away from paved areas. Any utility excavations or excavations for storm drains within pavement areas must be backfilled with Select Material, Type I, Minimum CBR 30 in accordance with applicable sections of the Road and Bridge specifications and applicable special provisions.

2.6.2 Geotechnical Requirements

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.

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

- Settlement that does not result in damage to adjacent or underlying structures, including utilities.

- For pavement sections of 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.

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

The maximum slope ratio to be used for cut and/or roadway embankment fill slopes should not be steeper than 2H:1V and provide a minimum factor of safety of 1.3 against global stability failure.

Incorporate reliability assessments as referenced above.

2.7 Hydraulics

2.7.1 Drainage

The drainage design work shall include the design of culverts, open channels, storm sewers, adequate outfall analysis (in accordance with DCR Minimum Standard 19), and erosion and sediment control in compliance with the standards and reference documents listed previously in Section 2.1 and the latest VDOT Erosion and Sediment Control & Stormwater Management Program that is annually approved by the Virginia Department of Conservation & Recreation (DCR).

2.7.2 Erosion and Sediment Control

An Erosion and Sediment Control ("ESC") Plan and a Stormwater Management Plan must be prepared and implemented in compliance with the Virginia Erosion and Sediment Control Law, the Virginia Erosion and Sediment Control Regulations, the Virginia Stormwater Management Act, the Virginia Stormwater Management Regulations. The Design-Builder must certify that the Erosion and Sediment Control and Stormwater Management Plans have been designed and reviewed in accordance with Virginia Department of Conservation and Recreation ("DCR") regulations and VDOT policies and procedures, including applicable I&IM. A qualified person, other than the designer, who is a certified DCR Plan Reviewer, must independently review and certify the ESC Plans. The Design-Builder shall complete and submit the ESC and SWM Plan Certification form ("LD-445C") to the VDOT Project Manager certifying the ESC and SWM plan for the Project is in accordance with VDOT's Approved ESC and SWM Standards and Specifications. The Design-Builder will be responsible for compliance with construction-related permit conditions and shall assume all obligations and cost 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.

As the land-disturbing activity is greater than one acre, coverage under the VSMP General Construction Permit is required. The Design-Builder shall coordinate and submit required information to the VDOT Project Manager. The Design-Builder shall complete the applicable sections of the VSMP Permit Registration form ("LD-445"), VSMP Construction Permit Contact Information ("LD-445A"), VSMP Permit Fee Registration form ("LD-445B"), ESC and SWM Plan Certification form ("LD-445C") and submit this assembly to the VDOT Project Manager. The VDOT Project Manager will review the submitted information and request coverage under the VSMP General Construction Permit in accordance with VDOT's guidelines. The Design-Builder shall not proceed with work covered by the permit until the VDOT Project Manager releases the work in writing. This represents a hold point in the Design-Builder's CPM Schedule. Design-Builder shall provide completed Stormwater Pollution Prevention Plan ("SWPPP") Certification form ("LD-445 E") before any land disturbing activity and shall complete and include the SWPPP General Information Sheet in the plan assembly per the latest version of IIM-246. Upon completion of the regulated land disturbing activity, the Design-Builder shall complete and sign the VSMP Permit Termination Notice form ("LD-445D") and submit it to the VDOT Project Manager for processing. The Design-Builder shall also have on-site during 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 requirements.

2.7.3 Stormwater Management Facilities

The scope of services does not include the design or construction of stormwater management facilities. The existing SWM facility located at the northeast quadrant of the Pacific Boulevard and Sterling Boulevard intersection was designed to accommodate the stormwater management requirements associated with widening Pacific Boulevard from 2 to 4 lanes within the project limits. The Design-Builder will be responsible for ensuring that project drainage systems are designed to properly convey stormwater to the facility.

2.8 Traffic Control Devices

The Project shall include all temporary and permanent signs, guardrail, traffic signals, pavement markings, and pavement markers.. Signing and striping plans, traffic signal plans, a 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. All existing traffic control devices within the Project limits shall be modified, upgraded, or replaced to meet current VDOT standards including the *VDOT Traffic Engineering Design Manual*, *MUTCD* and the *Virginia Supplement to the MUTCD*, *VDOT Road and Bridge Standards*, *VDOT Road and Bridge Specifications*, and other VDOT Northern Region Operations requirements.

2.8.1 Signs

The Project shall include all required modifications to existing signs and sign structures and all required new temporary and permanent signs and structures as well as any signs required along the shared use path ("Multi-Use Trail"), sidewalk, and connections to the existing pedestrian facilities. Any signs on adjacent roadways and other facilities (sidewalks, paths, and trails) that require relocation/replacement including modifications / additions due to construction activities or configuration changes shall be the responsibility of the Design-Builder.

An existing sign inventory shall be completed prior to site demolition. This existing information shall be submitted at the same time as the first plan submittal for proposed signing. The Design-Builder shall accomplish the sign panel design using GUIDSIGN software.

