

Eastern Avenue Extension
Volume II
Technical Requirements

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1. Purpose and Project Description

The purpose of this Exhibit is to identify the scope and technical requirements (“Technical Requirements”) to develop and deliver the Project. The Work required by the Technical Requirements shall be undertaken by or on behalf of the Proposer. The purpose of the proposed project is to provide a connection between residential areas on the north side of Lickinghole Creek and Route 250 (Rockfish Gap Turnpike). This connection will supersede the approximately 5.5-mile detour currently required for residents to cross Lickinghole Creek and reach Route 250 (Rockfish Gap Turnpike), which is a key minor arterial linking to shopping centers, schools, and providing interstate access. As residential development and employment increase within Crozet, Eastern Avenue is needed to link the neighborhoods and mitigate the congestion that is otherwise expected to occur on Route 240 (Crozet Avenue and Three Notch’d Road) and Route 250 (Rockfish Gap Turnpike). This extension is consistent with the Downtown Crozet Master Plan, adopted in 2004. This project also includes pedestrian and bike facilities to provide safe and accessible connectivity for pedestrians and cyclists to be used for commuting and recreational activities between their homes, schools, and other neighborhood destinations.

The Project is located in Albemarle County in the unincorporated town of Crozet. The new alignment will include a bridge over Lickinghole Creek. The Project seeks to construct a connection between Route 250 (Rockfish Gap Turnpike) and Westhall Drive by extending the existing alignment of Eastern Avenue. Construction of this project will provide access which was previously lacking between the Westhall and Brookwood residential areas and Route 250 (Rockfish Gap Turnpike), a key minor arterial for this area. Currently there is no crossing of Lickinghole Creek within Crozet besides Route 240 (Crozet Avenue) and Route 250 (Three Notched Road). As residential developments (i.e., Westlake at Foothill Crossing) are expected to continue north of Lickinghole Creek, the approximate 5.5-mile detour currently required to cross Lickinghole Creek will not remain a viable option. Therefore, the County planned for the extension of Eastern Avenue to provide connectivity from existing and future residential areas to Route 250 (Rockfish Gap Turnpike). As part of a location study for this project, the County identified and analyzed three (3) conceptual alignments for the extension of Eastern Avenue to Route 250 (Rockfish Gap Turnpike). Constraints included wetland impacts, tree clearing, property impacts, and construction cost. The selected alignment corridor for Eastern Avenue Extended extends the existing Eastern Avenue alignment, then follows the existing alignment of Route 1260 (Cory Farm Road) to the intersection with Route 250 (Rockfish Gap Turnpike).

The conceptual designs contained in the RFP Information Package reflect a basic line, grade, typical sections, minimum pavement structures, and potential locations of stormwater management facilities. These elements are considered to be the basic Project configuration. The Proposer is responsible for design in accordance with the Technical Requirements. The PDF copy of the RFP Conceptual Plans shall supersede the electronic drawing files (DGN) contained in the RFP Information Package.

1.1 Project Management

- 1.1.1** The Proposer shall establish and maintain an organization that effectively manages all elements of the Project. This Project management effort will be defined and guided by the Project Development Plans (PDP) as described in the Comprehensive Agreement (Agreement).
- 1.1.2** Project management activities shall include but not limited to scope, schedule, cost, and document management, and will be consistent with the Project Work Breakdown Structure (WBS) developed by the Proposer.

1.2 Project Administration

1.2.1 General Requirements

The Proposer's management approach shall provide all components of an effective and efficient management system, including communication and reporting; documentation of Work; supervision of Work personnel and activities; all equipment, facilities, and materials; environmental protection and mitigation; safety of Work personnel; and any other management elements needed to produce and document a successful quality, safe, efficient, and operable Project.

1.2.2 Submittals

The Proposer shall draft, revise, and finalize submittals to be accurate, complete, and in a form and at a level of detail to enable the County to discharge satisfactorily its review and approval obligations. The Proposer shall refer to draft of the Comprehensive Agreement in regard to the County's rights in terms of the submittal review process.

The Proposer shall provide for the transfer of material project records (i.e., hard copies and electronic copies of all correspondence, meeting minutes, emails, and other external documents), in standard business file format, including but not limited to communications between:

1. Governmental Authorities
 - i. Business and Project Stakeholders
 - ii. Landowners
 - iii. News Media
 - iv. Utilities
 - v. Community Stakeholders

The Proposer shall provide all Design Documentation and Construction Documentation as electronic files sealed by a Professional Engineer as necessary. These documents will be deemed received by the County upon submission of electronic files, inclusive of all required information necessary to perform a complete review. Electronic copy submission packages received after 3:00 p.m. will be deemed received the following business day. The County will notify the Proposer within seven days of submission if the electronic copy submission package is incomplete. These documents shall include, but are not limited to, the following items:

1. Design Calculations and Analysis
2. Mix Designs
3. Reports, Studies, and Investigations
4. Project Schedule
5. Design Public Hearing Documentation
6. Design Documentation for Project Development Plans
7. Detailed design submittal and Approved for Construction (AFC) documents covering individual work packages, construction sketches, shop drawings, and diagrams
8. All changes to the AFC documents, including Notice of Design Changes (NDCs), Field Design Changes (FDCs), and Non-Conformance Reports (NCRs)
9. Soil boring logs, laboratory test results, quality control records and audits, etc.
10. Material communications relating to Design Documentation and Construction Documentation
11. Responses to review comments from the County and other review agencies
12. Change Orders (including all related communications and dispute resolution proceedings)
13. Governmental Approvals
14. Third party approvals

Design submittals shall be submitted in *.pdf format. AFC documents shall include the CADD files in *.dwg OR *.dgn format, *.pdf format, and hard copy. All *.dwg/*.dgn and *.pdf files shall be searchable.

The County may request at any time the CADD *.dwg OR *.dgn files at interim design submittals to facilitate review.

The Proposer shall transfer all electronic document submittals into the County's Project Electronic Document Management System (EDMS) unless otherwise directed by the County. E-mail may be used to notify the County of the availability of the document files.

Whenever the Proposer is obligated to make a submittal pursuant to the Agreement, the Proposer shall include with such submittal the signed cover sheet described below.

1. A cover sheet, signed by the Proposer's Representative, which includes the following certifications:
 - i. The Proposer certifies that [description of submittal] was prepared by professionals having the requisite qualifications, certifications, credentials, skills, and experience needed to prepare the submittal in accordance with the requirements of the Agreement and licensed by the Commonwealth of Virginia as required.
 - ii. The Proposer certifies that it has reviewed the submittal for completeness, the submittal accurately depicts the Work to be undertaken or performed, and the submittal was prepared in accordance with and otherwise complies with:
 - (1) The Agreement
 - (2) The Technical Requirements
 - (3) The approved Quality Management System Plan (QMSP)
 - (4) Applicable Law
 - (5) Governmental Approvals

The Proposer shall include in the Initial Baseline Schedule, and in all other Project Schedules, all proposed major design and construction submittals that will require the County's review and approval.

The Proposer shall submit to the County for its review and approval a schedule for the submission of Design Documentation and Construction Documentation. The purpose of this schedule of submissions is to allow for proper allocation of resources by the County. The schedule of submissions shall be approved by the County prior to the submission of Design Documentation or Construction Documentation to the County by the Proposer.

2. Following the commencement of design Work, the Proposer shall provide monthly updates to the schedule of submissions referenced above in its Monthly Progress Report. More frequent updates may be requested by the County. The Proposer shall reasonably comply with such update requests.
3. Unless otherwise approved by the County, weekly virtual (Microsoft Teams, Zoom, etc.) submittal status meetings will be facilitated by the Proposer and held to review all anticipated submittals, current submittals, and pending re-submittals.
4. The County highly recommends and encourages Technical Work Group (TWG) and Over the Shoulder Review (OTSR) meetings with the Proposer. The purpose of such meetings would be to address Project concerns, technical issues, requests for information (RFIs), and to facilitate the development and advance review of plans.
5. If at any given time the Proposer makes multiple submittals, the Proposer shall indicate to the County the priority assigned to each submittal to foster a timely and coordinated review by the County.
6. Documents that will be reviewed and approved by the County include the AFC Documentation covering individual work packages including interface points used by the Proposer during its design review process, the Design Public Hearing Documentation, other Design Documentation, and all changes to the AFC Plans including NDCs, FDCs, and NCRs.
7. The County may request interim submittals at any time for complex or unusual elements of the Work or for elements where no applicable standards exist. Such interim submittals shall be developed to address the County's specific requests for information and shall be submitted within 21 days from the request by the County.
8. NDCs and FDCs that are required after issuance of the County's approval of the AFC drawings must be submitted to the County for review prior to construction associated with the NDC or FDC. NDC and FDC review/approval shall be given

9. by the County within ten (10) days of submittal to the County. Any basis for disapproval must be submitted to the Proposer in writing by the County.
10. The County's review and approval shall not relieve the Proposer of its obligation to comply with the Agreement.

133 Plans and Working Drawings

1. Proposer shall furnish all plans and drawings showing such details as are necessary to give a comprehensive understanding of the Work specified. Except as otherwise shown on the plans, dimensions shown on the plans are measured in the respective horizontal or vertical planes. Dimensions that are affected by gradients or vertical curvatures shall be adjusted as necessary to accommodate actual field conditions and shall be specifically denoted on the working drawings.
2. Project design shall be prepared in one of the following design software packages; however, plans should be organized and presented similarly to the requirements of the *VDOT CAD Manual* regardless of the Proposer's selected design software:
 - i. Bentley OpenRoads Designer 2023 Release 1
 - ii. AutoCAD Civil 3D 2024

The Proposer shall provide its own software. The Proposer will notify the County of their selected software to be utilized by the design within 2 weeks (14 days) of Notice to Proceed being issued by the County. The Proposer shall be required to submit files at request of the County's Department of Community Development prior to issuance of a Land Disturbance Permit in AutoCAD format as directed by the County in the requested format and version regardless of the Proposer's selected design software.

3. 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*, VDOT's *CADD Manual* (except as modified above) and VDOT's I&IMs and the *VDOT Manual of the Structure and Bridge Division*.
4. The Proposer shall submit all plans in general accordance with VDOT's policies and procedures (Right-of-Way [ROW] and/or Construction submittals, Released for Construction, and As-Builts) in electronic format using the Proposer's selected design software. Files shall be submitted in both native CAD format (OpenRoads Designer DGN/AutoCAD DWG) and Adobe PDF formats, by way of the County's EDMS. The files will use standard VDOT cell libraries, level structures, line types, and naming conventions as described in the most recent version of the *VDOT CADD Manual* and the *VDOT Manual of the Structure and Bridge Division*.
5. The Proposer shall furnish working drawings to the County. The County shall be offered an opportunity to review and provide feedback on all working

drawings whether County acceptance is required or not.

6. Working drawings shall not incorporate any deviations from the Technical Requirements unless the changes are specifically denoted, together with justification, and are approved in writing by the County in accordance with the Agreement.
7. A Professional Engineer licensed in the Commonwealth of Virginia shall certify working drawings for but not limited to falsework supporting a bridge superstructure; concrete structures and pre-stressed concrete members; lighting, signal, and pedestrian poles; sign structures; breakaway support systems; anchor bolts; reinforced concrete pipe; retaining walls; and foundations.
8. The Proposer shall provide an electronic version submitted via the EDMS of working drawings for which the County's review as required in accordance with the Agreement. The County will return reviewed working drawings to the Proposer within twenty-one (21) calendar days. The plans shall be clear and legible, and details shall be drawn to scale.
9. Prior to manufacture of non-standard items, the Proposer shall furnish to the County a certification of the acceptability of the design of such non-standard item, as determined from a review which shall be made on behalf of the Proposer by a Professional Engineer licensed in the Commonwealth of Virginia. Such certification shall cover all design data, supporting calculations, and materials. Non-standard designs previously certified or approved by the County will not require recertification.
10. The County's review of the Proposer's working drawings will relate only to conformance to and compliance with the requirements of the Agreement. Any deviation from the requirements of the Agreement must be specifically described and accompanied by explicit supporting justification. The County's review shall not relieve the Proposer of responsibility for errors and/or omissions in the working drawings.
11. The plans and working drawings shall be appropriately signed and sealed by professional licensure, as applicable.

134 Location of Field Office and Accommodations for County's Staff During the Construction Period

1. The Proposer shall provide office space, equipment, and services consistent with requirements for a Type I Field Office, and shall include office space, equipment, telecommunication services (T1 internet) for County's Independent Assurance / Verification Standards and Testing (IA/VS&T) consultant as stipulated within the Specifications unless specifically modified herein. The field office for County's IA/VS&T Consultant staff shall not be allowed to be co-located with the Proposer (i.e. no shared office space). Further, the field office shall be located

reasonably close to the project site (or as otherwise approved by the County), and the field office shall be accessible for non-four-wheel drive vehicles. The configuration and equipping of the field office shall be coordinated between the Proposer and the County Project Manager prior to selection and opening of the field office. The field office will be operational throughout the duration of the Project construction and shall not be removed until after final Project Acceptance.

2. In addition to the equipment required in the Specifications for the field office for County's IA/VS&T Consultant staff, the Proposer shall provide a minimum 65" flat screen Smart TV. A Smart TV is considered a flat screen television that is equipped with integrated internet connectivity and a built-in operating system with screen casting capability from laptop/tablet.
3. The Proposer will provide either in the Proposer's field office or the field office for the County's IA/VS&T Consultant staff a conference room furnished with table and chairs suitable for up to fifteen (15) attendees to host regular Project meetings. If the conference room is located in the Proposer's field office, the conference room shall include a minimum 65" Smart TV.

135 Electronic Document Management System (EDMS)

1. The Proposer shall establish and maintain protocols for Project-specific needs only to store and record all material documents generated on the Project, including those records required under law. Any information stored on Proposer's EDMS shall be subject to the Freedom of Information Act (FOIA) as governed by the Code of Virginia, unless a timely request for exemption, citing the specific FOIA exemption provision, is received and approved by the County. For purposes of this clause, "timely" shall mean any time prior to receipt of a FOIA request by the County for records that the Proposer claims are exempt.
2. The Proposer shall maintain all project documentation electronically that is accessible to all personnel associated with the Project (to include Proposer's personnel, QC personnel, QA personnel, design personnel, ROW personnel, County personnel, and County's consultants) at all times for the entire duration of the Project. The County's selected EDMS during the design phase of the Project will be through Kimley-Horn's ProjectWise server. The County's selected EDMS during construction for this Project shall be Autodesk Build. The Proposer will be responsible for providing licenses for the County's selected EDMS throughout the duration of the Project to the Proposer's staff and team members. The Proposer's staff with access to the EDMS shall minimally include the Proposer's Project Manager, the Quality Assurance Manager, the QA/QC inspection staff, Superintendent/foreman at the Proposer's discretion, and the Design Manger. The County's Independent Assurance / Verification Standards and Testing staff will set up the EDMS and invite project staff to collaborate. Project personnel may have different read and write privileges as deemed appropriate by the County in consultation with the Proposer. The online

document management filing structure for the Project shall follow the structure as directed by the County. The purpose of the online document management system is for maintaining project documents; it does not replace any submission requirements.

3. Prior to submitting each monthly Application for Payment, the Proposer is responsible for uploading all pertinent project documentation associated with the work performed that month onto the EDMS for this Project. This includes all applicable QC and QA daily work reports, QC and QA test reports. Work packages will not be considered complete until all required QC and QA reports and materials documentation have been provided.
4. Prior to submitting the Final Application for Payment, the Proposer is responsible for uploading all project documentation onto the County's EDMS. Final Payment will not be processed until all applicable documentation has been provided.
5. The Proposer shall provide tablet-based inspection utilizing Autodesk Build on this project for the duration of all document control. Requirements for Autodesk Build use are outlined within 15 SP-AutodeskBuild.pdf included within the RFP Information Package. The Proposer will be responsible for providing licenses for their team and their consultants to the County's selected tablet-based inspection software. Within 30 days of the issuance of Notice to Proceed, the Proposer will attend one (1) meeting with the County and its consultants to review tablet-based inspection requirements, procedures, and a how-to demonstration of project procedures for making submittals, RFIs, etc. The meeting will occur in-person at the County's office or in the Field Office, if operational.

136 Project Meetings

1. Authorized Representatives and other pertinent representatives of the parties shall meet within ten (10) days after the earlier of (1) Limited Notice to Proceed, issued in accordance with the Agreement, or (2) the Financial Close Date, to discuss issues affecting the administration of the Work and to implement the necessary procedures, including those relating to submittals and approvals, and to facilitate the ability of the parties to perform their obligations under the Agreement.
2. Within fourteen (14) days, or other period of time as mutually agreed by the parties, after the satisfaction of the conditions precedent to begin construction as set forth in the Agreement, the parties and their respective representatives shall conduct a pre-construction meeting to discuss the Proposer's planned construction operations. At the pre-construction meeting, the parties shall discuss, among other things, the sequence of the Work; scheduling; constructability issues; coordination with governmental agencies, transit and railroad entities, and utility companies; and maintenance of traffic and quality assurance and quality control procedures.