2.8.2 Signals

All temporary traffic signal plans shall be submitted to VDOT for review and approval prior to construction phase, detour or traffic shift. All permanent traffic signal plans and traffic signal modification plans shall be reviewed and approved by VDOT. New permanent traffic signals shall be of post and mast arm design; strain poles and span wire will not be incorporated in the completed project.

Traffic signal communication must be established and maintained for the duration of construction for all (existing, temporary and newly constructed) traffic signals within the existing VDOT signal system.

Construction of all other traffic signal items (conduit-cable runs, power feed, demolition of foundations, installation and removal of signals/signs/poles/vehicle and pedestrian detectors etc.) must meet current VDOT signal construction specifications and VDOT Northern Region Operations requirements.

A 170-controller and cabinet will be provided to Design-Builder at no cost by the VDOT NORTHERN REGION OPERATIONAL INSTALLATION & CONSTRUCTION ("NROIC") section of the Northern Virginia District. The Design-Builder shall contact Mr. Jerry Gray (NROIC) at (703) 334-0205 at least two months prior to requiring the 170-controller and cabinet. Two weeks prior to the desired pick up date, the Design-Builder shall coordinate with Mr. Jerry Gray (NROIC) at (571) 437-6703 to verify equipment is available and arrange pick up. The equipment can be picked up from VDOT's NROIC location at 8010 Mason King Court, Manassas, VA 20109. Upon receipt of the 170-controller and cabinet from VDOT, the Design-Builder's qualified representative shall wire the cabinet, program, and test the phasing of the intersection as shown on the previously approved signal plans. The Design-Builder shall provide a certification letter to VDOT indicating that the work is in compliance with VDOT standards, VDOT NRO requirements, and the approved signal plans. As part of the installation, the Design-Builder is responsible for providing the VDOT Standard CF-3 concrete foundation per **2008** Road and Bridge Standards and the phone company access compartment shown as CC-2.

LEDs must be used for all vehicular and pedestrian traffic signals. Traffic signal heads and accessories must meet current VDOT signal specifications.

LED Countdown equipment shall be used for all signalized pedestrian crossings. All push-buttons must be compliant with American with Disabilities Act Accessibility Guidelines.

All new traffic signals must be equipped with an Uninterruptible Power Supply ("UPS") and cabinet meeting the requirements of VDOT NOVA Region Specification for an Uninterruptible Power Supply System.

Loop detection shall be installed and maintained for the duration of construction for all existing, temporary and new traffic signals.

Electrical Service shall be SE-5 in accordance with 2008 Road and Bridge Standards.

Traffic signal installations or modifications shall not be placed into full color operation on Mondays, Fridays, holidays or days preceding of following holidays, unless otherwise directed by the VDOT Northern Region Operations Engineer.

Traffic signal installations or modifications must be inspected by a VDOT designated signal technician and satisfy all punch-list items before they are turned over to VDOT for maintenance and operations.

All new or modified traffic signal structures computations and shop drawings for foundations, poles and mast arms shall be designed with an additional 20% loading factor to accommodate future modifications and must be approved by NOVA Structure and Bridge Section prior to start of construction.

All newly or modified constructed traffic signals must be inspected by a designated NOVA Structure and Bridge Section Inspector and satisfy all punch-list items before they are turned over to VDOT for maintenance and operations.

The Design-Builder shall be responsible for scheduling and coordination of the above-referenced inspections of signal equipment and structural elements.

2.8.2.1 Signal timings

Traffic Signal timing plans must be submitted to the VDOT Project Manager with the first submission of the traffic signal plans.

The Design-Builder shall be responsible for all changes required for timing plan approval.

The final timing plan for implementation shall be reviewed and approved by VDOT a mandatory sixty (60) days prior to activation of the traffic signal.

The traffic signal shall not be activated until the final timing plans have been reviewed and approved by VDOT's Traffic Signal Operations Section.

The guidelines below pertain to any and all construction for signalized intersections within the VDOT Northern Region. These guidelines encompass all new construction and modifications for existing, proposed, and adjacent signalized intersections.

Following are the guidelines for traffic signal timing plan development:

- Upon request, VDOT Northern Region Operations ("NRO") shall provide the project with VDOT's most current Synchro files (if available) including: signal timing, volume, and geometric data element for existing and/or adjacent signalized intersections. To request this information, contact Mr. Nhan Vu of NRO via email at nhan.vu@vdot.virginia.gov
- The Design-Builder may add to the file proposed changes. Any changes made to the adjacent signalized intersections shall include timing, volume, and geometric data elements in the file, and must be submitted to VDOT for review and approval.
- The Design-Builder is responsible for collecting, entering, and evaluating all traffic signal related data (i.e. traffic counts, lane configurations, phasing, detector placements, pedestrian movements, storage bay lengths, etc.) for existing, proposed, and/or adjacent signalized intersections needing to be modified.
- Vehicle clearance times shall be calculated based on the standards specified in VDOT TE-306 Memorandum with NOVA addendums. Pedestrian clearance times shall be calculated based on the 2003 Manual on Uniform Traffic Control Devices ("MUTCD"). The Design-Builder shall furnish to the Department the documentation used in calculating these clearance timings.
- If the proposed traffic signal is located between existing coordination signalized intersections, the proposed traffic signal should be operated in coordination with the existing coordinated signalized intersections. Any traffic signal inserted into a corridor that is deemed or calculated to be in the critical intersection may require an entire corridor evaluation. Any changes made to the intersections in the corridor shall include timing, volume, and geometric data elements in the files, and must be submitted to and approved by VDOT. However, if the proposed traffic signal is isolated, it may be placed in free operation. VDOT shall approve all free operation requests before implementation.
- The Design-Builder is responsible for submitting traffic signal timing data a minimum of 60 days prior to activation of the new signal installation; this includes eight (8) time-of-day timing plans to reflect cycle lengths necessary to accommodate changes in traffic patterns for weekdays and weekends. The 8

timing plans consist of 4 timing plans for weekdays (AM, MID, PM, Off-peak) and 4 timing plans for weekends (Saturday Peak, Sunday Peak, Weekend before peak, and Weekend after peak). These timing plans are to be submitted to the VDOT Permits section for review and approval by the NRO Traffic Signal Operations Section. This information is to be provided in an electronic file format compatible with the SYNCHRO program used by VDOT. After approval, the timing plan file needs to be formatted into the 170 format for implementation by the Design-Builder.

2.8.3 Guardrail

The Design-Builder shall make reasonable effort to ensure that the clear zone within the project limit is free from hazards and fixed objects in accordance with *Clear Zone Guidelines* as stated in *VDOT Road Design Manual Appendix A-2*. In the event that removal or relocation of hazard and fixed objects from the clear zone is not feasible, the Design-Builder shall design and install appropriate barrier system for protect in accordance with NCHRP 350. The same requirement applies to existing conditions affected by this project where guardrail upgrade will be required. All existing sub-standard guardrail within the Project Limits must be upgraded by the Design-Builder to meet current standards.

2.8.4 Pavement Markings / Markers

The Design-Builder shall include all required pavement markings and markers**.** All edge lines, centerlines skip lines, stop bars, and cross walks shall be Type B, Class VI, patterned preformed tape. Existing pavement markings that are no longer needed or which are inconsistent with or in conflict with the final design of the roads and intersections within the project limits shall be eradicated and replaced with new markings consistent with the design of the improved facility.

All pavement markings shall be in accordance with VDOT Traffic Engineering Guidelines, dated January 2005.

2.9 Transportation Management Plan

The Design-Builder shall prepare a Transportation Management Plan ("TMP") in accordance with IIM 241 and TED-351 for all proposed work associated with the Project. This Project is classified as a Type A in terms of the TMP.

The Design-Builder has the option of closing Pacific Boulevard for the duration of construction. If Design-Builder elects this option, it shall be responsible for providing and maintaining all detour signs. A graphic of the detour route endorsed by the Loudoun County

Board of Supervisors is included in the RFP Information Package CD-ROM. This route shall be used if the Design-Builder elects to close Pacific Boulevard.

A long term closure will not be permitted at Relocation Road. However, short term closures lasting up to twenty (20) minutes will be considered if the Offeror demonstrates coordination with the affected landowners and local authorities. Emergency access must be maintained at all times.

The Design-Builder shall develop and deliver a Transportation Management Plan, detailing the temporary traffic control plan, the public communications plan, traffic operations analyses (including incident management) for all phases of work, with proposed lane/road closures, and all construction accesses for approval by VDOT. This plan shall be prepared based on traffic/crash analysis and implemented to promote safe and efficient operation of adjacent public transportation facilities and State Highways in accordance with IIM 241.

This plan shall reflect the noted Scope of Work and all applicable VDOT Standards and Specifications and Loudoun County ordinances regarding time of work. This plan shall, unless otherwise directed by VDOT, also incorporate a regular weekly update to VDOT Traffic Operations Center regarding any scheduled lane closures and identification of work areas for the two weeks following the update.

2.9.1 Holiday/ Major Events Restrictions

Unless otherwise approved by VDOT as part of the Transportation Management Plan, no temporary lane restrictions shall take place between 12:00 noon on the Friday preceding and 12:00 noon Tuesday following Memorial Day and Labor Day; or any state or federal holiday if these holidays occur on Saturday, Sunday or Monday. If any state or federal holiday falls on a weekday other than Monday, there shall be no temporary lane restrictions between 12:00 noon the day before and 12:00 noon the day after each of these holidays. No lane restriction shall take place between 12:00 noon Wednesday preceding and 12:00 noon the Monday following Thanksgiving Day.