3. The Proposer shall hold monthly progress meetings with the County. During such meetings, work completed during the prior month, work scheduled and underway during the current month, work to be undertaken during the next month, and issues encountered or anticipated issues shall be reviewed. The Proposer shall collect and report on pertinent information from any Contractors responsible for Work completed during the specified duration and Work scheduled during the upcoming reporting duration. These meetings shall be attended by the Proposer Representative and other personnel as requested by the County, including relevant Contractors. Meetings will occur monthly beginning the month after the first Limited Notice to Proceed is issued and shall continue until Project Completion. The Proposer shall be responsible for preparing, maintaining, and distributing minutes of the meetings to all attendees for review. The meeting minutes shall be provided to the County within 3 days after the monthly progress meeting or such other time frame as approved by the County. The parties occasionally may cancel a monthly progress meeting if they mutually agree that such meeting is not necessary.
4. The Proposer shall hold weekly virtual status meetings with the County. During such meetings, work completed during the prior week, work scheduled and underway during the current week, work to be undertaken during the next week, and issues encountered or anticipated issues shall be reviewed. The Proposer shall collect and report on pertinent information from any Contractors responsible for Work completed during the specified duration and Work scheduled during the upcoming reporting duration. These meetings shall be attended by the Proposer Representative and other personnel as requested by the County, including relevant Designers, Contractors. Meetings will occur weekly beginning the week after the first Limited Notice to Proceed is issued and shall continue until Project Completion. The Proposer shall be responsible for preparing, maintaining, and distributing minutes of the meetings to all attendees for review. The meeting minutes shall be provided to the County within 3 days after the weekly progress meeting or such other time frame as approved by the County. The parties occasionally may cancel a weekly progress meeting if they mutually agree that such meeting is not necessary.
5. The County and Proposer shall agree to other meetings as appropriate.

1.4 Project Development Plans (PDPs)

142 General

1. The Proposer shall provide PDPs that comply with the requirements set forth in Attachment 1.1.
2. PDPs shall not obligate the County to perform any activity unless agreed to in writing by the County.

143 Project Development Plans

1. The Proposer shall produce and maintain a quality control and quality assurance system for the PDPs. This shall include current documentation showing its internal quality reviews and results of compliances, non-compliances, and corrective actions taken.
2. The County may audit and monitor the activities described in the PDPs to assess the Proposer's compliance.
3. All statements and procedures contained in the PDPs shall be of an auditable nature.
4. The PDPs and updates shall be made available to the County in electronic format.

144 Project Development Plan Updates

1. The Proposer shall update and improve the effectiveness of its PDPs and have mechanisms in place to monitor progress and identify opportunities for improvement.
2. A PDP or procedure shall be updated pursuant to Attachment 1.1, if such PDP or procedure:
 - i. Does not adequately address the matters it is intended to address
 - ii. Does not conform or is otherwise necessary to comply with the Agreement
 - iii. Has to be changed because of an audit
 - iv. No longer represents current or appropriate practice
 - v. Is required by the Agreement to be updated.

145 Submission Timetable

The PDPs shall be submitted in accordance with Attachment 1.1 for County review and approval.

1.5 Schedules

152 Project Schedules

1. The purpose, format, and content of the Project Schedule shall be as follows:

Terms not defined herein or in the Agreement shall have the same meanings ascribed to them in the VDOT Post-Award Scheduling Guide.

The purpose of the Project Schedule is to ensure that adequate planning, scheduling, and resource allocations occur to provide a reasonable and executable work plan, cash flow projections, and continuous monitoring and reporting for Work performed or remaining. The Baseline Schedule and the monthly updates to the Project Schedule shall be used for coordinating the Work, monitoring the progress of Work performed, identifying Work to be performed, evaluating changes, and as a tool for measuring progress.

Project Schedules will be reviewed in accordance with the VDOT Post-Award Scheduling Guide and the AACE Recommended Practice No. 53R-06 as appropriate. Acceptance by the County of any Project Schedule will not relieve the Proposer from its responsibility to complete all Work within the Project Schedule. In addition, the County's acceptance of any Project Schedule creates neither a warranty, expressed or implied, nor an acknowledgment of the reasonableness of the activities, logic, durations, or cost loading of the Proposer's Project Schedule. Furthermore, acceptance of the Project Schedule will not relieve the Proposer from complying with all the requirements of the Agreement, including, without limitation, requirements, sequences, constraints, and obligations.

Format for the project schedules will be acceptable in either the most current version of Microsoft Project or Primavera P6; however, the County would prefer the latter software consistent with the referenced VDOT Post-Award Scheduling Guide.

2. As general requirements of the Project Schedule, the Proposer shall conform their schedule format, contents, settings, etc. to the current version of VDOT's scheduling special provision number SP108-000120-00 entitled CPM PROGRESS SCHEDULE FOR CATEGORY III PROJECTS in addition to the following:
 - i. Ensure that the actual number of activities in the schedule is sufficient to assure adequate planning of the Work and to permit monitoring and evaluation of progress and perform the analysis of alleged time impacts
 - ii. Ensure that design activities identify submissions.
 - iii. Divide all Work prior to the Project Completion Date into activities with appropriate logic ties to show the Proposer's overall approach to sequencing, including logical relationships between activities reflecting the Proposer's actual intended sequence of Work; and logically tie all activities to avoid open ends
 - iv. Show the Project milestones, including commencement of design Work; the anticipated issuance of Limited Notice to Proceed, Intermediate Milestone dates; Service Commencement, and Project Completion Dates

- v. Show phasing of the Work as detailed in the design plans, subcontractor work, procurement, fabrication, delivery, installation, testing of materials and equipment, commissioning of systems, and any long-lead time orders for major or significant materials and equipment
 - vi. Reflect the required coordination with other utility owners, governmental agencies, engineers, architects, contractors, and suppliers
 - vii. Identify regulatory approvals and County inspections required and the dates by which such approvals and inspections are necessary
 - viii. Be fully compliant with the Agreement
 - ix. Conform to the Work Restrictions and Maintenance of Traffic requirements
 - x. Reflect the ROW Acquisition and Relocation Plan
 - xi. Reflect the Utilities Plan
3. Float available in the Project Schedule, at any time, shall not be considered for the exclusive use of either the County or the Proposer. During the course of the Work, any float generated is not for the sole use of the party generating the float; rather it is a shared commodity to be reasonably used by either party. A schedule showing work completing in advance of the Project Completion Date, and accepted by the County, will be considered to have Project float. Project float will be a resource available to both the County and the Proposer. No time extensions will be granted unless a Delay Event occurs that impacts the Project's Critical Path, consumes all available float or contingency time, and extends the work beyond the Project Completion Date as defined by the Agreement. The Project Schedule shall not use float suppression techniques.
 4. If the parties cannot agree to a Schedule, either party may refer the disagreement to the dispute resolution procedures set forth in the Agreement.
 5. All schedule reports shall be available to the County for inspection and audit. Additional reports may be required as future needs dictate.

153 Initial Baseline Schedule

1. The Initial Baseline Schedule is the Proposer's conceptual plan for the design and construction of the Construction Project. This schedule shall be used to monitor performance of the Work until the Baseline Schedule is approved by the County.
2. The Initial Baseline Schedule shall be submitted within thirty (30) days of the Agreement Date.

3. The Initial Baseline Schedule, which should outline the Proposer's proposed plan to accomplish the Work, shall be in the same general format as the Baseline Schedule, as described in the Technical Requirements. The Initial Baseline Schedule shall include at least the following:
 - i. Schedule activities representing all Work to the WBS Level.
 - ii. The Initial Baseline Schedule does not need to be resource loaded.

154 Baseline Schedule

1. Within one hundred twenty (120) days of the Agreement Date, the Proposer shall submit to the County for its review and approval a proposed Baseline Schedule, which shall include the Proposer's detailed plan for design and construction of the Project. The Proposer shall develop its proposed Baseline Schedule from the Initial Baseline Schedule. The Proposer shall submit an electronic version (PDF) of its proposed Baseline Schedule, along with a native version of the proposed Baseline Schedule created in the Primavera proprietary exchange format (*.xer).
2. Within twenty-one (21) days of the County's receipt of the proposed Baseline Schedule, the County will notify the Proposer in writing of its acceptance or rejection of the proposed Baseline Schedule, and of any comments it has or amendments it wishes the Proposer to make. The Proposer shall give due consideration to the County's suggested amendments or comments and, to the extent it deems appropriate, revise the proposed Baseline Schedule and re-submit the same to the County for its review in accordance with this Clause B for the County's acceptance. Within fourteen (14) days of the County's receipt of the re-submitted proposed Baseline Schedule, the County will notify the Proposer in writing of its acceptance or rejection. Upon acceptance by the County, the proposed Baseline Schedule will become the Baseline Schedule.

If the parties cannot agree to a mutually acceptable Baseline Schedule, either party may refer the disagreement to the dispute resolution procedures set forth in the Agreement. Until such time as the dispute is resolved, the Initial Baseline Schedule will be used for the design and construction of the Project. The Baseline Schedule shall include an organized WBS, the development of which is based on a deliverable-oriented methodology that captures all the Project activities. The WBS shall allow schedule summarization at a minimum of four hierarchical WBS levels, such as: Project areas (Level 1), WBS elements (Level 2), work packages and deliverables (Level 3), and the detail control level (Level 4) to which the individual schedule activities are assigned their WBS code.

3. The Baseline Schedule shall include all major activities of the Work in sufficient detail to enable the Proposer and County to monitor and evaluate design and construction progress from the Financial Close Date until Project Completion.

4. The Baseline Schedule shall include separate activities for major submittals proposed by the Proposer, together with appropriate activities for the County's review or approval, provided that such review and approval times by the County will be no less than the time provided for such reviews in the Agreement.
5. The Work shall be broken down in sufficient details to identify the phase, stage, feature, type of Work, deliverable, and specific location in which the Work occurs, including as applicable:
 - i. Project milestones
 - ii. Administrative activities such as key submittals, notifications, and review by the County, the Federal Highway Administration (FHWA), and other regulatory agencies
 - iii. Design activities showing all Work required to complete each stage of design and deliverable
 - iv. Public involvement activities
 - v. Environmental and permitting activities
 - vi. ROW acquisition activities showing all parcels
 - vii. Utility relocations and adjustments, including all specific types and locations
 - viii. Procurement, fabrication, and delivery activities of materials
 - ix. Construction start-up activities such as mobilization, staging areas, surveying, clearing and grubbing, construction access, etc.
 - x. Maintenance of Traffic (MOT) activities
 - xi. Construction activities broken down by phase stage, feature, type of work, specific location, etc. as applicable
 - xii. Other necessary miscellaneous activities that consume time, for example, installation and removal of temporary systems or structures such as shoring, load tests, curing, demolition, testing and acceptance periods including all activities necessary for the complete testing and inspection of all Work as necessary to achieve proper activation and use of the Work, punch list, clean-up, demobilization, etc.

1.6 Standards and Specifications

1.6.1 General Requirements

1. The Work shall conform to the Standards and Specifications set forth in the Agreement and Attachment 1.2. Where the Proposer's design requires design methods or construction procedures not covered by the attached list of Standards and Specifications, the Proposer shall obtain the County's approval before using such methods or procedures. The 21-day deemed approval clause shall not apply to this provision. The County will not unreasonably withhold or delay approval. The Proposer's obligations to conform the Work to the requirements set forth in manuals described in the Agreement and Attachment 1.2 will be satisfied if the Work meets the engineering objectives set forth in such manuals.
2. The Proposer shall derive the functional classifications, design speeds, special load requirements, design criteria, and other applicable design issues using the Technical Requirements, and the Standards and Specifications set forth in Attachment 1.2.

1.6.2 Interpretation of Standards and Specifications

1. Virginia Department of Transportation (VDOT) Standards for Performance are interpreted using the following guidelines: The VDOT Road and Bridge Standards and the VDOT Road and Bridge Specifications; supplemental specifications, special provisions, and special provision copied notes issued by the VDOT; and the Standards and Specifications and supplementary reference documents listed in Attachment 1.2 to these Technical Requirements. A requirement occurring in one shall be as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete Project. VDOT standards shall take precedence over AASHTO standards unless otherwise noted. In case of a discrepancy, the following order of priority will apply, with the highest governing item appearing first and the least governing item appearing last:
 - i. Technical Requirement stated in this Volume II
 - ii. Special provision copied notes issued by VDOT
 - iii. Special provisions issued by the VDOT
 - iv. Supplemental specifications issued by VDOT
 - v. Standards and Specifications listed in Attachment 1.2
 - vi. Reference documents listed in Attachment 1.2

2. Each party shall promptly notify the other party if it discovers an obvious and plan error or omission in the text of the Technical Requirements attributable to a word processing, administrative, or similar oversight. The parties will then coordinate to make such corrections as are necessary to restore the intent of the language.
3. The standards, special provisions, and reference guidelines applicable for the Construction Period shall be the version of those documents as listed in Attachment 1.2, including all supplements, errata, revisions, and interims.
4. Following the Work period, all subsequent design and construction shall meet the standards current at the time the Work is performed. It is the responsibility of the Proposer to ensure that all relevant standards and specifications have been applied.

1.7 Right-of-Way (ROW)

1.7.1 General Requirements

1. General: Terms not defined herein or in the Agreement shall have the same meanings ascribed to them in the *VDOT Right-Of-Way Manual of Instructions*.

The procedures and requirements related to ROW for this Project shall be in accordance with the *Right-of-Way Manual of Instructions, 3rd Edition, FHWA Update January 1, 2016, Chapter 10 (Special Projects Section)*, including Attachment 2 to Chapter 10 (ROW Contract Provisions for Design Build Contracts).

The Proposer shall coordinate and conduct a ROW Kickoff meeting with County personnel within ninety (90) days from the Date of Notice to Proceed. The attendees shall include: the County Project Manager, County staff, County consultants, the Design-Build Project Manager, the Design Manager, and the Proposer's ROW team members.

All ROW acquisition costs (compensation paid to landowners for ROW, temporary easement, permanent easement, damages, and improvements) will be paid by the Proposer on behalf of the County and shall be included in the Proposer's Price Proposal. Any and all proposed construction features offered in conjunction with the Proposer obtaining an administrative settlement with a landowner must be presented and approved by the County as to concept prior to settlement with the property owner.

The Proposer's concept design shall be wholly contained within the limits of the Roadway Inclusion Zone shown on the RFP Conceptual Plans. Deviations from the proposed ROW limits and easements shown on the RFP Conceptual Plans will be subject to County approval; however, the Proposer

may adjust/change/alter the provided ROW and easement limits to fit the design concept, and the requirements of the RFP provided the limits fall wholly within the limits of the Roadway Inclusion Zone shown on the RFP Conceptual Plans.

2. The Proposer's final design shall also be contained within the ROW limits shown on the Proposer's Technical Concept Plans, except for temporary construction, permanent drainage, and utility easements (other than permanent drainage easements for stormwater management facilities) and where minor adjustments are required during the final design process, and must be approved by the County. If the Proposer proposes significant changes that exceed the ROW limits shown on the Proposer's Technical Concept Plans, then these changes shall be subject to County approval. The Proposer shall be responsible for any time or cost impacts and any environmental studies and/or re-evaluation associated with Proposer's design changes that extend beyond the ROW limits reflected in the RFP Conceptual Plans and approved by the County.
3. The Proposer, acting as an agent on behalf of the County, shall provide all ROW acquisition services for the Project's acquisition of fee ROW and permanent, temporary, and utility easements. ROW acquisition services shall include attorney-certified title reports, appraisals, appraisal reviews, negotiations, relocation assistance, and advisory services and parcel closings, to include an attorney's final certification of title. The Proposer's lead Right of Way Acquisition Consultant shall be a VDOT Pre-qualified Right of Way Acquisition Consultants listed on VDOT's website All Appraisers and Review Appraisers on the Proposer's ROW team must be on the VDOT Prequalified Appraisers and Review Appraisers list on VDOT's website.
4. The ROW Consultant shall provide written updates to the County on a weekly basis and document all interactions with landowners within twenty-four (24) hours of the conversation.
5. The County shall approve appraisals, just compensation, relocation, and benefits prior to any offers. A County representative will be available to make timely decisions concerning the review and approval of just compensation, approval of administrative settlements and approval of closing or condemnation packages on behalf of the County. The County Representative is committed to issuing decisions on approval requests within twenty-one (21) days. This commitment is based on the plan providing a reasonable and orderly workflow and the work being provided to the County representative as complete. Submission of documents requiring County approval shall contain the necessary language and certifications as shown on the examples provided in the Appendix to Chapter 10, "Special Projects," of the *Right-of-Way Manual*.

6. In accordance with the Agreement, the Proposer shall not commence construction of the Project Assets until the County has delivered the Construction Notice to Proceed following the Proposer has satisfied the conditions, including a Proposer certification that all property rights necessary for the commencement of construction have been obtained.
7. The Proposer shall certify to the County prior to commencing ROW Acquisition, that all total and partial takes have been identified. Any revisions to the Project's acquisition of fee ROW or permanent, temporary, and utility easements after the certification shall be submitted to the County. Upon approval of the Proposer's Certification, the County will issue a Notice to Commence Acquisition to the Proposer.
8. The Proposer shall acquire property in accordance with all federal and state laws and regulations, including but not limited to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (the Uniform Act) and Titles 25.1 and 33.2 of the 1950 Code of Virginia, as amended.
9. The acquisition of property shall follow the guidelines as established by VDOT and other state and federal guidelines that are required and the *VDOT Right-of-Way Manual of Instructions* and the *VDOT Utility Manual of Instructions*, as well as IIM-LD-243 and Chapter 12 of the *VDOT Survey Manual*. All conveyance documents for the acquisition of any property interest shall be accompanied by properly marked plan sheets and profile sheets.

Payment documentation is to be prepared and submitted to the County with the Acquisition Report (RW-24). The Proposer shall make payments to property owners for negotiated settlements, relocation benefits, and payments to be deposited with the court.

The Proposer shall prepare, obtain execution of, and record documents conveying title to such properties to the County and deliver all executed and recorded general warranty deeds to the County. Prior to the recordation of any instrument, the County shall review and approve the document. For all property purchased in conjunction with the Project, title will be acquired in fee simple except that the County may, in its sole discretion, direct the acquisition of a ROW easement with respect to any portion of the ROW and shall be conveyed to the "Albemarle County, Grantee" by a County-approved general warranty deed, free and clear of all liens and encumbrances, except encumbrances expressly permitted by the County in writing in advance of deed recordation. All easements, except for private utility company easements shall be acquired in the name of "Albemarle County, Grantee." Private utility company easements will be acquired in the name of each utility company when the private utility company has prior recorded easements.

10. The Proposer may at their own risk employ the use of Rights of Entry while negotiations are on-going with a property owner.