2.10 Public Involvement / Relations

VDOT posted a Notice of Willingness to Conduct a Public Hearing in November 2009, which expired with no request for a public hearing received. Design-Builder shall be responsible for the following:

- Providing a point of contact and phone number for the public to use in calling to request information or express concerns during the project.
- Coordinating preparation and release of public information with VDOT's Northern Virginia Office of Public Affairs.

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

- Hold informal meetings with affected local citizen groups and businesses as necessary and as directed by VDOT. Any meetings held will be in accordance with the VDOT Policy Manual for Public participation in Transportation Projects, updated September 2004.
- Provide to VDOT's Northern Virginia Office of Public Affairs written information about the project suitable for posting by VDOT on its Web site. Such information will include a project overview, plan of work for the coming month, overall project schedule and contact information as well as updated project photos. Web content should be updated at least twice a month throughout the duration of the project.

During the construction phase, the Design-Builder shall:

- Provide to the Northern Virginia Office of Public Affairs at least weekly written information about the project's affects on traffic (traffic updates) that may be used by VDOT for issuing news releases to the public.

2.11 Right-of-Way

The Design-Builder, shall act on behalf of the Commonwealth of Virginia ("Commonwealth"), and provide all Right of Way ("ROW") acquisition services for the Project. Right of Way acquisition services shall include appraisal, appraisal review, negotiation, relocation assistance services, title examinations, and closings.

All appraisers and acquisition firms shall be selected from VDOT's pre-approved list. VDOT will retain authority for approving 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. VDOT must also issue a Notice to Commence Construction to the Design-Builder once the property has been acquired prior to commencing construction on the property. The Design-Builder will **NOT** be responsible for the actual cost of purchase of right of way, including utility easements, as part of the Project. The Design-Builder shall carry out the responsibilities as follows:

- Acquire property in accordance with all applicable Federal and State laws and regulations, including but not limited to the Uniform Relocation 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 and Utilities Division Manuals, Vol. I and II.

- VDOT will 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.

- Submit procedures for handling right of way acquisitions and relocations to VDOT for approval prior to commencing right of way activities. These procedures are to show the Design-Builder's methods, including the appropriate steps and workflow required for title examinations, appraisals, review of appraisals, negotiations, relocation and parcel closings. The Design-Builder shall have the same authority for administrative settlements as established for VDOT's District Right of Way and Utilities Manager in the VDOT Right of Way and Utilities Division Manuals, Vol. I and II. These procedures shall include an appropriate time allowance for VDOT to review and approve just compensation, approve relocation benefits, and approve administrative settlements. A VDOT Representative will be available to make timely decisions concerning establishing review and approval of just compensation, approval of relocation benefits, and approval of administrative settlements on behalf of VDOT. The VDOT Representative is committed to issuing decisions in approval requests within 21 days of receipt of an acceptable submission. The commitment is based on the plan providing a reasonable and orderly workflow and the work being provided to the VDOT Representative as completed.

- Submit a project specific ROW acquisition and relocation plan for VDOT approval. The plan shall identify a schedule of right of way activities including the specific parcels to be acquired and all relocations. 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.

- 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 weekly to accurately reflect current project status. Design-Builder shall use the VDOT standard forms and documents, as found in RUMS. Any changes to the forms and documents must be approved by VDOT. Training in the use of RUMS and technical assistance will be provided by VDOT.

- Provide a current title examination (no older than sixty days) for each parcel at the time of initial offer to landowner. Each title examination report shall be prepared by a VDOT-approved title company in accordance with VDOT's Right of Way Manual and shall include Title Insurance. Should the Design-Builder select a law firm to certify title examinations, the certifying attorney shall show evidence of Professional Liability Insurance. VDOT reserves the right to determine if the Professional Liability Insurance coverage is sufficient. If any title examination report has an effective date that is older than sixty days, an update is required prior to making an initial offer to the landowner.

- Prepare appraisals in accordance with VDOT's Appraisal Guidelines.

- Provide appraisal reviews complying with technical review guidelines of VDOT's Appraisal Guidelines and make a recommendation of just compensation. The reviewer shall be approved by VDOT and shall be on VDOT's approved fee appraiser list. VDOT shall have final approval of all appraisals. VDOT must approve any settlements above the most recent approved appraisal.

- 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 for all payments and send to Design-Builder, who shall be responsible for disbursement and providing indefeasible title to VDOT.

- Prepare, obtain execution of, and record documents conveying title to such properties to the Commonwealth and deliver all executed and recorded general warranty deeds to VDOT. 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, in lieu of fee simple title, with respect to any portion of the rights of way) and shall be conveyed to "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. 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, except in cases where eminent domain is invoked

- Because these acquisitions are being made as an agent 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 a condemnation action is necessary, taking into consideration the recommendations of the Design-Builder. The Design-Builder shall not request the filing of a certificate until the landowner has been given a minimum of 30 days to consider the offer or the landowner terminates negotiations. When VDOT authorizes the filing of a certificate, the Design-Builder shall prepare a Notice of Filing of Certificate. All required documents necessary to file a certificate shall be forwarded to the VDOT Project Manager who will forward the package to the District Right of Way and Utilities Manager for review. Upon approval, the District Right of Way and Utilities Manager will return the package along with a State Warrant to the VDOT Project Manager who will then forward to the Design-Builder. The Design-Builder shall be responsible for filing the certificate.

- The following will be paid, if and when necessary, under a Work Order in accordance with Article 9 of the General Conditions of Contract: The Design-Builder will be responsible for continuing further negotiations to reach settlement after the filing of certificate. The Design-Builder shall provide the necessary staff and resources to work with VDOT 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 shall provide updated appraisals (*i.e.*, appraisal reports effective as of the date of taking) and expert testimony supporting condemnation proceedings upon request by VDOT.

- The Design-Builder shall be responsible for all contacts with landowners for rights of way or construction items.

- The Design-Builder shall use reasonable care in determining whether there is reason to believe that property to be acquired for rights of way may contain concealed or hidden wastes or other materials or hazards requiring remedial action or treatment. When there is reason to believe that such materials may be present, the Design-Builder shall take steps consistent with customary VDOT practices to investigate. VDOT shall be notified of the presence of such materials before an offer is made to acquire the property.

- 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, or until the Commonwealth 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 or audit. Throughout the design, acquisition and construction phases of the Project, copies of all documents/correspondence shall be submitted to the Project Manager, Central Office and respective District Offices.

2.12 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.

The Design-Builder shall be responsible for utility designations, utility locates (test holes), conflict evaluations, cost responsibility determinations, utility relocation designs, utility relocations and adjustments, utility reimbursement, replacement land rights acquisition and utility coordination required for the Project. Design-Builder is responsible for all necessary utility relocations and adjustments to occur in accordance with the accepted Baseline Schedule. All efforts and cost necessary for utility designations, utility locates (test holes), conflict evaluations, cost responsibility determination, utility relocation designs, utility relocations and adjustments, utility reimbursements, replacement land rights acquisition and utility coordination shall be included in the Design-Builder'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 Design-Builder's Price Proposal.

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

The Design-Builder shall initiate early coordination with all utilities located within the Project limits. The Design-Builder shall identify and acquire any replacement utility easements or required right-of-way needs of all utilities necessary for relocation due to conflicts with the Project.

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 will use the Design-Builders 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 review meeting with all affected utilities to assess and explain the impact of the Project. VDOT's Project Manager and District Utilities Engineer (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 should 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 easements, plans, or other supporting documentation that substantiates any compensable rights of the utilities. The Design-Builder should 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 VDOT Right-of-way and Utilities Division Manual, Volumes II, Utility Relocation Policies and Procedures and VDOT's Land Use Permit Manual. The Design-Builder shall also ensure that there are no conflicts with the proposed roadway improvements, and ensure that there are no conflicts between each of the utility's relocation plans. The Design-Builder shall prepare and submit to VDOT all relocation plans. The Design-Builder is expected to assemble the information included in the relocation plans in a final and complete form and in such a manner that VDOT may approve the submittals with minimal review. The Design-Builder is expected to meet with VDOT's District Utilities Office within 45 days of the Date of Commencement to gain

a full understanding of what is required with each submittal. The Design-Builder shall receive written approvals from VDOT prior to authorizing utilities to commence relocation construction. The utilities shall not begin their relocation work until authorized by the Design-Builder. Each relocation plan submitted must be accompanied by a certification from the Design-Builder stating that the proposed relocation will not conflict with the proposed roadway improvement and will not conflict with another utility's relocation plan.

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

The Design-Builder shall accurately show the final location of all utilities on the as-built drawings for the Project. Known utility owners and their respective contact numbers include but are not limited to the following:

Dominion Virginia Power
171 Elden Street
Herndon, VA 20171
Mr. Fred Perry
~~(703) 375-5978~~ 703-375-5909

Comcast
4191 Dale Boulevard
Woodbridge, VA 22193
Mr. Jeff Kelley
(703)-670-0189 ext 6369335

Verizon
1880 Campus Commons, 2nd Floor
Reston, VA 20191
Mr. Reginald Todd Lawson
(703) 390-3415

WGL
6801 Industrial Road
Springfield, VA 22151
Mr. Allan Melliza
(703) 750-4256

Loudoun Water
44865 Loudoun Water Way
P.O. Box 4000
Ashburn, VA 20146
Mr. Ralph Welliver
(571) 291-7916

AboveNet
14120 Newbrook Drive, Suite 170
Chantilly, VA 20151
Mr. James Stiefvater
(703) 657-7169