The Proposer will be responsible for all contacts with landowners for rights of way or construction items.

The Proposer shall maintain access at all times to properties during construction.

The Proposer 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 Proposer shall notify the County within three (3) calendar days. The Proposer shall not proceed with acquiring such property until they receive written notification from The County.

During the acquisition process and for a period of three years from either (1) the date each owner of a property receives the final payment or (2) and until The County has indefeasible title to the property, all Project documents and records not previously delivered to the County, 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 the County for inspection and/or audit.

Prior to Project completion the Proposer shall provide and set VDOT RW-2 ROW monuments with the Project limits.

The Proposer must notify the County of all encroachments (temporary or permanent) within the ROW prior to final acceptance.

1.7.2 Eminent Domain

The County will make the determination in each case as to whether settlement is appropriate or whether the filing of an eminent domain action is necessary, taking into consideration the recommendations of the Proposer. When the County determines that requesting an eminent domain action by the Board of Supervisors is necessary, the County will notify the impacted property owner(s) and advertise an eminent domain public hearing in local publications. If the County Board of Supervisors authorizes the exercise of eminent domain for the required acquisition of ROW and/ or easements, the Proposer will provide the money as appropriate and file the certificate. For the purpose of scheduling, the Proposer shall assume that it will take ninety (90) calendar days from when the County determines that requesting an eminent domain action by the Board of Supervisors is necessary until

the certificate is filed.

When the County determines that it is appropriate, the Proposer shall be responsible for continuing further negotiations for a maximum of ninety (90) days after a certificate is filed, in order to reach settlement after the filing of certificate. After that time the case may be assigned to an outside attorney appointed by the County Attorney's Office. When requested, the Proposer shall provide the necessary staff and resources to work with the County and its attorney throughout the entire 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 the County and the appropriate court. The Proposer will provide updated appraisals (i.e., appraisal reports effective as of the date of taking) and expert testimony supporting proceedings upon request by the County.

1.8 Utilities

1.8.1 General Requirements

1. This is a County sanctioned project, and the Proposer shall enjoy all the benefits and responsibilities of the County as it pertains to prior rights, statutory rights, or any other right relating to utility relocations, subject to the County's ability to assign those rights.
2. The Proposer shall submit for review and approval by the County a Utility Plan that details the schedule and proposed activities of the Proposer and the utility owners during the Construction Period to the level of detail and extent to which such information is known at the time of submission. Such information will be updated periodically as additional information becomes available during later stages of design. The Utility Plan shall include, but is not limited to, assertions to the following:
 - i. Durations and schedules for planned utility relocations have been coordinated with utility owners.
 - ii. Durations for utility relocations by utility owners are adequate for the type and scope of services being provided.
3. The coordination, design, and relocation of all utilities shall comply with these Technical Requirements and the standards and specifications set forth in Attachment 1.2. Additional Work required because of changes in utility owners' requirements shall be at the Proposer's risk. It is the Proposer's responsibility to verify whether other utility owners exist within the Project limits and coordinate with them.
4. The Proposer shall be responsible for coordinating the Project construction with all utilities that may be affected (including the VDOT communications, power cables, and conduits). The Proposer shall be responsible for coordinating the work of its Contractors, subcontractors, and the various

utilities. The resolution of any conflicts between utility owners and construction of the Project shall be the responsibility of the Proposer. No additional compensation or time will be granted for any delays, inconveniences, or damage sustained by the Proposer or its subcontractors because of interference from utilities or the operation of relocating utilities.

5. If the Proposer desires the temporary or permanent adjustment of utilities for its own benefit, it shall conduct all negotiations with the utility owners and pay all costs in connection with the adjustment.
6. At a minimum, the Proposer shall be responsible for utility designations, utility locates (test holes), conflict evaluations, cost responsibility determinations, utility relocation designs, utility relocations and adjustments, utility reimbursement, determination of existing utility easements and the inclusion of such easements on plans, replacement land rights acquisition, and utility coordination required for the Project. The Proposer is responsible for coordinating all necessary utility relocations and adjustments. All efforts and cost necessary for utility designations, utility locates (test holes), conflict evaluations, cost responsibility determination, utility relocation and utility bridge attachment designs, utility relocations and adjustments, utility reimbursements, replacement land rights acquisition, and utility coordination shall be included in the Proposer's cost.
7. All costs for utility relocations, excluding betterments, shall be included in the Proposer's price proposal. Utility betterments shall not be included in the price proposal but shall be reimbursed to the Proposer through agreement with the requesting utility owner. Betterments must be requested by and approved by the affected utility owner and must meet Buy America requirements.
8. The compensation paid to landowners for replacement land rights shall be included in the Proposer's cost in accordance with the Agreement.
9. The Proposer shall submit a Utilities Plan for the County to review and approve in accordance with the Agreement. The Proposer shall also submit a plan view of the initial utility designation survey. The utilities plan view shall be clear and legible, and details shall be drawn to scale. The Proposer shall develop and maintain a utility tracking report as part of the Utilities Plan.
10. The Proposer shall initiate early coordination with all utilities located within the Project limits. The Proposer shall identify and acquire any replacement utility easements or required ROW needs of all utilities necessary for relocation because of conflicts with the Project. The Proposer shall coordinate with the utility owners to obtain temporary construction easements or agreements.

11. The Proposer shall provide all utilities with roadway and bridge 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 Proposer's design plan for preparing relocation plans and estimates. If a party other than the utility prepares relocation plans, the plans shall include a concurrence box where the utility signs and accepts the relocation plans as shown.
12. The Proposer shall coordinate and conduct a preliminary review meeting with all affected utilities to assess and explain the impact of the Project.
13. The Proposer shall schedule and conduct a Utility Field Inspection Meeting in accordance with the procedures set forth in the VDOT's *Utilities Manual*. The Proposer will provide meeting summary for each utility field inspection meeting.
14. The Proposer shall verify the prior rights of each utility's facilities if claimed by a utility owner. If a dispute occurs over prior rights with a utility, the Proposer shall be responsible for resolving the dispute. The Proposer shall prepare and submit to the County a preliminary utility status report within sixty (60) days of issuance of Limited Notice to Proceed that includes a listing of all known 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 Proposer shall obtain the following from each utility that is located within the Project limits:
 - i. Relocation plans, including a letter of "no cost" where the utility does not have a compensable right
 - ii. Utility agreements, including cost estimate and relocation plans where the utility has a compensable right
 - iii. Utility easement forms to be executed by the landowner, if necessary
 - iv. Letters of "no conflict" where the utility's facilities will not be impacted by the Project
 - v. Bridge attachment agreements between the VDOT and the utility owner, if necessary
15. The Proposer will use a two-party agreement, similar to the Master Utility Agreement (MUA) used by the VDOT (provided for in the VDOT's *Utility Manual*), to establish the general framework for addressing the utility issues within the Project affecting a utility owner. The two-party agreement

between the Proposer and the utility company will set forth the terms and conditions under which the utility work will be performed and will adhere to the VDOT's *Utility Manual*. Included in the two-party agreement will be the statement (with reference to the Agreement) that this work is being performed as a County project. Preparing all agreements relative to the utility relocation is to be between the Proposer and the utility. This includes the agreements for authorization to relocate facilities as well as any reimbursement terms and agreements.

16. The Proposer shall review all relocation plans to ensure that relocations comply with the *VDOT Utilities Manual* and the VDOT's Land Use Permit Regulations. The Proposer shall also ensure that no conflicts exist with the proposed roadway improvements, and that no conflicts exist between each of the utility's relocation plans. The Proposer shall prepare and submit to the County all relocation plans. The Proposer is expected to assemble the information included in the relocation plans in a final and complete format and in such a manner that the County may approve the submittals with minimal review. The Proposer is expected to meet with the County 45 days prior to the first utility submittal to gain a full understanding of what is required with each submittal. The Proposer shall receive written approvals from the County prior to authorizing utilities to commence relocation construction. The utilities shall not begin their relocation work until authorized by the Proposer. Each relocation plan submitted must be accompanied by a certification from the Proposer stating that the proposed relocation will not conflict with the proposed roadway improvement and will not conflict with another utility's relocation plan.
17. The County will provide reasonable assistance in negotiations with utility owners and will provide available documents concerning prior rights in a timely manner as requested by the Proposer, but the County shall incur no liability in providing such reasonable assistance and shall not be required to initiate or participate in any legal action other than as a witness or to produce documents.
18. The Proposer shall design the Project to avoid conflicts with utilities and minimize impacts where conflicts cannot be avoided. The Proposer shall be responsible for ensuring that utility service interruptions are minimized.
19. The utility attachments on bridges shall not be permitted unless approved by the County.
20. Where possible, utility handholes/manholes should be located outside of any pedestrian areas (sidewalks, paths, etc.). Where handholes/manholes are located within a sidewalk or shared use path, the manhole covers must be ADA compliant.

21. The Proposer shall ensure the utility owners submit as-built drawings and Land Use Permit applications upon completion of its relocation and (or) adjustments.
22. The Proposer shall be responsible for ensuring the appropriate abandonment or removal of all abandoned utilities within the Project ROW.
23. At the time that the Proposer notifies the County that the Proposer deems the Project to have reached Project Completion, the Proposer shall certify to the County 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 Proposer.
24. The Proposer shall accurately show the final location of all utilities on the as- built drawings for the Project. The Proposer will ensure the utility companies submit as-built drawings upon completion of their relocation or adjustments. The Proposer shall be responsible for closing all utility permits and resolving all utility conflicts prior to Project Completion.

1.9 Maintenance of Traffic and Work Restrictions

191 General Requirements

MOT development shall be consistent with the Agreement, including these Technical Requirements.

The MOT engineer or an approved designee shall be continuously available during construction until Project Completion and elimination of all construction traffic control.

All MOT plans and documents shall have a valid digital Professional Engineering stamp held by the MOT engineer.

All Temporary Traffic Controls shall be shown on AFC Plans.

1. The Proposer shall be responsible for a Maintenance of Traffic Plan (MOT) in accordance with Instructional and Information Memorandum IIM-LD-241 (Work Zone Safety and Mobility) and the current edition of VDOT's Work Area Protection Manual, which shall include but not be limited to the following:
 - i. The Proposer's MOT plans development shall be consistent with the Agreement, including these Technical Requirements.
 - ii. The Proposer shall comply with pertinent requirements for maintenance of traffic for the Work. The Proposer is responsible

for the safety of the work zone. The Proposer shall appoint a single point of contact to address MOT and safety requirements for the work zone.

- iii. The Proposer shall conduct all work necessary to provide safe and efficient MOT during construction, including provisions for the movement of people, goods, and services through and around the Project while minimizing impacts to pedestrians, bicyclists, local residents, businesses, and commuters.
- iv. The Proposer shall coordinate activities including but not limited to communications, public outreach, and stakeholder engagement; lane closures; and MOT and Traffic Control Plan (TCP) implementation.
- v. The Proposer shall maintain two (2) lanes of traffic (one in each direction) on the existing Eastern Avenue, Cory Farms Road, and Westhall Drive on weekdays EXCEPT for between 9AM and 3:30 PM.
- vi. The Proposer shall maintain all existing lanes of traffic on the existing Rockfish Gap Turnpike (Route 250) weekdays and on weekends EXCEPT for between 9AM and 3:30 PM.

The Proposer shall maintain traffic consistent with the agreed upon TMP.

The Proposer shall conduct daily and weekly MOT inspection to ensure all traffic devices and traffic patterns are in compliance with the VWAPM and MUTCD standards. A weekly MUTCD report shall be provided to the County and include the following:

- (1) Date discrepancy was identified
 - (2) Description of discrepancy
 - (3) Corrective action required
 - (4) Date corrective action should be taken
 - (5) Date corrective action was completed
- 2. During any suspension of Work, the Proposer shall temporarily open to traffic such portions of the Project and temporary roadways as may be agreed upon by the Proposer and County.
 - 3. Unless a Design Exception or Design Waiver is granted, the geometric design for temporary roadways and temporary traffic control shall be

designed, at a minimum, to the existing posted speed limit.

4. Certified flaggers shall be provided in sufficient number and locations as necessary for control and protection of vehicular and pedestrian traffic in accordance with the requirements of the VWAPM. Flaggers shall be able to communicate to the traveling public in English while performing the job duty as a flagger at the flagger station. Flaggers shall use sign paddles to regulate traffic in accordance with the requirements of the VWAPM. Flagger certification cards shall be carried by flaggers while performing flagging duties. Flaggers found not to be in possession of their certification card shall be removed from the flagging site and operations requiring flagging will be suspended by the County. Further, flaggers performing duties improperly will have their certifications revoked.
5. Connections with roads and public and private entrances shall be kept in a reasonably smooth condition at all times. If an existing private entrance or active Connection is paved with asphalt (i.e. open to traffic), Stabilization with asphalt surfacing material shall be applied to connections and entrances prior to the end of the working shift the existing asphalt surface was removed.
6. The Proposer shall schedule construction operations so that approved continuous access is provided for all roads, sidewalks, shared use paths, and properties. Connections or entrances shall not be disturbed by the Proposer until necessary. Once connections or entrances have been disturbed, they shall be maintained and completed as follows:
 7. Connections that had an original paved surface shall be brought to a grade that will smoothly and safely accommodate vehicular traffic through the intersection, using pavement. Connections that had an original unpaved surface shall be brought to a grade that will smoothly and safely accommodate vehicular traffic through the intersection, using either the required material or a temporary aggregate stabilization course that shall be placed as soon as practicable after connections are disturbed.
8. Access and egress connections shall have all lanes open during construction unless otherwise agreed with the County. Other entrances shall be graded concurrently with the roadway with which they intersect. Once an entrance has been disturbed, it shall be completed as soon as is practicable, including placing the required base and surface course or stabilization. If the entrance must be constructed in stages, such as when there is a substantial change in the elevation of the roadway with which it intersects, the surface shall be covered with a temporary aggregate stabilization course or other suitable salvaged material until the entrance can be completed and the required base and surface or stabilization course can be placed.

9. When the surface is to be widened on both sides of the existing pavement, construction operations involving grading or paving shall not be conducted simultaneously on sections directly opposite each other. The surface of pavement shall be kept free from soil and other materials that might be hazardous to traffic. Prior to opening of new pavement to traffic, shoulders shall be roughly dressed for three feet from the edge of the paved surface.
10. Where the Proposer places obstructions such as suction or discharge pipes, pump hoses, steel plates, or any other obstruction that must be crossed by vehicular traffic, they shall be bridged in accordance with plans submitted by the Proposer and approved by the County. Traffic shall be protected by the display of warning devices both day and night. If operations or obstructions placed by the Proposer damage an existing travelled roadway, the Proposer shall cease operations and repair damages.
11. If the Proposer fails to remedy unsatisfactory maintenance not complying with these Technical Requirements after receipt of a written notice by the County, the County may proceed with adequate forces, equipment, and material to maintain the project, without interference from the Proposer. The cost of the maintenance, plus 25 percent for supervisory and administrative personnel (including fully burdened wages plus overhead), will be paid by the Proposer.

192 Allowable Work Hours

1. The normal work hours for the Proposer's construction activities shall be 7AM to 7PM Monday through Saturday. Work shall not be allowed to occur on Sundays unless otherwise approved by the County in writing. Holiday work restrictions shall be as specified in the Specifications. When the Proposer desires to perform work outside of the normal work hours, the Proposer shall request The County's permission at least 48 hours in advance of the time when the Proposer proposes to perform the Work. The County may refuse the Proposer's request to work outside of the normal working hours for any reason. The County reserves the right to require the Proposer to work outside of the normal working hours in the interest of public safety or convenience. No claim for additional compensation shall be made by the Proposer when such occasions occur.

193 Temporary Lane Closures

Shoulder closures that do not impact travel/turn lanes may be permitted outside of allowable lane closure hours. Full closures and detours of roadways within and affected by the Project will not be allowed. Slow rolls in accordance with the Virginia Work Area Protection Manual may be allowed at the discretion of the County during the allowable lane closure hours.

Lane, shoulder, or road closures shall be detailed in the Proposer’s Transportation Management Plan. Anticipated and proposed temporary lane and/or shoulder closures shall be reviewed and approved by The County and VDOT. The Proposer shall restore all lanes of traffic per the times specified in this section. Restoration of traffic shall mean the completion of all construction work, the removal of all traffic control devices, signs, workers, materials, and equipment from the roadway.

Lane closures outside of the allowable lane closure hours below is not permitted unless requested in writing and approved by the County.

1. Lane and Shoulder Closures

To facilitate construction and minimize inconvenience to the public, the Proposer is advised of, and shall comply with, the closure limitations listed in below.

2. The Proposer shall submit all lane and/or shoulder closure requests to the VDOT Area Construction Engineer (ACE) two weeks in advance of any scheduled work plans and planned delays; stating the location, purpose, date, time, and duration of the closure. The Proposer shall confirm with the VDOT ACE at least twenty-four (24) hours before any scheduled lane and/or shoulder closure and shall include a written reiteration of the proposed tasks and a listing of materials, labor, and equipment to be utilized in order for the VDOT Traffic Operations Center (TOC) to post the information on the VDOT website and VA511 system.
3. The lane closure approval and coordination process shall conform to the requirements of the Agreement.

**Existing Eastern Avenue, Westhall Drive,
 and, Cory Farms Road**

Day	Allowable Lane Closure Hours
Monday Through Saturday	9:00 AM to 3:30 PM

Rockfish Gap Turnpike (Route 250)

Day	Allowable Lane Closure Hours
Monday Through Saturday	8:00 PM to 5:00 AM (Next Day)

These allowable lane closure hours shall be applicable to both stationary and mobile lane closures. The County will consider changes to the allowable lane

closure hours only if the Proposer can demonstrate why the proposed work cannot be completed within the contract allowable lane closure hours. All requests shall include an assessment of the work zone traffic impacts using a sketch planning traffic analysis tool and/or an operational level traffic analysis software program as appropriate for approval by the County at least thirty (30) days prior to the operation impacting the lanes. The Proposer's Technical and Price Proposals shall be developed to meet the required lane, shoulder, or road closure restrictions specified in this section. Any deviations from these allowable lane closures may render a Proposer's Proposal non-responsive.