AT&T
4800 Winchester Boulevard
Frederick, MD 21703
Mr. Gary Wigfield
(301) 874-1180

2.13 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 General Conditions under 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 limited to:

1. Preparatory Inspection Meeting requirement, including incorporation of at least one each, Witness and Hold Point, as set forth in Sections 105.04,105.05 and 105.10, Department's guidance document for Minimum Quality Assurance and Control Requirements for Design-Build and Public-Private Transportation Act Projects, August 2008 (August 2008 QA/QC Guide);
2. At least one (1) material which the Department retains responsibility for testing as identified in Table 105-1, (August 2008 QA/QC Guide);
3. Situation arising requiring the issuance of a Non-conformance Report, 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 105.09.01.01 for nonconforming Work resulting from:
    a. defective equipment

b. construction activities/materials which fail to conform as specified;

4. Inspection documentation capturing requirements as set forth in Section 105.13 (VDOT's Minimum Requirements for Quality Control and Quality Assurance for Design-Build and PPTA Projects dated August 2008); as well as inspection of foundation and pavement subgrades that are to be performed and certified by a qualified license geotechnical engineer in accordance with the special provisions referenced in this Document.
5. Application for payment for Work Package which includes work element, including review and approval by Quality Assurance Manager;
6. 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 105.13.01 (see Section 803.73 of Manual of Instruction, Form TL-142S, an example of a completed Materials Notebook and VDOT Materials Division Memorandum Number MD299-07 for Materials Acceptance – October 4, 2007)

2.13.1 Design Management

The Design-Builder is responsible for design quality. The Design Manager, assigned by the Design-Builder, shall be responsible for overall management of the QA/QC programs for design. This individual shall report directly to the Design-Builder's Project Manager and is responsible for all of the design QA/QC activities. The quality control function during design is provided by design staff independently checking each other's work and the Design, Design Production and Design Leads performing formal and documented coordination reviews at pre-determined times on each submittal and on all ***Issued-for-Construction*** design packages. The Project Design Control Plan ("DCP") will provide VDOT assurance that the design plans and submittals will meet all project requirements. All design submittals and Issued-for-Construction plans will have written approval by the Design Quality Manager certifying that he/she has audited and approved the submittal.

The Project DCP includes:

- Written documentation and definition of the project's design criteria, standards, and processes;

- Procedures for the performance of senior experienced engineers' detailed checks of all design reports, calculations, drawings and specifications;

- Directions for interdisciplinary reviews by technical and management staff to provide coordination and uniformity among section designs; and

- Execution of design/build constructability reviews to facilitate the timely planning of construction activities.

Audits performed by the Design Quality Manager are conducted to verify conformance with the approved QA/QC Plan and to verify that the required checking and review functions are performed. The Quality Audits are in accordance with audit checklists, which are based on project procedures applicable to the area to be audited. During Basic Design Services, documented internal technical design audits performed by the Design Discipline Leaders determine if calculations, drawings, reports, and specifications meet both professional and contractually required standards.

Individual Design Discipline Leaders are responsible for the completion of all QC functions within the section and for the coordination of actual audit dates established by the Design Quality Manager. A schedule for audits is prepared and updated as necessary to reflect changes or refinements in the scope of the project work and the Project schedule.

All nonconforming practices will be corrected. Copies of all audit reports are retained in the Design Quality Manager's QA File.

The Design-Builder provides VDOT the necessary verification that the design submittals and plans released for construction will meet all project requirements. Documents which are "issued for construction" are accompanied by a Form that is signed off by the Design Quality Manager and Design Manager certifying that the "construction items" shown on the plans have been audited for compliance with the Design Control Plan, all requirements of the Contract RFP, and the Contract Proposal, and have passed.

The Design Quality Manager verifies the implementation and effectiveness of the corrective measures using informal surveillance or an actual formal audit. The time allowed for such follow-up activities depends on the importance of the corrective action required.

To provide effectiveness, procedure preparation is coordinated through the Design Quality Manager, Design Manager and designated staff so that their review and comments can be considered before finalizing the submittals. The Design Control Plan is a dynamic document and changes will be issued, as the program requires refinement or adaptation. The above-mentioned staff is also responsible for identifying those project activities that require a new procedure, and for defining the scope and content, along with preparation and distribution of each procedure, as applicable.

A Table of Contents is provided that illustrates the minimum contents of the Project Design QA/QC Procedures ("DQP").

SECTION 1 - GENERAL AND ADMINISTRATION

1.1 Preparation and Revision of Design QA/QC Procedures
1.2 Terms and Definitions
1.3 Quality Assurance Organization, Functions and Responsibilities

1.4 Documentation Control
1.5 Control of Customer-Supplied Product
1.6 Quality Records
1.7 Quality Control Coordinators Function and Responsibilities

SECTION 2 - PROJECT MANAGEMENT

2.1 Quality Program for Subconsultants
2.2 Quality Control and Verification of Computer Software
2.3 Preparation and Maintenance of the Project Procedures Manual
2.4 Contract Review and Coordination
2.5 Internal Quality Audits

SECTION 3 - PLANNING AND DESIGN

3.1 Checking of Calculations
3.2 Checking of Drawings
3.3 Checking of New Specifications. Revisions to Project Specifications and/or Special Provisions
3.3.1 New Specifications, Revisions to Corridor Specifications and/or Special Provisions
3.4 Checking of Input to Computer Programs
3.5 Review of Studies or Report-Type Documents
3.5.1 Review of Documents Prepared by Others
3.6 Design Coordination Review ("DCR") and Technical Coordination Review ("TCR") of Interim Submissions
3.7 Final Package Review ("FPR") of Documents
3.8 Quality Audits of Planning and Design Functions
3.9 Quality Control of CADD-Produced Documents
3.10 Documentation and Transmission of Design Directives and Revisions
3.11 Documentation and Notice of Design Change
3.12 Field Design Services
3.13 Implementation of Corrective and Preventive Action
3.14 Quality Control of Utility Design
3.15 Training

The Design Manager shall maintain close communication with Design-Builder's Project Manager and shall ensure the Project is completed in accordance with the requirements of the Contract Documents. The Design Manager shall perform all of the design oversight reviews. VDOT will participate in these reviews. VDOT holds the ultimate approval and disapproval authority. Under this procedure, the Design Manager will provide VDOT with draft design plans

for review and approval to confirm that the design work complies with the requirements of the Contract Documents, especially Section 2.4 of the General Conditions ("PART 4") and the Standard and Reference Documents listed in Section 2.1 herein prior to initiation of construction activities on the Project.

Plans to be reviewed shall be submitted to VDOT's Project Manager in accordance with Section 2.15.6 below. VDOT's Project Manager will distribute plans for review and/or approval. VDOT shall have the right to review and comment on all Draft Plans and Specifications for compliance with the requirements of the Contract Documents and Reference Documents. The Design-Builder shall be responsible to satisfy all such requirements and acknowledge that VDOT maintains the right to disapprove any design approach that it is not in compliance with the requirements of the Contract Documents and Referenced Documents unless said approach was previously approved in writing by VDOT.

The written approval of the modifications should be attached with the draft plans submitted for review. The Design-Builder shall revise and modify all draft design plans so as to fully reflect all comments and shall deliver the revised submittal to VDOT's Project Manager, who will distribute plans to appropriate VDOT staff for review and comments.

Construction Plans are to be submitted to VDOT for review and approval by the Chief Engineer prior to construction of that element. The time frame for plan review and approval shall be in accordance the requirements of the Contract Documents. The Design-Builder shall be responsible for the design details and ensuring that the design and construction work are properly coordinated. The Design-Builder shall be responsible for documenting any design exceptions or waivers that may be needed. VDOT will submit the design waivers and design exceptions to the appropriate reviewing authority for review and approval.

2.13.2 Construction Management

The plan requires that the Design-Builder shall have the overall responsibility for both the Quality Control ("QC") and Quality Assurance ("QA") activities. The Design-Builder shall be responsible for 100% QA work 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. The Design-Builder will also be responsible for providing quality assurance and quality control testing for all materials manufactured off-site, excluding the items listed below:

- 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 quality assurance and plant testing of these items. In the event that the Department determines that materials fail to meet the tolerances in the Road and Bridge specifications, a Non-Compliance Report ("NCR") will be issued by the VDOT Project Manager and addressed to the Design-Builder's QAM for resolution. The Design-Builder is responsible to submit a Source of Materials, Form C-25, for all materials the Department retains responsibility for testing. The C-25 is for informational purposes only for the Department for the purpose of performing QA inspections. The C-25 will not be approved or rejected by the Department since it is the Design-Builder's responsibility to obtain materials that meet the contractual requirements. The Design-Builder will be responsible for providing quality assurance and quality control testing of all off-site materials that are not identified above, to include 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 roadway, bridge and otherwise 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 ("IV") tests required as a result of the quantities and the sampling and testing requirements as set forth in Sections 105.4 and 105.5 (August 2008 QA/QC Guide). VDOT will provide all IA and IV tests and therefore final determination of the actual number of IA and IV tests to be performed will be made by the Department based on these quantities.

The QAM will be responsible for the QA inspection and testing of all materials used and work performed on the Project to include monitoring of the Contractor's QC activities, maintaining the Materials Notebook, documentation of all materials, sources of materials and method of verification used to demonstrate compliance with the Department Standards. This includes all materials where QA testing is to be performed by the Department. 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.