If the Proposer is unable to remove the lane and/or shoulder closure by the stipulated time the Proposer will not be allowed further lane closures until the reasons for the failure are evaluated and the Proposer can provide assurance that the causes have been corrected. A formal submission as to the reasons for the failure to restore traffic lanes within the contract lane closure restrictions and the proposed corrective measures is to be provided to the County Project Manager within two (2) days of the occurrence. County and VDOT will respond to the adequacy of the submission within two (2) working days of receipt. No consideration for extension of time and no additional compensation will be granted for these days.

The County reserves the right to monitor traffic conditions impacted by the work and to make additional restrictions as may be necessary or as emergency situations dictate. Additional restrictions for other holidays or special local events may be necessary, however, in these situations the County will endeavor to inform the Proposer at the earliest and in no case less than forty-eight (48) hours prior to the event.

194 Construction Noise

1. The Proposer is responsible for remaining in compliance with Albemarle County Code Sec. 4.18. – Noise ordinance.

195 Law Enforcement Utilization

1. It is understood by all parties that the Proposer will work with and comply with the direction of the County to determine the use of law enforcement during temporary traffic control operations involving lane closures or rolling lane closures, and any other operation as covered in Appendix C of the *Virginia Work Area Protection Manual*.
2. Law enforcement shall not be used in lieu of flag persons.

1.10 Third Parties and Permitting

1.10.1 Permitting

1. The Proposer shall coordinate in its dealings with Governmental Authorities and other entities having interests in the Project, with assistance from the County. All government and other entity approvals applicable to design and construction Work will be the responsibility of the Proposer. The Proposer shall provide copies of all permits and permit modifications to the County upon receipt.
2. The Proposer shall be responsible for all costs associated with compliance with any ordinance and law or any violations of Law attributed to the activities of the Proposer in accordance with the Agreement.

1.10.2 Third Parties

1. If any portion of the Project is located within the limits of a municipality, military installation, or other federally owned property, the Proposer shall cooperate with the appropriate officials and agents in the prosecution of the Work to the same extent as with the County.
2. The Proposer shall not impede the access or progress of such work by other contractors, but shall cooperate and coordinate with other contractors for the timely completion of all construction activities. This shall include attendance at coordination meetings deemed necessary or advantageous by the County or the Contractor.

The Proposer and/or separate contractor shall assume all liability, financial or otherwise, in connection with its contract and shall protect and save harmless the County from any and all damages and claims that may arise because of any inconvenience, delay, or loss the Proposer experiences as a result of the presence and operations of other developer(s) and/or separate contractor(s) working in or near the work covered by the Proposer's contract. The Proposer shall also assume all responsibility for any of its work not completed because of the presence or operation of other developer(s) and/or separate contractor(s).

1.11 Safety

1.11.1 General Requirements

1. In accordance with the Agreement, the County and the Proposer recognize that in every circumstance, activity, and decision related to the Project, safety of the public, County personnel, and Proposer personnel is the primary concern. Ensuring and maintaining safety on the Project shall supersede all

other objectives.

2. The Proposer shall designate a full-time Project designated safety representative for the Term. The Project safety representative shall ensure that Proposer safety plans, policies, and methods are compliant with all applicable standards, regulations, and laws. The Project designated safety representative, and designees, shall be available to the County and emergency services personnel at all times.

1.12 Quality Assurance and Quality Control

1.121 General Requirements

1. The Proposer shall or shall cause to be developed, implemented, and maintained a quality management system that includes a QMSP that meets the standards and specifications set forth in Attachment 1.5, including the VDOT's *Minimum Requirements for Quality Assurance & Quality Control on Design-Build & Public-Private Transportation Act Projects (QA/QC Guide)*. Where appropriate, the QMSP shall also incorporate requirements from the VDOT's *Manual of Instruction-Materials Division*, design manuals, *Construction Manual*, *Instructional Informational Memoranda*, *Maintenance Manual*, *Survey Manual*, *Right-of-Way Manual*, *Utility Relocation Manual*, and *Inspection Manual*, as well as the *Road and Bridge Specifications*, *Road and Bridge Standards*, *MUTCD*, and *Virginia Work Area Protection Manual*.
2. The QMSP shall describe the system, policies, and procedures that address the Work required, delivering the Project and providing documented evidence that the Work was performed in accordance with the Agreement.
3. The Proposer's Contractors, subconsultants, 2nd tier, or 3rd tier subconsultants shall adhere to the QMSP.
4. Neither the Proposer nor any of its Contractors, subconsultants, or suppliers shall be delegated quality management responsibility in any manner such that the Proposer is relieved of any responsibility or liability for the performance of those entities. At all times, contractual and otherwise, and the Proposer shall be contractually responsible for the quality compliance of the Project no matter the provider of services or supplier of material.
5. The Proposer shall review and report to the County its compliance with all PDPs, in accordance with the schedule in Attachment 1.1, as part of their quality systems.
6. The Proposer and its Contractors shall ensure that their quality records are available to the County, in accordance with the Agreement, in order to enable them to monitor and establish whether the Proposer's obligations under the Agreement are met.

1.122 Design Management

1. The Proposer is responsible for design quality in accordance with the QA/QC Guide. The Design Manager shall be responsible for establishing and overseeing a QA/QC program for all pertinent disciplines involved in the design of the Project, including review of design, working plans, shop drawings, specifications, and constructability of the Project. This individual shall be responsible for all of the design, inclusive of QA/QC activities. Members of the Design QA/QC team are responsible for review of all design elements to ensure the development of the plans and specifications are in accordance with the requirements of the Agreement. Design QA should be performed by one or more member(s) of the lead design team that are independent of the Design QC. The Project design control plan will provide the County assurance that the design plans and submittals will meet all contract requirements. The Quality Assurance Manager (QAM) shall verify that all design related work packages submitted for payment have been certified by the Design Manager as being in conformance with the Agreement and the Design QA/QC Plan.
2. Appendix 2 of the QA/QC Guide provides minimum requirements that shall be met for development of the Design QA/QC Plan.

1.123 Construction Management

1. The Proposer shall develop, execute, and maintain a Construction QA/QC Plan for the full duration of the Construction Period in accordance with the VDOT QA/QC Guide. The Proposer shall have the overall responsibility for both the QA/QC activities and shall be responsible for all QA activities and QA sampling and testing for all materials used and work performed on the Project. These QA functions shall be performed by an independent firm that is not involved in the construction and QC program and activities. There shall be a clear separation between QA and construction, including separation between QA inspection and testing operations and construction QC inspection and testing operations, including testing laboratories. Two independent, AMRL-certified testing laboratories will be required, one for QA testing and one for QC testing.
2. The Quality Assurance Manager shall also mean the Lead Quality Manager.
3. The QAM shall have the authority to enforce the Agreement requirements when deficient materials or unsatisfactory finished products fail to conform to the Agreement. The QAM, in accordance with his or her assignment, shall be responsible to observe the construction in progress and to ensure the QA/QC testing and inspection is being performed in accordance with the Agreement. The Proposer shall establish and maintain a Quality Assurance Auditing and Non-conformance Recovery Plan (AR Plan) for uniform reporting, controlling, correction and disposition, and resolution of non-

conformance (including disputed non-conforming items) issues that may arise on the Project. The Proposer's AR Plan shall establish a process for review and disposition of non-conforming workmanship, material, equipment, or other construction and design elements of the Work, including the submittal of the design review process for field changes. All deficiencies (hereinafter referred to as a Non-Conformance), including those pertaining to rules, regulations, and permit requirements, shall be documented by the QAM. An NCR referenced by a unique number shall be forwarded to the Contractor and the County within seven (7) days of discovery of the non-conformance. Non-conformance procedures are provided in the QA/QC Guide.

4. The Proposer shall also be responsible for providing QA/QC testing for all materials manufactured off-site except for the following:
 - i. Asphalt Concrete QA Program
 - ii. Hydraulic Cement Concrete Plant and Truck Inspections
 - iii. Hydraulic Cement Concrete Mix Designs
 - iv. Aggregate CMA QA Program
5. The QAM shall establish quantities prior to commencing construction, and provide the County a total number of QC, QA Independent Assurance (IA) and Independent Verification Sampling and Testing (IVST)), Owner's (the County) Independent Assurance (OIA), and Owner's Independent Verification Sampling and Testing (OVST) required as a result of the quantities and the sampling and testing requirements as set forth in Table A-3 and A-4 of the QA/QC Guide. The County will provide all OIA and OVST tests and, therefore, final determination of the actual number of OIA and OVST tests to be performed will be made by the County based on these quantities.
6. The QAM shall be responsible for the QA inspection, witnessing and testing of all materials and equipment used and work performed on the Project to include observing 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 Agreement. The QAM shall be vested with the authority and responsibility to stop any work not being performed according to the Agreement. The construction QA and QC inspection personnel shall perform all the construction inspection and sampling and testing work in accordance with the Agreement. This includes the documentation of construction activities and acceptance of manufactured materials. The Proposer's Quality Assurance firm shall have a presence onsite during all construction operations to ensure all construction work and QC activities are being performed in accordance with the Agreement requirements.
7. The QAM shall assign, at a minimum, one Lead QA Inspector for Construction to the Project prior to the start of construction. This individual

must be on the site full-time for the duration of all construction of the Project, shall be responsible to observe construction as it is being performed, to include all QC activities to ensure inspection and testing, and correction of any non-conformities of the Work are being performed in accordance with the Agreement. The Lead QA Inspector for Construction shall be supported by other QA inspectors under his/her direction to ensure at any time all construction operations and QC activities are being observed. The Lead QA Inspector for Construction shall report directly to the QAM.

8. In addition to the Lead QA Inspector for Construction, the QAM shall assign the following additional Lead QA Inspectors, who shall report to the QAM:
 - i. Lead QA Inspector for Bridge Construction
 - ii. Lead QA Inspector for Road Construction
 - iii. Lead QA Inspector for Environmental Compliance
9. All sampling and testing shall be performed by a laboratory that is accredited in the applicable AASHTO procedures by the AASHTO Accreditation Program (AAP). For test methods not accredited by AAP, the laboratory must comply with AASHTO R18 (most current Edition) and must be approved by VDOT at its sole discretion. Two independent testing laboratories will be required, one for QA testing and one for QC testing. The entity(ies) performing QA operations, inspections, sampling, and laboratory testing and the entity(ies) performing QC operations, inspections, sampling, and laboratory testing shall be unique and independent from one another.
10. All construction QA/QC personnel shall hold current VDOT materials certifications for the types of materials testing that they are assigned to perform in accordance with the QA/QC Guide and for the safety and use of nuclear testing equipment as required by the Road and Bridge Specifications. The QA programs shall be performed under the direction of the QAM. The QC programs shall be performed under the direction of the Proposer's construction manager. Substitution of Proposer's construction manager and the QAM shall require County approval. In addition, the County shall have the right to order the removal of any construction QA/QC personnel, including the QAM and the Proposer's construction manager for poor performance at the sole discretion of the County project manager. The QA/QC plan shall include rapid reporting of non-compliance to the County project manager and shall include the remedial actions to be taken as discussed in the QA/QC Guide.

11. The Proposer shall provide, prior to Project Completion, a complete set of Project records that include, but are not limited to, the following:
 - i. Project Correspondence
 - ii. Project Diaries
 - iii. Test Reports
 - iv. Invoices
 - v. Materials Books
 - vi. Certified Survey Records
 - vii. ROW Records
 - viii. Utility Records
 - ix. Warranties
 - x. As-built Drawings
 - xi. Special Tools

1.124 Removal of Unacceptable Work

1. Work will be considered unacceptable if it: (a) does not conform to the requirements of the Agreement; (b) is performed contrary to the instructions of the County; or (c) is performed without the authorization of the County. Unacceptable work shall be remedied or removed immediately unless otherwise determined by the County, and replaced in an acceptable manner at the Proposer's expense. The County may elect, in its sole discretion, to accept otherwise unacceptable work at a reduced price and a warranty extended to five (5) years for the subject portion of the Work when acceptance is considered to be in the best interest of the public.
2. The Proposer shall not perform destructive sampling or testing of the work without written authorization of the County. Unauthorized destructive sampling or testing will cause the work to be considered unacceptable

3. In the event the Proposer is granted authorization to perform destructive sampling or testing, the Proposer shall obtain the approval of the County for the method and location of each test prior to beginning such sampling or testing. In addition, destructive sampling and testing shall be performed in the presence of the County.
4. If the Proposer fails to comply immediately with any order of the County made under the provisions of this Section, the County will have the authority to cause unacceptable work to be removed and replaced and to deduct the cost from any monies due or to become due the Proposer.

1.13 Maintenance Responsibilities

1.13.1 General Requirements

VDOT will retain maintenance responsibility for snow removal and other weather-related emergency activities along the existing Eastern Avenue, Westhall Drive, Cory Farms Road, and Rockfish Gap Turnpike, but VDOT may require assistance from the Proposer on occasion to remove debris from the existing roadway as part of a partnering effort to ensure a safe work zone and a safe transportation facility. The Proposer shall make all reasonable accommodations along the existing roadways to VDOT Maintenance personnel and Maintenance contractors to ensure that regular maintenance activities are not interrupted. Such maintenance may include roadway repair, asset repair, debris removal (including animal carcasses), signal adjustment and repair, and other similar maintenance activities.

As Eastern Avenue Extended (the new extension) is a new roadway not yet accepted into the state system and not under maintenance responsibility of VDOT, the Proposer will retain maintenance responsibility for snow removal and other weather-related emergency activities along the Eastern Avenue Extended until Final Acceptance by the County. The Proposer shall not be responsible for maintenance of Eastern Avenue Extended after Final Acceptance by the County. Such maintenance may include mowing, roadway repair, asset repair, debris removal (including animal carcasses), signal adjustment and repair, and other similar maintenance activities. The Proposer's maintenance responsibility shall end at Final Acceptance of the Project. There will be no additional payment for this maintenance should the Contract be extended due to excusable or inexcusable delay by the Proposer or Owner. The standards for snow removal and other maintenance shall be in accordance with the June 10, 2021, edition of *VDOT Maintenance Best Practices*.

2 Communications

2.1 General Requirements

2.1.1 General Requirements

The Proposer, in collaboration with the County, shall develop procedures for public outreach, media relations, and marketing in the form of a Communications Plan, which will be consistent with the Agreement and the requirements included in Attachment 1.1. The Communications Plan shall define the roles and responsibilities between the County and the Proposer.

2.1.2 Project Communications Team

1. The Proposer shall establish a Project communications team through which all communication and public outreach activities will be coordinated.
2. The Project Communications team shall include a single point of contact responsible for coordinating Project communications with the County.

2.1.3 Interface and Liaison with the County

1. Management protocols shall be developed between the Proposer's Project communications team and the County. These protocols shall detail:
 7. Regular reporting to the County on communications and public information activities, current and outstanding community and political issues, and recent media activity
 8. Media protocols, providing clarity of responsibility in relation to media comment on particular aspects of the Project
 9. Stakeholder relations protocols, assigning responsibility for briefing and information to stakeholders on Project progress and milestones
 10. The development and approval of Project marketing, communications, and public outreach material
 11. Processes for managing communications surrounding emergency management and recovery operations
2. Meetings and public interface required by federal and state law shall be conducted in accordance with the current version of the VDOT's *Policy Manual for Public Participation in Transportation Projects*. The Proposer, in coordination with the County, shall conduct additional meetings, public interfacing, and marketing activities in accordance with the Communications Plan.

3. The Proposer shall collaborate with the County's in the development of all communications and marketing strategies to ensure they are consistent with both parties' values, needs, and goals. The Proposer shall provide the County with advance copies of all Project communications materials for review and approval prior to dissemination.

2.2 Public Outreach

221 Stakeholder Outreach

The Proposer shall plan and hold a Design Public Hearing in collaboration with the County to present its design plans in accordance with County and VDOT policies and procedures prior to submitting Right-of-Way Plans. The Proposer shall prepare all materials necessary for the Design Public Hearing. The County will work collaboratively with the Proposer to streamline the Design Public Hearing process where possible.

The Proposer shall develop and maintain a comprehensive stakeholder database to track and manage stakeholder communications.

The Proposer shall provide content and support as needed to update and maintain the County's Project Website, which will serve as the sole site for Project information through Project Completion.

The Proposer shall provide a point of contact and phone number for the public to ask questions and share concerns during the Project. The point of contact shall respond to inquiries within a reasonable time under the circumstances.

The Proposer shall hold informal meetings with affected stakeholders as necessary and as directed by the County.

The Proposer shall support as needed the following stakeholder outreach efforts by providing subject-matter experts and a communications person(s), as well as any necessary information materials:

- i. Homeowners Association (HOA) and civic association meetings
- ii. Pop-up events at special events
- iii. Briefings for elected officials and special groups

2.3 Media Relations and Outreach

- 231** The Proposer shall support the County in implementing a targeted, well- managed, earned media, and paid advertising program to engage the traveling public about construction-related issues and timelines throughout the Project. This shall include,

but is not limited to, the following:

7. Packaging or reporting of all MOT information, such as anticipated delays and lane closures, on a regular basis
 8. Communications with property owners in direct impact areas.
- 232** The Proposer shall assist the County in identifying media opportunities, implementing media events, and informing and responding to the media about the Project.
- 233** The Proposer shall:
7. Provide a set of its media protocols related to the Project, upon which the County and Proposer shall agree, including guidelines for information sharing, policies to promote consistent messages, and procedures specific to managing emergencies and incidents.
 8. Monitor all media coverage of the Project.
- 234** The Proposer shall provide the County with advance copies of all press releases and press materials for review and approval prior to dissemination.