VDOT's role during construction operations will be limited to verification sampling and testing, independent assurance, review and processing progress payments, and oversight of the Design-Builder's construction management scheduling, document control and other Project control and Project management/administration efforts necessary to properly administer and manage the Project. All construction QA and QC personnel shall hold current VDOT materials certifications when testing hydraulic cement concrete, asphalt concrete, soils and aggregate, pavement markings and for the safety and use of nuclear testing equipment, as required by the Road and Bridge Specifications. The QA programs must be performed under the direction of the QAM. The QC programs should be performed under the direction of the Construction Manager.

Substitution of Construction Manager and the QAM shall require VDOT approval. In addition, VDOT shall have the right to order the removal of any construction QA and QC personnel to include the QAM and the Construction Manager for poor performance at the sole discretion of the VDOT Project Manager. The QA/QC plan shall include rapid reporting of non-compliance to the VDOT Project Manager, and the remedial actions to be taken as discussed in Section 105.12 of the Division 1 Amendments to the Standard Specifications ("PART 5").

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

- Project correspondence
- Project diaries
- Test reports
- Invoices
- Materials books
- Certified survey records
- DBE/EEO records
- Warranties
- Special Tools, etc.

2.14 Field Office

A field office will not be required for this Project.

2.15 Plan Preparation

2.15.1 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 Windows NT or Windows XP only: Geopak (current version used by VDOT), MicroStation (current version used by VDOT) and VDOT Standard Resources Files, and all the design files used to develop the preliminary roadway plans including aerial images and updated survey files.

2.15.2 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.

2.15.3 Drafting Standards

All plans shall be prepared in U.S. customary units and in accordance with the most recent version of the VDOT's Road Design Manual, Vol I, VDOT's CADD Manual and VDOT's I&IM 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 construction.

2.15.4 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 & PDF formats. 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.

2.15.5 Construction Plans

Construction Plans are those that are issued for construction and approval by VDOT's 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. 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. These plans will be issued for construction following approval by VDOT's Chief Engineer. The roadway plans

may be submitted for approval in logical subsections and consisting of work packages such as: 1) clearing and grubbing along with erosion and siltation control, grading and drainage, 2) paving, and 3) traffic control. A submittal schedule and planned breakdown of work packages shall be submitted to VDOT for approval as part of their planned Project schedule.

In addition, the construction plans shall include the following: 1) for all proposed and existing storm systems utilized for adequate outfall, provide plan and profiles prepared at 1 inch = 5 feet vertical and 1 inch = 25 feet horizontal and all associated calculation charts (capacity, inlet sizing, and HGL), and 2) provide adequate outfall cross sections and calculations.

The roadway plans described above shall be submitted to VDOT. VDOT shall receive ten (10) full-size sets and ten (10) half-size sets of each submission. The plan submissions shall be delivered, in accordance with Section 2.14.8 below, to the following addresses:

Virginia Department of Transportation
Location & Design
14685 Avion Parkway, Suite 220
Chantilly, VA 20151-1104
Attention: Timothy J. Hartzell, P.E.

2.15.6 Record (As-Built) Plans

The final plan milestone is Record ("As-Built") Plans. As-Built Plans shall be prepared, certified and submitted to the Department 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. The Design-Builder shall submit the As-Built Plans in both hard copy and electronic (DGN & PDF) formats.

2.15.7 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:
    - Construction Plans
    - Design Calculations
    - Drainage Calculations
    - Working/Shop Drawings
    - Record Plans ("As-Built")

2.16 Virginia Occupational Safety and Health Standards

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

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

2.16.1 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.

2.16.2 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.

2.16.3 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.

2.16.4 Approved high visibility Safety apparel shall be worn by all exposed to vehicular traffic and construction equipment.

2.16.5 Safety vest shall be worn by all exposed to vehicular traffic and construction equipment.

2.16.6 Flag persons shall be certified in accordance with the Virginia Flagger Certification Program.

2.16.7 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.

2.16.8 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.

2.16.9 All electrical tools shall be adequately grounded or double insulated. Ground Fault Circuit Interrupter (“GFCI”) protection must be installed in accordance with the National Electrical Code (“NEC”) and current Virginia Occupational Safety and Health agency (“VOSH”). If extension cords are used, they shall be free of defects and designed for their environment and intended use.

2.16.10 No person shall enter a confined space without training, permits and authorization.

2.16.11 Fall protection is required whenever an employee is exposed to a fall six feet or greater.

2.17 The American Recovery and Reinvestment Act of 2009 ("ARRA")

This Project is funded by the ARRA. Projects funded by the ARRA require an additional level of data reporting, therefore, reporting on this Project will meet the requirements of the ARRA. The Design-Builder shall be responsible for meeting all of the reporting requirements under the ARRA.

3.0 ATTACHMENTS

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

None.

All additional information is included in the RFP Information Package – CD-ROM referred to in Part 1, Section 2.7.4 of this RFP.

END OF PART 2
TECHNICAL INFORMATION & REQUIREMENTS