3 Design and Construction Requirements

3.1 General Requirements

- 3.11** The Project shall be designed and constructed pursuant to the design criteria and specifications set forth in the Technical Requirements. The Proposer must verify and use the latest version of the documents listed herein as of the date of the final RFP issuance or latest addenda. The Proposer must meet or exceed the minimum roadway design standards and criteria and must apply appropriate standards.
- 3.12** If during the course of the design, the Proposer determines that a specific Standard, Specification or Reference Document is required but is not listed herein, then the Proposer shall first verify with the County whether any such Standard, Specification or Reference Document exists. If not, then it shall be the responsibility of the Proposer to establish the pertinent Standard, Specification, or Reference Document in accordance with generally accepted Good Industry Practice and submit to the County for review and approval prior to inclusion in the Agreement.
- 3.13** The Proposer is responsible for achieving the Work in accordance with all current County and VDOT standards as of the date of the final RFP issuance, including any revisions and addenda. If a construction element is not adequately addressed within VDOT Standard Specifications or the Special Provisions listed for the purpose of the Public Private Partnership project design, it is the responsibility of the Proposer

to develop alternative specifications in accordance with generally accepted Good Industry Practice for County review and approval.

- 3.14** Design Exceptions will be required for any element of the design among the fourteen controlling criteria that do not meet AASHTO minimum design standards. Design Waivers will be required for any element that meets AASHTO minimum design standards but does not meet the VDOT minimum standards or for any element other than the fourteen controlling criteria that do not meet AASHTO minimum design standards. The Proposer will be required to follow the process as described in the latest version of IIM LD-227, S&B 70 regarding Design Exceptions and Design Waivers. The Proposer shall submit design exceptions for the County to route for VDOT and FHWA approval and design waivers for VDOT approval. VDOT has the sole right to approve or reject any additional DEs or DWs that were not included in the RFP Information Package.

By submitting its cost proposal, the Proposer certifies that the Project concept submitted in its cost proposal is fully compliant with the minimum design requirements as outlined in the Agreement.

- 3.15** All Design Documentation and Construction Documentation shall be in English units.
- 3.16** The Proposer shall ensure that areas impacted by the Work are subject to continual and un-interrupted removal of rubbish, scrap material, and debris. Work sites shall have a neat, safe and orderly appearance at all times.
- 3.17** The Proposer shall preserve property and improvements along the boundary lines of and adjacent to the Work unless the removal or destruction is absolutely required and consistent with the Construction Documentation. The Proposer shall use suitable precautions to prevent damage to such property. If property is damaged, the Proposer shall restore property to a condition similar or equal to that existing before such damage was done by repairing, rebuilding, or restoring, as may be directed by the County, or making settlement with the property owner. The Proposer shall secure from the owner a release from any claim against the County. A copy of this release shall be furnished to the County.
- 3.18** The Proposer shall provide letters to the property owners at the address on record that comply with the Code of Virginia § 33.2-1011, Right of Entry.
- 3.19** The Proposer shall be responsible for acquiring the following permits from the County and the Department:
- 1. Land Disturbance Permit** – For this project, the County is the program authority for the purpose of administering the Virginia Erosion *and* Stormwater Management Program ("*VESMP*"). Therefore, the Proposer is

responsible to obtain this permit by complying with all County VESMP process/procedure as defined in Albemarle County Code Chapter 17 – Water Protection; Sections 401-406.

2. **VDOT Land Use Permit** – The Department has informed the County that the Proposer (acting as the County’s agent) will be required to obtain one (1) or more VDOT Land Use Permit(s) (LUP). The Land Use Permit(s) WILL NOT require separate bond(s). However, the Proposer will be required to provide a dual obligee rider as identified below. The VDOT Land Use Permit Fee(s) will NOT be waived for this Land Use Permit. The Proposer WILL need to include the cost of Land Use Permit(s) in their bid. The Proposer will be responsible for filing the Land Use Permit(s) as an agent of the County and work with the Department to gain their acceptance and issuance of permit(s). Depending upon the Proposer’s schedule and means and methods, the Proposer may need to acquire multiple types or multiple permits (such as for surveying, geotechnical investigation, early works construction, construction, etc.).
 - i. The VDOT Land Use Permit may be obtained with no separate bond(s) to the County or Contractor provided VDOT is listed as a Dual Obligee Rider on the Performance Bond to meet the VDOT Land Use permitting requirements.
3. **Floodplain Development Permit** - The Proposer is responsible for complying with all process/procedure as defined in Albemarle County Code Chapter 18 – Zoning; Sections 30.2.12-14.

3.2 Environmental

321 Local Environmental Review Process

The Proposer shall be required to develop the documentation for the Project in accordance with the Virginia Department of Environmental Quality’s Local Environmental Review Process (LERP). The Proposer shall carry out environmental commitments and conditions during the construction, as applicable, as identified in the LERP, the joint permit application, and authorized permits. All permit compliance shall be supported by appropriate documentation, to be provided by the Proposer to the County Project Manager. The Proposer is solely responsible for all permits required that have not been provided by the County.

The Proposer is solely responsible for any costs or schedule delays related to any permit development, obtaining permits, permit modifications or additional environmental studies associated with Proposer’s design, as well as the

submission of inadequate or substandard deliverables. No time extensions will be granted. All costs associated with complying with these requirements shall be included in the Proposer's Price Proposal.

322 Cultural Resources

The Proposer shall be responsible for conducting any required Section 106 consultation with the Virginia Department of Historic Resources (VDHR) to obtain the necessary permits.

The Proposer is responsible for conducting all cultural resources studies necessitated by proposed design changes, in accordance with the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation, and the VDHRs' most current Guidelines for Conducting Survey in Virginia. The Proposer shall then carry out any additional cultural resources commitments that result from such coordination at its sole expense and at no additional cost to the County.

323 Water Quality Permits and Compensatory Mitigation

The Proposer is responsible for obtaining all water quality permits required to construct the Project (including utility relocations by the Proposer). The Proposer will be the Permittee. Should the Proposer propose design changes acceptable to the County, permitting requirements may also change; the Proposer remains responsible for obtaining all necessary water quality permits and permit modifications required by the regulatory agencies.

The Proposer shall obtain all necessary environmental clearances, permits, and approvals required to accomplish the work as noted in the Agreement. The Proposer shall be responsible for performing necessary design and fieldwork to support the acquisition of necessary water quality permits independently and directly from the regulatory agencies. The Proposer shall be responsible for verifying permit requirements prior to construction. Regulatory agencies will make the final determination as to which state and federal water quality permits will be required during coordination with the Proposer.

The USACE issued a Preliminary Jurisdictional Determination to the County on September 16, 2020.

The Proposer shall determine the applicability of water quality permits for the Project (to include utilities to be relocated by the Proposer for the Project). Should it be determined that water quality permits are required, the Proposer shall conduct the preliminary field assessment including, but not limited to, wetland delineation, stream assessment, Section 404 alternatives analysis and permit impact sketches. The Proposer shall also determine the required sequencing methodology to limit Project impacts to wetland systems. The

Proposer shall use this information to obtain required permits.

If the Proposer determines that wetlands or stream mitigation is required to secure the permit authorization, the Proposer shall provide the required compensatory mitigation. The Proposer shall account for all costs associated with water quality permit acquisition, as well as compensatory mitigation, in its price proposal.

Should the Proposer propose design changes acceptable to the County, permitting requirements may also change; the Proposer remains responsible for obtaining all necessary water quality permits and permit modifications required by the regulatory agencies to accommodate the design changes.

The Proposer shall ensure that Project schedule accommodates any special provisions, Time of Year Restrictions (TOYR), and the duration of permit acquisition from the regulatory agencies. The Proposer 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 Proposer shall be responsible for compliance with pre-construction, construction-related permit conditions, as well as post-construction monitoring if required by regulatory agencies. This shall include costs associated with acquiring water quality permits and additional compensatory mitigation for the Project if needed.

The Proposer shall provide to the County copies of all permits, documentation, and correspondence with regulatory agencies. Construction activities shall not impact regulated areas within the Project limits until all applicable water quality permits have been issued to the Proposer. The Proposer shall not proceed with work covered by the water quality permits until the County releases the work in writing. The County 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 Proposer 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 County's release of the Work, the Proposer shall notify the County and the regulatory permitting agencies in writing fourteen (14) days prior to beginning work in the jurisdictional areas covered by the water quality permits.

The Proposer shall allow environmental compliance inspections by the County, and regulatory agencies as required by permits and to facilitate any interim compliance reviews and assessments.

At the conclusion of the Project, the Proposer shall notify the County and the regulatory permitting agencies in writing of the completion of the work in the jurisdictional areas covered by the water quality permits. At the completion of the Project, the Proposer is required to transfer any Virginia Marine Resources Commission (VMRC) permits back to the County.

The Proposer shall carry out any additional permit conditions and commitments that result from changes in footprint or scope (assuming it is approved by the County); additionally, the Proposer shall be responsible for any schedule delays.

All permitted construction activities shall be identified as Hold Points in the Proposer's CPM Schedule.

324 Threatened and Endangered Species

The Proposer will be responsible for database reviews for the crossing at Lickinghole Creek to determine the Project's potential effects on threatened and endangered (T&E) species and completed the USFWS 4(d) self-certification review process.

The Proposer shall be advised that new and updated T&E information is continually added to agency databases. The Proposer shall be responsible for any subsequent coordination to obtain updated information, requirements, and clearances from environmental regulatory agencies that provide threatened and endangered species oversight.

325 Hazardous Materials

The Proposer shall manage solid waste, hazardous waste, and hazardous materials in accordance with all applicable federal, state, and local environmental regulations and shall implement good housekeeping, waste minimization and pollution prevention practices.

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

326 Environmental Compliance

The Proposer is responsible for compliance with all applicable County, State and Federal environmental laws, regulations, and permits. If, at any time, the Proposer is not in compliance with all applicable environmental laws, regulations, Executive Orders, commitments, etc., the County Project Manager has the authority to suspend work, in whole or in part, until such time as the deficiencies or non-compliant items have been corrected. Should any non-compliant item(s) be identified during construction, immediate and continuous corrective action shall be taken by the Proposer to bring the item(s) back into compliance. The Proposer shall notify the County Project Manager immediately of all non-compliant item(s) and shall provide to copies of all documentation and correspondence with regulatory agencies related to the non-compliant item(s) and their resolution, concurrent with each submission.

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

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

327 Lickinghole Creek Monitoring

The Proposer shall at all times conduct contract operations in a manner to prevent to the greatest extent possible sediment runoff into, and disturbance to the bottom of, Swift Creek Reservoir and shall comply with the following total suspended solids (TSS) requirements. Random sampling and analysis will be carried out by the Proposer in strict accordance with the current VESMP regulations. Samples will be collected immediately downstream of the construction site as well as samples immediately upstream of the site to establish the current or baseline TSS levels. The Proposer shall comply with the following requirements throughout the entire duration of the project and provide the results in the Quality Control Inspector's daily reports.

1. If any TSS tests indicate a downstream TSS level 30 parts per million (PPM) greater than the upstream TSS level, the Proposer shall immediately cease all operations within or adjacent to the Reservoir and provide a second turbidity curtain at no additional cost downstream from the initial

turbidity curtain in accordance with the manufacturer's instructions and as directed by the County. The second curtain shall encompass the general area encompassed by the initial curtain.

2. If, after satisfactory installation of a second turbidity curtain, any TSS tests indicate a downstream TSS 30 PPM greater than the upstream TSS level, the Proposer shall immediately cease all operations within or adjacent to the Reservoir until a single TSS test collected at the same location downstream is less than 30 PPM greater than the upstream measurement. Re-sampling will occur the first workday after the initial test results are reported.

3.3 Geotechnical

331 Geotechnical Design

1. A geotechnical design engineer shall be responsible for ensuring that all geotechnical investigations, analysis and recommendations that are necessary for the design and construction of the Project are performed in accordance with the Technical Requirements. The geotechnical design engineer shall coordinate with the design manager to ensure that all geotechnical design and construction considerations have been properly considered in the design and included in the work plans, specifications, copied notes, and constructability reviews for the Project. This individual shall have geotechnical engineering experience and expertise working in the region and/or in areas of similar geologic settings with similar project features as this Project. The geotechnical design engineer shall be a Licensed Professional Engineer in the Commonwealth of Virginia. The geotechnical design engineer shall be on-site during grading operations, pile driving, drilled shaft construction, and other deep foundation activities or visit the site at sufficient intervals during construction to review slope excavation operations and verify the planned slope design is suitable or make modifications as approved by The County.

The Proposer shall collect appropriate data for geotechnical evaluation of embankments, soil and rock cuts, culverts, pavements, bridge and wall structures, sound barrier walls, stormwater management facilities, minor structures including drainage pipes, and any other earth-supported structures or elements of roadway design and construction. The Proposer shall be responsible for obtaining any Regulatory Approvals required for any borings needed in performance of the Proposer's geotechnical investigation for this Project. The Proposer shall be responsible for obtaining all necessary permits and utility clearances as required by the County, VDOT, the Commonwealth of Virginia, or any other jurisdictional body or owner prior to accessing public or private property for the purpose of conducting geotechnical field work and shall provide the necessary

traffic control in accordance with the current edition of the *Virginia Work Area Protection Manual*.

The Proposer shall complete laboratory tests in accordance with pertinent ASTM or AASHTO standards and analyze the data to provide design and construction requirements. Soils and materials tests shall be performed by a laboratory accredited by AASHTO for each test it conducts for the Project, unless otherwise approved by the County. The Proposer shall have a geotechnical report approved by VDOT before beginning construction.

The Proposer shall provide to the County records of all subsurface explorations and describe the soils encountered and their depth limits, in accordance with the requirements outlined in Chapter 3 of the VDOT's *Manual of Instructions* for Materials Division and the investigation in accordance with an approved exploratory boring plan(s) approved by the County. The Proposer may elect to perform roadway borings at twice the spacing identified in Chapter III of the *Manual of Instructions* provided the Proposer assumes all responsibility and liability for any changed or unknown conditions at the unexplored locations. All other (e.g., bridge, retaining wall, minor foundations, etc.) boring spacing requirements shall be in accordance with Chapter 3 of the *Manual of Instructions*.

The final geotechnical investigation shall be in compliance with Chapter 3 of VDOT's *Materials Manual of Instructions*, the AASHTO LRFD *Bridge Design Specifications*, and VDOT Modifications; and Section 700.05(c) of the VDOT Road and Bridge Specifications unless otherwise approved by VDOT. The Proposer may elect to use cores and borings included in the Geotechnical Data Report performed for the Project to meet these requirements. The Proposer 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 *Manual of Instructions* for Materials Division. The electronic files shall be provided by a certified Professional Geologist or a suitably qualified registered Professional Engineer in the State, in gINT© software, before the beginning of construction. Upon request, VDOT will provide its gINT and ACCESS file structures for the Geotechnical Database Management System.

Where applicable, the Proposer shall incorporate reliability assessments in conjunction with standard analysis methods. An acceptable method for evaluation of reliability is given by Duncan, J.M. (April 2000) *Factors of Safety and Reliability in Geotechnical Engineering*, Journal of Geotechnical and Geoenvironmental Engineering, ASCE, Discussions and Closure August 2001. A suitable design will provide a probability of success equal

- to or greater than 99 percent. The aspects of this Project for which reliability assessments shall be made include: 1) the selection of soil parameters used in the design of all foundations and retaining walls, 2) the factors of safety for slope stability, and
- 3) the settlement and bearing capacity of embankments. Except as mentioned in (1) above, reliability assessments need not be performed for structural foundations and retaining walls, which will be evaluated based on the required limit states in LRFD. The Proposer may propose to identify specific, non-critical features, and alternative methods for evaluating variability of subsurface conditions, reliability and minimum factors of safety, prior to submission of its design calculations and drawings. VDOT may, in its sole discretion, accept or reject such proposed methods.

The Proposer shall provide to the County geotechnical design and construction reports that summarize pertinent subsurface investigations, tests, and engineering evaluations in accordance with the requirements of Chapter III of the *Materials Division Manual of Instructions*. Technical specifications for construction methods that are not adequately addressed in the standards and specifications set forth in Attachment 1.2 shall be provided by the Proposer. The Proposer shall review the Construction Documentation to assure that they have appropriately incorporated the geotechnical components. The quality control-quality assurance documents shall document how each specific geotechnical recommendation or requirement is addressed in the Construction Documentation and shall reference the drawings that incorporate the pertinent results. The results of the geotechnical investigation and laboratory results shall support the design and construction efforts to meet the requirements for the pavement design set forth in Attachments 1.5.

The Proposer shall minimize differential settlements of the approach to a bridge for new construction and when applicable provide construction recommendations to address soil-structure interaction to accommodate the unique construction methods applied to this Project. All geotechnical work shall be completed to satisfy baseline and post-construction contract performance requirements, as described below.

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

- i. Total vertical and differential settlements that will not be a deterrent to achieve and maintain the post-construction performance requirements for overall ride quality and localized roughness of the pavements nor exceed the grade tolerances of pavement sections of approach slabs, bridge decks, and tie-ins to the Project

- ii. Settlement that will not impede positive drainage of the pavement surface especially within the travel lanes nor subject the roadway to flooding
- iii. Settlement that does not result in damage to adjacent or underlying structures, including utilities
- iv. Humps and depressions exceeding the specified tolerance will be subject to correction by the Proposer. The Proposer shall notify the quality assurance manager or the operation and maintenance manager and the County for any non-conformance items

332 Slope Design

Cut and fill slopes shall be no steeper than 2H:1V. All cut and fill slopes shall be designed to be stable for the interim construction stages, for the end-of-construction condition, and for design-life conditions.

The following factors of safety are to be used with limit equilibrium methods of analysis to identify factors of safety for representative sections of all soil cut and soil embankment fill slope areas higher than 10 feet, or where slopes are supporting on, or are supported by, retaining structures. The factors of safety listed in Table 3.3 are valid for subsurface investigations performed in accordance with Chapter III of VDOT’s Materials Division’s *Manual of Instructions* or for site- specific investigation plans approved by VDOT. Table 3.3 is not applicable for rock cut slopes.

Basis of Soil Slope Analysis Parameters	Factor of Safety	
	Involves Structure or Critical Slope	Non-Critical Slope
In-situ or lab tests and measurements ^{2,3}	1.5	1.3
No site-specific tests	N/A ³	1.5

1. A critical slope is defined as any slope that is greater than 25 feet in height, affects or supports a structure, or whose failure would result in significant cost for repair, or damage to, private property
2. Site specific in-situ tests include both groundwater measurements and SPT testing but may also include CPT or DMT
3. Parameters for critical slopes involving structures must be based on specific laboratory testing
4. Problem soils (fissured or heavily over-consolidated soils), must be analyzed using shear strength parameters determined from appropriate laboratory strength tests
5. Problem soils must be analyzed for short- and long-term stability using residual strength parameters obtained from laboratory shear testing. These parameters must be determined by drained direct shear tests using sufficient stress reversals to obtain large strains as discussed in the U.S. Army Corps of Engineers laboratory testing procedures EM-1110-2-1906. Many reversals are required to reach residual strengths, and some references suggest using a pre-split sample (Ref. Engineering properties of Clay Shales, Report No. 1 by W. Haley and B.N. MacIver).
6. Construction plans shall specify use of soil types consistent with the parameters used in slope analyses

Global and slope stability analyses of Potomac Formation clay and silts shall be analyzed using residual strength parameters for problem soils wherever they are encountered.

333 Unsuitable Materials

Unsuitable Material is defined as material used as embankment fill, and in cut areas to a depth of at least 3 feet below subgrade directly beneath pavements and at least 2 feet beneath the bedding of minor structures and laterally at least 2 feet beyond the outside edge of the pavement shoulders and bedding limits of the minor structures that meets one or more of the following criteria: classifies as CH, MH, OH and OL in accordance with the Unified Soil Classification System (USCS); contains more than 5 percent by weight organic matter; exhibits a California Bearing Ratio (CBR) value less than 5 (US 15 to Route 28) or less than 2.5 (Route 28 to I-495) when tested in accordance with VTM-8; exhibits a swell greater than 5 percent as determined from the CBR test using VTM-8; exhibits strength, consolidation, durability of rock or any other characteristics that are deemed unsuitable by the Proposer's geotechnical engineer or as denoted in the Agreement for use in the Work. All materials within the uppermost 3 feet of a pavement subgrade that exhibits a CBR value less than that stipulated in the pavement design shall also be considered unsuitable except beneath the existing pavement where the Proposer is restricted from disturbing existing subgrade soils.

The anticipated locations and methods of treatment for unsuitable materials identified by the Proposer's qualified geotechnical engineer shall be shown on the design plans and cross sections. Saturated or very dry or loose or very soft coarse- and fine-grained soils that exhibit excessive pumping, weaving or rutting under the weight of construction equipment are also considered unsuitable unless they can be moisture conditioned through either mechanical or chemical means to an acceptable

moisture content that allows adequate compaction to meet project specifications, and classification testing indicates they are not otherwise unsuitable. Topsoil, peat, coal, and carbonaceous shale shall also be considered unsuitable material.

All unsuitable material shall be disposed of and treated as discussed in accordance with the Agreement at no additional cost to the County. Topsoil or other organic soils are also considered unsuitable for use in embankment fill other than as a cover for slopes for the purpose of establishing vegetative cover. When used as cover for slopes, the thickness of topsoil shall not exceed 12 inches.

Acceptable methods of dealing with these unsuitable soils are: 1) complete removal from 2 feet beyond the outside edge of shoulder on each side of the pavement or bedding limits of minor structures and replacement with structural fill; 2) partial removal to at least 2 feet below final pavement subgrade or minor structure bedding elevation to within the limits noted in 1) and replacement with select material per Section 207 of the Road and Bridge Specifications and geosynthetic fabric; 3) raising grades with select material per Section 207 of the Road and Bridge Specifications and geosynthetic fabric to provide a minimum 2 feet of separation between these soils and final pavement subgrade or minor structure bedding, and 4) chemical stabilization of the soils to a minimum depth of 12 inches below final pavement subgrade. All unsuitable materials shall be disposed off-site at no additional cost to the County.

334 Embankments and Retaining Walls

Embankments and certain aspects of retaining wall design are not addressed by LRFD. Embankments and cut slopes shall be designed in accordance with VDOT Materials Division's MOI. The maximum slope ratio to be used for cut or roadway embankment fill slopes shall not be steeper than 2H:1V. The Proposer is responsible for verifying the stability of all slopes, including those retained by structures.

All retaining walls shall be designed in accordance with the applicable VDOT and AASHTO requirements, including Soil Design Parameters for Retaining Walls and Non-Critical Slopes included in Attachment 1.2. If the Proposer elects to use mechanically stabilized earth (MSE) walls, the fill material used in the reinforced zone shall be a crushed aggregate with properties in accordance with the VDOT Special Provisions for approved proprietary MSE walls. The Proposer shall provide both global and external stability analysis utilizing a computer program acceptable to the County and submit the results of the analysis, including boring logs, laboratory data, and any other applicable data, to the County for review. The wall supplier shall provide to the Proposer, for submittal to the County, an internal stability analysis that validates the design of the wall. Retaining walls shall be designed to control settlements within tolerances identified by VDOT Guidelines for Preparation of Alternate Retaining Wall Plans. Proposers are advised that MSE walls are not allowed by the County or VDOT within the limits of a 100-year

Floodplain.

Material and Construction requirements shall follow the *VDOT Manual of the Structure and Bridge Division*, Volume V – Part 11 “Geotechnical Manual for Structures” and applicable special provisions listed in Attachment 1.5. Where undercutting and material replacement is required to reduce settlement or improve bearing capacity and global stability, areas requiring repair shall be clearly identified on the plans with notes provided to aid plan review, construction, and inspection.

335 Control of Rock Blasting

Rock blasting will not be permitted unless otherwise permitted by the County. If Rock Blasting were to be approved by the County, it shall be the responsibility of the Proposer to determine appropriate level of vibration monitoring and the threshold peak particle velocity during construction operations and implement this monitoring when necessary. In no event, however, shall vibration be measured at an existing structure outside ROW exceeding 0.5 inch per second unless otherwise reviewed and approved by the County. Construction vibrations within ROW shall be limited to 0.75 inch per second when frequency is under 40 hertz and limited to 1.0 inch per second when the frequency is greater than 40 hertz unless otherwise reviewed and approved by the County. The Proposer shall be responsible for repairing all damage to adjacent facilities and structures for construction-induced damage.

3.4 Materials

341 Rights for and Use of Materials Found on Project

With approval of the County, the Proposer may use in the Project any materials found in the excavation that comply with the standards and specifications set forth in Attachment 1.2. The Proposer shall replace unsuitable materials at its own expense with acceptable material. The Proposer shall not excavate or remove any material from within the construction limits that is not within the grading limits, as indicated by the slope and grade lines. The Proposer shall not waste, bury, deposit, or abandon any material within the Project limits. The County may consider at its sole discretion certain exceptions to this requirement on a “case-by- case basis.”

342 Samples, Tests, and Cited Specifications

The responsibility for quality control, quality assurance, and ensuring compliance with applicable specifications and testing requirements lies with the Proposer. The Proposer’s QMSP shall outline the procedures for quality assurance, quality control, and compliance with the Technical Requirements. The County, at its discretion, may conduct testing and audits in its performance of Oversight Services.

343 Disposal Areas

Unsuitable or surplus material shall be disposed of by the Proposer off the Project ROW. The Proposer shall follow County VESMP process/procedure as defined in Albemarle County Code Chapter 17 – Water Protection; Section 304.

The Proposer shall obtain the necessary rights to property to be used as an approved disposal area.

The Proposer shall furnish the County a statement signed by the property owner in which the owner agrees to the use of their property for the deposit of material from the Project. The property owner will hold harmless the County, its officer, its agents, and its employees. Upon completion of the use of the property as an approved disposal area, the Proposer shall furnish the County a release signed by the property owner indicating that the property has been satisfactorily restored. This requirement will be waived for commercial sources, sources owned by the Proposer, and sources furnished by the County.

The Proposer will obtain VPDES Construction Permit as well as any other applicable permits for Disposal Site, which shall be in compliance with County standards and specifications.

3.5 Drainage

351 Hydrologic and Hydraulic Analysis (H&HA)

The bridge crossing at Lickinghole Creek will affect the NFIP map panel 51003C0245D and may potentially affect NFIP map panel 51003C0237D immediately upstream in Albemarle County, Virginia. The Proposer will be required to produce a CLOMR and LOMR for review and acceptance/approval by the County and Agency. The Proposer's cost proposal shall include the efforts to secure both the CLOMR and the final LOMR.

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

Sheet), Hydraulic Design Advisories and applicable I&IM-LDs, and any applicable local zoning floodplain restrictions.

The hydrologic and hydraulic analysis shall be documented by completing the VDOT LD-293 and LD-294 forms as outlined in Chapters 3 and 12 of *VDOT's Drainage Manual*. The Proposer shall provide The County two (2) paper and two (2) electronic copies (Adobe PDF format) of the final H&HA Report which shall also include summary table results and profile and stream cross-section plots of the HEC-RAS model (or other VDOT approved analysis software for this Project). The HEC-RAS model (or other model) electronic files shall also be provided separately in a format that may be used by The County to run the model. The final H&HA submittal shall include the completed VDOT forms LD-293 and LD-294.

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

Hydraulic modeling shall take into consideration natural floodplain elevations in accordance with Sections 8.3.3.2 and 12.2.4.6 of the *VDOT Drainage Manual*.

Disposal of excess excavation and materials are prohibited in a FEMA designated floodplain on VDOT, and/or County owned property, property/ROW/easements unless reviewed and approved by the County and accompanied by a complete signed and sealed H&HA analysis in full accordance with Chapter 12 of the *VDOT Drainage Manual*. Disposal of excess excavation and materials off VDOT and/or ROW/property within a FEMA designated floodplain shall meet all applicable federal and state regulations pertaining to a FEMA designated floodplain. Proposer shall provide full documentation demonstrating compliance with federal and state regulations to the County.

The Proposer shall provide the County electronic copies (sealed Adobe PDF format) of the final H&HA, HEC-HMS, HEC-RAS (or other the County approved analysis software for this project) Files.

352 Drainage Analysis and Design Report

The drainage system analysis and design work shall include, at a minimum, the design and construction of culverts, cross drains, ditches, open channels, storm sewer systems, underdrains, bridge deck drainage assemblies and structures, downstream channel and flood protection measures, stormwater management facilities, and erosion and sediment control measures in compliance with the standards and specifications set forth in Attachment 1.2. The Proposer shall provide the County electronic copies of a final drainage report incorporating all drainage calculations including pre- and post-development discharges, capacities, and supporting data such as drainage areas (with maps), ground cover calculations, etc. in accordance with the documentation requirements as outlined in the *VDOT Drainage Manual*. Each milestone submission of drainage analysis shall include an electronic copy of the drainage report for the County's approval.

353 Drainage Design and Plan Documentation

The Proposer shall provide and perform all investigations, evaluations, analysis, coordination, documentation, and design required to meet all Hydrologic and Hydraulic, Drainage, Stormwater Management, Erosion and Sedimentation Control, Stormwater Pollution Prevention, and Virginia Storm Water Management Program permitting requirements of the standards and reference documents listed in Attachment 1.2.

Final Design Documentation for any hydraulic design shall include a complete set of final drainage computations sealed and signed in accordance with IIM-LD-243.

The drainage design may include but not be limited to enclosed storm sewer systems, inlets, stormwater management systems for water quality and water quantity, manholes, junction boxes, conduits, culverts, headwalls, end sections, channels, ditches, bridge and major structure hydraulics, scour analysis, scour countermeasures, adequate outfalls, and erosion and sediment control.

The Proposer shall prepare drainage design criteria and a list of software packages to be used in the design sixty (60) days prior to the first drainage submission for review and acceptance.

The Proposer shall assemble and review all available data, studies, and development plans impacting the Project for use in preparing the drainage design. The Proposer shall perform a hydrologic analysis of the Project corridor and all off-site areas that drain through or impact the Project.

The Proposer may elect to use existing VDOT drainage assets hydraulically throughout the Project for its drainage design. If the Proposer elects to use existing VDOT drainage assets for its hydraulic design, the Proposer shall evaluate the drainage assets for hydraulic adequacy. The Proposer shall perform all hydraulic improvements necessary to bring the existing drainage assets into hydraulic

compliance. All existing drainage assets the Proposer intends to use shall be evaluated and verified to have adequate hydraulic capacity for ultimate land use conditions in accordance with the *VDOT Drainage Manual*.

Existing drainage assets used by the Proposer for its drainage design shall be evaluated for structural adequacy. The Proposer shall extend or modify all existing drainage assets as required to accommodate the drainage design. If existing drainage assets will be subjected to any additional loading, the Proposer shall make all improvements as necessary to achieve structural adequacy. If there is an existing drainage asset the Proposer elects to use but is prevented from doing so because of physical damage to the existing drainage asset, the Proposer shall repair or replace the existing drainage asset in the immediate area of the proposed connection. The Proposer shall repair or replace any existing drainage asset used in the drainage design in the Project ROW that is structurally deficient. The Proposer shall assess the structural condition of the assets by performing a visual and video inspection of the existing non-bridge class pipes and culverts utilizing the assessment criteria for Post Installation Inspections presented in VDOT Supplemental Specification 302. The Proposer shall provide the County with an inspection report documenting their assessment following the methodology as prescribed in the supplemental specification. The report shall include specific recommendations relative to the structural condition and serviceability of the structures. With the County's approval, drainage pipes and box culverts deemed repairable shall be rehabilitated in accordance with the VDOT's guidelines including, but not limited to those methods outlined in Chapter 8, of the *VDOT Drainage Manual* and Special Provisions SU302001B Pipe Rehabilitation and SU302002A Pipe Replacement.

The Proposer shall be required to clean out debris accumulations and silt in all drainage facilities in the Project ROW prior to Project Completion.

The Proposer shall perform a comprehensive design analysis for impacted major culvert or bridge-crossing locations where the 100-year discharge is 500 cfs or more, or floodplain studies have been published by federal agencies. The outline for the comprehensive design analysis will be in accordance with the standards and specifications set forth in Attachment 1.2. The Proposer will ensure the hydraulic analysis is coordinated with the bridge design when bridges over waterways are involved.

The scour analysis and reporting shall be in accordance with the standards and specifications set forth in Attachment 1.2 and shall include all existing structures undergoing restoration of structural integrity, widening, and new and replacement bridges at stream crossings. Countermeasures to accommodate scour at existing piers shall only be used when approved by the County. Scour countermeasures shall be provided at existing and new abutments in accordance with the standards and specification as set forth in Attachment 1.2.

The Proposer shall perform a scour analysis on all new retaining walls parallel to stream flow or subject to longitudinal scour. Retaining walls subject to longitudinal

scour will be designed to withstand the 500-year super flood scour without the aid of scour countermeasures, unless otherwise agreed to by the County. Appropriate bank protections and revetments are required for walls subject to flows and potential bank erosion.

During the Work period the Proposer shall provide for positive drainage of all roadway facilities. Construction activities shall not redirect or increase drainage run-off to a private property without proper controls in accordance with the standards and specifications in Attachment 1.2.

354 Underdrains

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

UD-4 edge drains will be required for all pavements on this Project unless otherwise specified by VDOT standards. The Proposer shall utilize a modified VDOT UD-4 underdrain for this project to ensure that the County's quality standards are met. The VDOT UD-4 standard shall be modified to replace the required 4" single wall perforated drainage pipe with 4" dual wall perforated drainage pipe in accordance with AASHTO M252. The only modification to Standard UD-4 shall be the use of a dual wall pipe in lieu of the single wall pipe, all other requirements of the Standard UD-4 and applicable Specifications shall apply. Modified UD-1 underdrain shall be provided in lieu of modified UD-4 edge drain for pavement sub-drainage in areas of high ground water, springs or cuts in excess of fifteen (15) feet; the modification consists of wrapping the aggregate with geotextile drainage fabric. Standard Combination Underdrain (CD-1) shall be provided at the lower end of cuts. Standard Combination Underdrain (CD-2) shall be provided at grade sags, bridge approaches, and at the lower end of undercut areas.

355 Stormwater Pollution Prevention Plan (SWPPP)

A SWPPP, including, but not limited to, an Erosion and Sediment Control (ESC) Plan and Narrative, a Pollution Prevention (P2) Plan, and a post construction Stormwater Management (SWM) Plan shall be prepared and implemented by the Proposer in compliance with applicable requirements of the standards and reference documents listed in Attachment 1.5 including the Virginia Erosion and Sediment Control Law and Regulations and the Virginia Stormwater Management Program (VSMP) Law and Regulations.

It shall be the responsibility of the Proposer to have a qualified person within their team structure, other than the ESC and post construction SWM Plan designer, who

is authorized and/or certified by the Department of Environmental Quality (DEQ) to perform plan reviews, independently review and certify that the ESC Plans and Narrative and post construction SWM Plan for the Project are in accordance with the County and DEQ Approved ESC and SWM Standards and Specifications. Before implementing any ESC or post construction SWM measures not included in the County and DEQ approved ESC and SWM Standards and Specifications, a variance or exception respectively must be requested through the County in accordance with the latest versions of IIM-LD-195, IIM-LD-242 and the *VDOT Drainage Manual*.

The Proposer shall provide the County electronic copies of the final ESC Plan and Narrative, P2 Plan and post construction SWM Plan incorporating all calculations, analysis, documentation and evaluations required to demonstrate compliance with the applicable stormwater management regulations. The ESC Narrative shall specifically include calculations (with supporting data) documenting that the design meets the water quantity requirements for downstream channel protection and flood protection in the ESC Law and the VSMP Regulations, as appropriate, for each location where stormwater is discharged from the Project site.

It shall be the responsibility of the Proposer to have a qualified person within their team structure, other than the ESC and post construction SWM Plan designer, who holds a current Stormwater Management Plan Reviewer certificate from the Virginia Department of Environmental Quality, independently review and certify that the ESC Plans and Narrative and post construction SWM Plan for the Project are in accordance with VDOT's Approved ESC and SWM Standards and Specifications. The Plan Reviewer must be in a Quality Assurance role independent of the responsible charge engineer who developed or sealed the ESC or SWM Plans. Before implementing any ESC or post construction SWM measures not included in VDOT's approved ESC and SWM Standards and Specifications, a variance or exception respectively must be requested and obtained through the County in accordance with *VDOT's Drainage Manual*, IIM-LD-195, and IIM-LD-251.

The Project requires coverage under the VPDES General Construction Permit for the Discharges from Construction Activities (VPDES Construction Permit). The Proposer shall complete and submit the ESC and SWM Plan Certification form (LD-445C) to the County. The Proposer shall provide the County a pdf of the final ESC Plan and Narrative, P2 Plan and post construction SWM Plan incorporating all calculations, analysis, documentation, and evaluations required. The ESC Narrative shall specifically include calculations (with supporting data) documenting that the design meets the water quantity requirements for downstream channel protection and flood protection utilizing the Article 2 and Article 3 of Part 5 in the ESC Law and Regulations, and the VSMA and VSMP Regulation, as appropriate, for each location where stormwater is discharged from the Project site.

The Proposer shall be responsible for all fees necessary for coverage under the VPDES General Construction Permit. The Proposer shall be responsible for acquiring VPDES Construction General Permit coverage and letter directly from VA DEQ.

The Proposer shall also complete the applicable sections of the VPDES Construction Permit Registration Statement per VA DEQ format, VPDES Construction Permit Contact Information (LD-445A). These forms shall be submitted to the County. The County will review the submitted information and, if complete and acceptable, process a request for release of construction work in accordance with the County's guidelines as outlined in the latest version of IIM-LD-242. If any information submitted by the Proposer is found to be incomplete or unacceptable, the assembly will be returned to the Proposer for corrective action and resubmission.

A working conceptual ESC and conceptual SWM Plan, with preliminary calculations and pollutant removal requirements, and SWPPP for the entire Project must be submitted for review and approval with the initial application for permit coverage. This initial conceptual plan submittal shall include the proposed total expected Land Disturbance Area and Land Development Area, including any off-site facilities, for the entire Project. Where the Project will be constructed in segments, the Proposer shall submit a finalized ESC Plan, a post construction SWM Plan and a P2 Plan, including the expected Land Disturbance Area, for the proposed initial work segment in addition to the conceptual plan for the entire Project.

It is expected that the individual work segment submittals will be self-sustaining and not incur a deficit in post construction SWM design conditions requiring mitigation on future work segments. Subsequent work segment submittals shall include required modifications to the Land Disturbance Area value. However, these modifications, in total, shall not exceed the initially submitted Land Development Area value. The Proposer shall not proceed with work to be covered by the permit until permit coverage is secured and the County releases the work in writing. It is noted that release of work, can take up to ninety (90) days from the time that the Proposer submits a request for coverage that includes all required information. This represents a Hold Point in the Proposer's CPM Schedule.

The Proposer shall provide a completed SWPPP Certification form (LD-455E) before commencement of any land disturbing activity and shall complete and include the SWPPP General Information Sheets in the plan assembly in accordance with the *VDOT Drainage Manual*. The SWPPP Certification form (LD-455E) and SWPPP General Information Sheets shall be updated with each work segment submittal as necessary.

The Proposer shall be responsible for compliance with construction-related permit conditions and shall assume all obligations and costs incurred by complying with the terms and conditions of the permit. Any fines associated with permit or regulatory violations shall be the responsibility of the Proposer. Upon completion

of the entire regulated land disturbing activity (including final stabilization of all disturbed areas), the Proposer shall provide updated/revised Permanent Best Management Practice (BMP) information in Section VI of the SWPPP General Information Sheets for each post construction BMP placed into service on the Project, complete the VPDES Construction Permit Termination Notice form and submit both documents (without signature) to the County Project Manager for processing. The Proposer shall also have on-site during any land disturbing operations an individual or individuals holding a VDEQ Inspector Certification, a VDEQ Responsible Land Disturber (RLD) Certification and a VDOT Erosion and Sediment Control Contractor Certification (ESCCC) to ensure compliance with all VDEQ and County erosion and sediment control plan implementation requirements. It shall be the responsibility of the Proposer's certified ESCCC representative and the Proposer's VDEQ certified ESC Inspector to monitor Project compliance with the approved SWPPP and the construction general permit. The Proposer's VDEQ certified ESC Inspector must represent the Quality Assurance firm for the Project. The inspections carried out by the Proposer's certified ESCCC representative and the Proposer's VDEQ certified ESC Inspector shall be in accordance with the Minimum Requirements for Quality Assurance and Quality Control on Design-Build Projects and Public-Private Transportation Act Projects manual and Part 5 Section 107.16(e) as amended in Exhibit 1 to Parts 3, 4 and 5. The inspections shall be documented and certified by both the Proposer's ESCCC representative and the Proposer's VDEQ certified ESC Inspector on the Construction Runoff Control Inspection Form (C-107Part I).

3.5.6 Post-Construction Stormwater Management Facilities

The Proposer shall be responsible for the design and construction of stormwater management facilities as required for the Project in accordance with the Article 3 of Part V technical criteria of the Virginia Stormwater Management Program Law and Regulations (i.e., Runoff Reduction Method, Energy Balance Equation, etc.), the latest version of IIM-LD-195, and the other standards and reference documents listed in Attachment 1.2 including the Virginia Stormwater Management Program Law and Regulations. The County has identified potential locations for post construction stormwater management facilities as part of the RFP Conceptual Plans. However, these locations are preliminary and have not been fully evaluated to determine if these locations are suitable, feasible or sufficient to address all of the stormwater management requirements of the project. The Proposer, as part of their final design, shall evaluate these locations, and if found acceptable, develop a final post construction stormwater management plan. The Proposer shall make reasonable efforts to locate stormwater management facilities within VDOT ROW and to minimize impacts to surrounding communities.

If any of the locations are found to be unacceptable, the Proposer must identify other acceptable location(s) to meet the post-construction stormwater management requirements of the Project. The Proposer is to ensure proper ingress and egress to any stormwater management facility and specific proprietary facilities have proper

maintenance details included in the as-built plans. Stormwater Management access roads shall be designed using AutoTurn to accommodate an AASHTO 2011 (US) Motor Home and Boat Trailer (MH/B) design vehicle and provide adequate space for the design vehicle to park outside the clear zone, unload and turn around to exit the stormwater management facility without having to back up onto the mainline travel lane or shoulder. The minimum surfaced width shall be 12-feet. The minimum graded width shall be 16-feet. Cut ditches shall be required in cut sections. Any access road with a grade exceeding 10-percent shall be paved. All access roads shall meet intersection sight distance requirements for the design speed. All access roads are required to have a locked metal gate in accordance with VDOT Standard FE-G. Two (2) keys to the lock shall be furnished to the County upon completion of the Project. All stormwater management facilities shall be encompassed with black vinyl coated fence in accordance with the VDOT Standard FE-CL.

The Proposer, as part of their final design, shall minimize impacts to existing tree space to provide a buffer between proposed SWM facilities and adjacent properties. If the Proposer elects to use off-site treatment through participation in a local watershed comprehensive stormwater management plan, coordination between the Proposer and Albemarle County will be facilitated through the County. The Proposer shall verify feasibility of use of existing or proposed regional facilities with applicable localities and shall be responsible for all cost, schedule impacts, and legal implications thereof.

The use of Manufactured Treatment Devices (or equivalent tree box) shall be excluded from use in clear zone areas or areas where driver sight distance may potentially be obstructed.

The use of Rooftop Disconnects, Vegetated Roofs, Rainwater Harvesting, and Permeable Pavement (Virginia DEQ Stormwater Design Specification Nos. 1, 5, 6 & 7 of the Virginia Stormwater BMP Clearinghouse) shall be excluded from use on this Project.

Upon completing construction of the stormwater management best management practice (BMP) facilities included on this Project, the Proposer shall provide a certification by a licensed professional engineer or land surveyor, that the facility and its appurtenances have been constructed in accordance with the plans and specifications. The certification shall minimally include all information required in the Special Provision for Construction Record Documentation of Permanent Stormwater Management Facilities (SP105-DB1000-01) included in the RFP Information Package.

Each BMP facility will require a separate BMP Certification to be submitted, reviewed, and approved by Albemarle County Department of Community Development. A minimum of two (2) benchmarks shall be provided for each BMP in the form of a Commonwealth of Virginia Survey Control Mark 3.25" aluminum

disc mounted on top of a #5 bar set in concrete).

The Proposer may elect to purchase nutrient credits to meet the post-construction water quality requirements for the Project. The applicability requirements of VDOT IIM-LD-251 shall be met if nutrient credits are to be utilized. It is the responsibility of the Proposer to investigate the availability of nutrient credits and as such their purchase shall be at their risk. All costs associated with the purchase of nutrient credits shall be included in the Proposer's price proposal. The use of nutrient credits shall be identified in the Proposer's SWPPP. Where the Proposer elects to purchase nutrient credits, the Proposer shall complete Attachment 3.5, the Nutrient Credit Assignment Agreement and shall submit the agreement to the County for execution. The agreement is to be used for the transfer of the ownership of additional nutrient credits from the purchaser to the County. The agreement is to be completed with the appropriate project specific information and a copy of the bill of sale between the Nutrient Credit Bank and the purchaser is to be attached to the Agreement. A copy of the executed agreement is to be included with the BMP information submitted with the VPDES Construction Permit Termination form LD-445D.

The Proposers post-construction stormwater management plan shall appropriately be encompassed within right-of-way (County's preferred) or a permanent SWM easement in accordance with County standards and requirements. If a post-construction stormwater management BMP is situated within existing or proposed right-of-way shall be limited to treating and capturing run-off from the public right-of-way. VDOT will not accept or maintain a post-construction stormwater management BMP that treats or accepts both public and private run-off. If the Developer's post-construction stormwater management plan involves BMPs that accept both public and private run-off the BMP and access road shall be wholly contained within a SWM easement and agreement in accordance with County requirements and standards.

3.5.7 Other Drainage Requirements

All drainage facilities (existing and newly constructed) located within the Project limits that are disturbed or extended as a part of the project and are functional elements of the final design shall be rendered in a serviceable condition, free from debris and physical obstructions. Accumulated debris resulting from project construction activities shall be removed by the Proposer, as such maintaining the original line and grade, hydraulic capacity or construction of the facility prior to Project Completion.

An assessment of the serviceable condition (cleanness) of the existing drainage structures located within the Project limits should be conducted prior to the commencement of any land disturbing activities by the Proposer and provided to the County Project Manager. The Proposer shall be responsible for cleaning the existing drainage facilities that the Proposer intends to tie into or otherwise impact, the degree of impact notwithstanding. The Proposer shall not be responsible for cleaning

existing drainage facilities that will be maintained by VDOT and is not impacted by the Proposer.

The Proposer shall be responsible for maintaining the new and any existing stormwater management BMPs that are impacted by the Project during construction per the County, VA DEQ, and manufacturer's (for proprietary products) maintenance guidelines until Final Project Acceptance by the County.

358 Scour

The Proposer shall be required to conduct scour analysis in accordance to FHWA, "Evaluating Scour at Bridges – HEC 18 (current version)," and "Bridge Scour and Stream Instability Countermeasures – HEC 23 (current version)." Other procedures can also be considered during the scour evaluation upon prior approval by the County. The County may, in its sole discretion, accept or reject such proposed procedures.

All aspects related to scour elevations (including, but not limited to, shoring modifications, impacts to the maintenance of traffic, and utility conflicts) shall be included in the proposed price. All scour elevation shall be approved by the County. The Proposer shall be responsible for the final design and construction of the foundations for this Project, including the final Hydrologic and Hydraulic Analysis and the final Scour Analysis, in accordance with the Agreement.

359 Pipe Installation Methods

Culverts or utility pipes shall be installed by conventional methods, micro-tunneling operation, or jack and bore in accordance with the VDOT Road and Bridge Specifications and the applicable special provisions in Attachment 1.2.

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

applicable.

3.6 Roadway Design

3.6.1 General Requirements

The Proposer will prepare the final geometric design of the roadway elements in accordance with the standards and specifications set forth in Attachment 1.2. The specific design criteria for the Project shall be submitted to the County for review and approval, as required in Attachment 1.4. Functional classifications for roadways and design speeds are provided in Attachment 1.4. As a basis for the specific design criteria to be submitted by the Proposer. The specific design criteria shall follow the standards and specifications set forth in Attachment 1.2 unless a design exception or design waiver is approved.

The Project design speeds for all facilities shall meet or exceed the minimum design speeds as shown in Attachment 1.4. The existing posted speeds are to remain the same on all existing facilities.

3.6.2 Proposer Responsibility

The Proposer is responsible for the design of the Project and the Proposer will furnish the design of the Project, regardless of the fact that the RFP Conceptual Plans has been provided to the Proposer as a preliminary basis for Proposer's design. The Proposer specifically acknowledges and agrees that:

1. Proposer is not entitled to rely on 1) the RFP Conceptual Plans, 2) the Reference Documents, or 3) any other documents or information provided by the County, except as permitted in the Agreement.
2. Proposer is responsible for verifying all calculations contained in the RFP Conceptual Plans or otherwise provided by the County.

3.6.3 Conceptual Design

The Proposer must obtain the County's prior written approval to deviate from the RFP Conceptual Plans unless the proposed Deviation and all required ROW and easements is 1) within Roadway Inclusion Zone; 2) meets the requirements of the Technical Requirements; 3) requires no significantly different environmental approval; and 4) does not constitute a Design Exception or Design Waiver. The Proposer acknowledges and agrees that the requirements and constraints set forth in the Agreement and in the Governmental Approvals, as well as site conditions, will impact the Proposer's ability to revise the concepts contained in the RFP Conceptual Plans, in addition to the requirement to obtain approval. Notwithstanding anything to the contrary herein, if the Proposer fails to obtain a required third party approval, the Proposer will be required to comply with the

original requirements of the RFP without additional cost or extension of time as set forth in the Agreement.

3.64 Disclaimer

The Proposer understands and agrees that the County shall not be responsible or liable in any respect for any Losses whatsoever suffered by any Proposer by reason of any use of any information contained in the RFP Conceptual Plans or Technical Requirements. The Proposer further acknowledges and agrees that 1) if and to the extent the Proposer or anyone on the Proposer's behalf uses any of said information in any way, such use is made on the basis that the Proposer, not the County, has approved and is responsible for said information, and 2) the Proposer is capable of conducting and obligated hereunder to conduct any and all studies, analyses and investigations as it deems advisable to verify or supplement said information, and that any use of said information is entirely at the Proposer's own risk and at its own discretion.

The County does not represent or warrant that the information contained in the RFP Conceptual Plans or Technical Requirements is either complete or accurate—including with respect to 1) the existence or need for bridges; 2) bridge lengths, locations, and types depicted in the RFP Conceptual Plans; 3) the existence or need for retaining walls; 4) retaining wall heights, lengths, or sizes depicted in the RFP Conceptual Plans; or 5) any failure or omission to depict any of the foregoing in the RFP Conceptual Plans—or that such information is in conformity with the requirements of the County provided approvals or other Agreement. The County does not represent or warrant the accuracy or completeness of any itemized list set forth in the Technical Requirements. The foregoing shall in no way affect the County's liability for necessary basic configuration changes as specified herein.

3.7 Pavement

Pavements shall be designed and constructed to meet or exceed the minimum pavement section requirements set forth in Attachment 1.5. Any changes to the specified minimum pavement sections or location for the pavement sections shown on the RFP Conceptual Plans require approval by the County. The Proposer shall be responsible for the final design and construction of the pavements for this Project. Pavement design and construction shall meet the requirements of the federal pavement policy, 23 CFR 626 (Chapter 1).

3.7.1 General

All widening of the existing pavements shall be accomplished in accordance with Standard WP-2 so that the proposed widening pavement layers match the existing pavement layers in types and thicknesses. Prior to building up or placing the surface course, all existing pavement shall be saw-cut to a smooth vertical face a minimum of one foot inside the existing edge of full-strength pavement in all widening areas. Widening of existing pavement shall provide for lateral drainage of

the existing pavement layers by providing a free-draining aggregate (such as 21B) on the low side of the pavement cross-slope connected to a standard UD-4 edgedrain placed beneath the outside edge of the paved shoulder. All open-graded drainage layer (OGDL) shall be connected to a standard UD-4 edgedrain on the low side of the pavement cross slope. Where barriers are proposed, the paved shoulder shall be paved up to the proposed barrier in accordance with VDOT standard detail GR-INS. An impervious base/subbase (such as CTA) shall be provided for widening on the high side of existing pavement cross-slopes. The following note shall be added to the construction plans: The County shall be notified as soon as the pavement saw-cuts are complete but no less than 48 hours prior to subbase/base placement in the widening areas.” All existing pavement shall be milled to a depth of 2 inches and resurfaced up to the nearest longitudinal lane divide wherever pavement markings will be eradicated, or snow plowable raised pavement markers are removed.

VDOT guidelines specify that edgedrains and underdrains be provided for pavement with daily traffic volumes in excess of 1,000 vehicles per day. Therefore, edgedrains and underdrains will be required for all pavements on this project.

Approach slabs for all bridges shall be full width from face to face of barrier or parapet (including extending under sidewalks and shared use paths).

Proposer’s plans, typical sections, profiles and cross-sections shall include the appropriate elements identified as a result of the drainage analysis/design and the pavement design. This shall include, but is not limited to, underdrains, stormwater inlets and pipes, and pavement sections reflecting the elements identified in the Proposer’s final pavement design.

The area surrounding pavements shall be graded to direct surface water away from paved areas. Any utility excavations or excavations for storm drains within pavement areas shall be backfilled with compacted structural fill in accordance with applicable sections of the Road and Bridge specifications and applicable special provisions.

No cuts shall be allowed after the surface course asphalt lift has been applied.

The Proposer shall submit to the County for its review, thirty (30) days before the submittal of associated final Design Documentation, a pavement design report that documents the assumptions, considerations, and decisions contributing to the Proposer’s proposed pavement design, including the following:

1. Pavement design details, including structural layer materials, general specifications, and thicknesses
2. Relevant pavement evaluation data (structural and functional) and condition information on adjacent roads

3. Relevant geotechnical data and drainage requirements to verify the pavement design(s)
4. Design criteria used in determining the pavement design(s), including annual average daily traffic, percentage heavy vehicles, cumulative traffic loading, pavement material strength factors, and pavement design life
5. Design calculations documenting the pavement design(s) in accordance with the specified design methodology

3.8 Traffic Engineering

381 General

The Proposer shall provide plans for all traffic control devices. Transition from new markings, markers, and delineators to existing shall be planned such that road users will discern only a minimum change in delineation concept. Design Documentation for the County's review and approval for traffic control devices shall be submitted as a complete package for each construction submittal. All new and existing traffic control devices within the Project limits and those signs outside the Project limits shall be installed, modified, or replaced in accordance with the standards and specifications set forth in Attachment 1.2.

All traffic control devices shall be designed and installed to comply with the standards and specifications set forth in Attachment 1.2 and the requirements of the maintaining agency.

The Proposer shall be responsible for the design and construction of the Project signing, markers, and pavement markings. Traffic control devices shall include:

1. All signs, pavement markings, pavement markers, and delineators necessary within the Project limits
2. Signs outside the Project limits that are necessary to lead traffic to and transition traffic away from the Project

All existing traffic control devices impacted by the Project shall be modified, upgraded, or replaced by the Proposer to meet current VDOT standards.

382 Pavement Markings

The Proposer shall provide and maintain pavement markings and reflective pavement markers meeting the standards and specifications set forth in Attachment 1.2.

On any pavement reconstruction undertaken by the Proposer, the Proposer shall tie in and match the existing permanent pavement marking systems.

Pavement markers shall be used to supplement pavement markings on affected roadways where required by the Virginia Supplement to the MUTCD. All permanent pavement markers shall be installed in accordance with VDOT standards. Damaged or removed existing pavement markers within the Project limits shall be replaced in accordance with VDOT standards.

383 Signs

The Proposer shall provide and maintain pavement markings and reflective pavement markers meeting the standards and specifications set forth in Attachment 1.2.

3.9 Barriers, Guardrails, and Fences

391 Barriers and Guardrails

The Proposer shall ensure that the clear zone within the Project limits is free from hazards and fixed objects. In the event that removal or relocation of hazard and fixed objects from the clear zone is not feasible, the Proposer shall design and install an approved guardrail or barrier system and end treatments, where appropriate, for protection in accordance with VDOT Provisionally Approved MASH Products list and comply with multiple standards in the Road & Bridge Standards Section 500. The same clear zone requirement applies to existing conditions affected by this Project where guardrail upgrade will be required. Existing sub-standard guardrail within the Project Limits must be upgraded by the Proposer to meet current standards per the *VDOT Road Design Manual*, Appendix I. This may require the upgrade of guardrail to the nearest logical termination point beyond the current Project limits.

392 Fences

The Proposer shall be responsible for securing the Work and providing all temporary fencing necessary to ensure the safety of the work force and members of the public.

Except for temporary fencing, all chain link fabric, posts, rails and other associated hardware for fences, including these items on permanent structures, shall be black vinyl-coated and the details for fences shall be in accordance with the standards in Attachment 1.2.

3.10 Aesthetics

3.10.1 General

The Proposer shall develop an Aesthetic Plan in accordance with the standards and specifications set forth in Attachment 1.2. The Proposer shall provide the recommended

Aesthetic Plan to the County for review and approval.

3.102 Specific Requirements

Bridge Parapet / Railing

Architectural treatment shall be considered on the inside and outside of the bridge parapet / railing and the terminal walls on the approach slabs. Architectural treatment details shall be in accordance with the requirements of the *Manual of the Structure and Bridge Division – Part 2 Chapter 5*.

3.11 Landscaping

3.11.1 General

The Proposer shall be responsible for watering, weeding, and maintaining the landscaping for a period of three growing seasons after the project is accepted by the County.

Landscape plans shall be prepared by a Virginia Certified Landscape Architect and shall be submitted to the County for review and approval. The plans shall be prepared in a format consistent with VDOT standards for landscape plans.

All plant materials shall be indigenous to the area and be able to adapt and survive in roadside environments, as appropriate. The Proposer may choose from the species of allowable plant materials on the RFP Conceptual Plans. Trees selected shall limit their caliper/trunk growth to inches in diameter.

The Proposer shall minimally provide the plantings as generally depicted and called out on the RFP Conceptual Plans.

3.12 Sidewalks and Bicycle Lanes

3.12.1 General

The Proposer shall design and construct the Project to include proposed pedestrian and bicycle facilities within the Project Limits, as identified in the RFP Conceptual Plans.

Existing pedestrian and bicycle access on facilities shall be maintained to the maximum extent possible throughout construction as per the MUTCD and the *Virginia Work Area Protection Manual*. Any temporary pedestrian or bicycle facility closure request shall be submitted in writing twenty-one (21) days in advance to the County for review and approval. Advance notification of closures shall be provided to the public similar to scheduled roadway closures.

New bicycle and pedestrian path facilities and modifications to existing bicycle and pedestrian path facilities shall be designed in accordance with the standards and specifications set forth in Attachment 1.2.

Concrete and asphalt pavement designs for sidewalks and shared use paths shall be in accordance with Attachment 1.5.

Where possible, utility manholes should be located outside of any pedestrian areas (sidewalks, paths, etc.). Where manholes are located within a sidewalk the manhole covers must be ADA compliant.

3.13 Structures and Bridges

The Project includes the following bridges:

BRIDGE JOB	BRIDGE DESCRIPTION	Bridge Plan Number
B601	Lickinghole Creek Crossing	TBD

3.13.1 General

The Project includes construction of one new bridge at the Lickinghole Creek Crossing. The proposed bridge is to be designed to meet the minimum width provided on the bridge typical section provided in the RFP Conceptual Plans to include 2 – 11' travel lanes, 2 – 7' bike lanes and 2 – 6'-6" sidewalks. The bridge is required to meet the minimum hydraulic opening requirements as specified in Section 3.5.9. (Hydrologic and Hydraulic Analysis (H&HA)). Proposer's selected structure over Lickinghole Creek shall provide a wildlife corridor envelop with minimum dimensions of 23ft wide by 13ft tall.

The conceptual design contained in the RFP Information Package for the Lickinghole Creek Crossing reflects a basic roadway & bridge concept with proposed line, grade, typical section, structural transverse section, and proposed ROW. These elements for Lickinghole Creek are considered to be the basic Project configuration and are conceptual in nature. The Proposer is responsible for final design in accordance with the Contract Documents.

The Proposer will be required to prepare Preliminary (Stage I) Plans for Lickinghole Creek Crossing including a preliminary type, size and location plans, proposed stages of construction (if applicable) and a Stage I Bridge Report Summary Form. Preliminary (Stage I) Plans shall be submitted by the Proposer to Albemarle County for review and approval prior to proceeding with final design. Bridge type and layout shall be based on reducing long-term maintenance costs for VDOT. Detailed erection plans shall be included with the final design plan submittal. The erection plan for the bridge shall be signed and sealed by a licensed Professional Engineer in the Commonwealth of Virginia.

The bridge for this Project shall be designed in accordance with the documents listed in Attachment 1.2.

The Proposer is prohibited from any deviation of VDOT's bridge standards without allowance granted in this document or prior written approval from Albemarle County. VDOT's Standard Details, including VDOT Design Aids, are available from the VDOT website at <https://www.vdot.virginia.gov/doing-business/technical-guidance-and-support/technical-guidance-documents/manual-of-the-structure-and-bridge-division/>. These standards, design aids, and typical details shall be used by the Proposer to the maximum extent possible in the development of the plans. Future wearing surface loads and construction tolerance loads shall be utilized in accordance with IIM-S&B-80.

The proposed structure shall utilize low permeability concrete in accordance with the 2020 VDOT Road and Bridge Specifications.

All reinforcing steel shall be deformed and shall conform to ASTM A615, Grade 60 except for reinforcing steels noted as CRR (corrosion resistant reinforcement). The proposed structure shall utilize CRR in accordance with IIM-S&B-81. Neither epoxy coated nor galvanized reinforcing steel shall be used.

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

Plan Submittal shall be in accordance with IIM-S&B-19.10 as a Tier 1 Bridge Project. Details provided in technical proposals are not Preliminary Plans. Preliminary Plans and a completed Stage I Bridge Report Summary Form (and all other subsequent bridge plan submittals) shall be submitted to Albemarle County after award for approval in accordance with the IIM. The Stage I Report shall be developed using the latest report template which is available upon request from VDOT's Structure and Bridge Division.

3.13.2 Superstructure

Bridge superstructure type and layout shall be based on reducing long-term maintenance costs for VDOT. The use of continuous span units and jointless bridge design technologies shall be used as outlined in the *VDOT Manual of the Structure and Bridge Division – Part 2 Chapter 17*.

Joints in bridges may be used only with specific written approval of the VDOT State Structure and Bridge Engineer through a design waiver.

No timber bridge elements of any kind will be acceptable in the proposed structure.

No fracture critical bridge elements of any kind will be acceptable in the proposed structure without specific written approval of the VDOT State Structure and

Bridge Engineer through a design waiver.

While the RFP Conceptual Plans depict prestressed concrete beams, the Proposer may elect either prestressed concrete beams or structural steel girders. The superstructure shall be designed as composite with the cast-in-place deck.

For structural steel girders alternatives, the material shall be weathering steel if the conditions meet the requirements of the FHWA Technical Advisory T5140.22, “Uncoated Weathering Steel Structures” and Chapter 11 of the *VDOT Manual of the Structure and Bridge Division, Part 2 Design Aids and Typical Details*. The yield strength of steel shall be 50 ksi. The use of high-performance steel (HPS) with yield strength of seventy (70) and one hundred (100) ksi will not be permitted. All the requirements in the FHWA Technical Advisory T5140.22, “Uncoated Weathering Steel Structures” indicated as “should” shall be replaced with “shall”.

Longitudinal stiffeners shall not be used. Other fatigue prone details shall not be used. No field welding to structural steel members, primary or secondary, shall be permitted except as allowed by the 2020 VDOT Road and Bridge Specifications. Only two (2) bolted field splices per span shall be permitted.

Steel box pier caps and steel box girders shall NOT be used for any of the structures.

For prestressed concrete alternatives, the precast concrete Bulb-T sections adopted by VDOT shall be used. Concrete strengths for prestressed concrete beams shall have a minimum 28 day compressive strength of 5,000 psi. Concrete strengths in excess of 8,000 psi will not be permitted.

Segmental construction of any kind (post tensioned box beams, segmental precast and/or balanced cantilever construction) is prohibited. Post tensioning of concrete is not allowed.

The use of asphalt overlays on concrete bridge decks shall not be permitted.

The use of prestressed deck panels as stay-in-place forms shall not be permitted.

3.13.3 Substructure

When spread footings are proposed, the Proposer shall conform to Section 401 of the *2020 VDOT Road and Bridge Specifications, Structure Excavation*. All pier spread footings shall be embedded into non-scourable material. The Proposer shall ensure that all recommendations related to the suitability of foundation material for spread footings at the time of construction are made in the field by the Proposer’s geotechnical engineer registered and licensed in the Commonwealth of Virginia. All other foundation elements (piles, drilled shafts, etc.) shall be extended to bear on non-scourable material. Foundation recommendations for the proposed bridge shall be submitted for review and approval prior to the submittal

of final foundation construction plans. This submittal shall be made at least ninety **(90) days in advance** of the submittal of any final design/construction documents that are dependent upon the geotechnical evaluations and recommendations.

When drilled shafts are proposed, the Proposer shall refer to the Special Provision for Drilled Shafts referenced in Attachment 1.2 for design and construction requirements.

The use of steel pile bents shall not be permitted.

The proposed structure shall be designed to meet all applicable hydraulic requirements, including current FEMA and VDOT guidelines as described in *VDOT's Drainage Manual* and the unique, project specific hydraulic requirements described in Section 3.5.9. The Proposer shall deliver to Albemarle County a final Hydrologic and Hydraulic Analysis and a final Scour Analysis for the proposed bridge design as outlined in Section 3.5.9 for Lickinghole Creek. These analyses shall be submitted to Albemarle County for review and approval prior to the commencement of bridge construction.

All foundation elements for Lickinghole shall be designed for scour in accordance with AASHTO LRFD Bridge Design Specifications Section 2.6.4.4.2, Chapter 12 of the *VDOT Drainage Manual*, and where applicable, AASHTO LRFD Bridge Design Specifications Section 10.4.6.6.

Areas around bearing seats shall be designed to permit jacking and replacement of bearings. The design forces for jacking shall not be less than 1.3 times the permanent load reaction at the bearing, adjacent to the point of jacking.

Steel sheet piles shall not be allowed for use as abutments or wingwalls.

3.13.4 Plan Submission

The Proposer shall, at a minimum, make two (2) bridge plan submissions for Albemarle County review and approval; 1) Preliminary Plan (Stage I) Submission and 2) Final Plan (Stage II) Submission.

1. **Preliminary Plan Submission for Lickinghole Creek.** The Proposer shall submit a preliminary plan for the new bridge documenting how the structure geometrics were determined. The preliminary plan submittal shall include:
 - i. A plan view developed section along bridge centerline/construction baseline, a transverse section, abutment section, and pier elevation and section. Refer to the *VDOT Manual of the Structure and Bridge Division – Part 2*.
 - ii. Completed Stage I Bridge Report Summary Form; The preliminary Geotechnical Engineering Report (GER) is required with the Stage I submission; see RFP Information Package for the Stage I Bridge Report

Summary Form for sample form.

- iii. Copies of design exceptions and waivers that influence the design of the structure or roadway approaches will include a write up on how the design exceptions and design waivers affect the bridge.

Preliminary plans must be submitted to and approved by Albemarle County prior to any final bridge design submittal. Albemarle County will not review any final design submittals until the preliminary plan has been approved. The commencement of the final design prior to the approval of the preliminary plan submittal by Albemarle will be done solely at the risk of the Proposer.

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

2. **Final Plan (Stage II) Submission for Lickinghole Creek**

The Proposer shall submit final plans for the new bridge. The final plans will be assembled according to the procedures and guidelines presented in the *VDOT Manual of the Structure and Bridge Division – Part 2*.

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

The Proposer shall include estimated quantities on the plans as outlined in the *VDOT Manual of the Structure and Bridge Division - Part 2, Chapter 3*.

Final design calculations and construction drawings shall be signed and sealed by the Proposer's structural engineer in accordance with the *VDOT Manual of the Structure and Bridge Division - Part 2, Chapter 1 Section 16*.

A final, As-Designed, load rating analysis is required to be submitted per IIM-S&B-86.

3.13.5 Structure Load Ratings

The following structure load ratings analyses and reports shall be required and shall be performed in accordance with the requirements of the current version of IIM-S&B-86, Load Rating and Posting of Structures (Bridges and Culverts):

A load rating is required when a newly constructed structure or any phased portion of a newly constructed structure is intended to carry traffic in a temporary

configuration.

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

No partial or completed structure shall be placed into service if a Load Restriction (Posting) is required based upon the load rating analyses. The Proposer is responsible for all remedial measures/corrective action required to provide Albemarle County a structure which satisfies the load rating requirements outlined in the current version of IIM-S&B-86, Load Rating and Posting of Structures (Bridges and Culverts).

3.13.6 Working Drawings

The Proposer's Engineer of Record shall review and approve working/shop drawings and submit to Albemarle County.

Reference should be made to Article 105.10 of Part 5 of the RFP for working/shop drawings. The working/shop drawings shall be approved by a registered, licensed, Professional Engineer in the Commonwealth of Virginia. Details not included in the Approved for Construction (AFC) plans shall be reviewed and responded to by the County prior to incorporating in working drawings. This shall be required for, but not limited to, all structures such as MSE walls, other specialty retaining structures (tieback, soil nail, etc.), and other ancillary structures.

3.13.7 Safety and Acceptance Inspection for the Proposed Structures

Acceptance of the bridge structure will require the following inspections by the Proposer documented and submitted to Albemarle County in accordance with applicable VDOT standards and policies:

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

A satisfactory final construction inspection is required prior to Final Acceptance of the Project.

For both inspections the Proposer shall employ an independent design/inspection

firm that is different from the Engineer of Record, the Quality Control Firm, and the Quality Assurance Manager to conduct and document both inspections and will coordinate with VDOT District Structure & Bridge Engineer prior to inspections. The inspection staff conducting the inspection shall be NBIS certified.

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

3.13.8 Retaining Walls

Retaining wall structures shall be designed in accordance with the following requirements and as specified elsewhere in the Technical Requirements:

1. Retaining walls shall be designed in accordance with County Code Chapter 18 – Zoning; Section 4.3.3., VDOT and AASHTO LRFD specifications and requirements.
2. Retaining walls shall be analyzed or designed for all additional loads imposed by sign structures or other structures.
3. Only retaining walls for which FHWA has developed guidelines will be permitted for the Project.
4. Only retaining walls presenting an essentially vertical concrete face shall be used. Walls with vegetated and/or sloping faces shall not be used for the Project.
5. All components of the retaining walls shall be contained within VDOT’s right of way.
6. Only mechanically stabilized earth (MSE) walls from VDOT’s Approved Retaining Wall System List shall be allowed, except as noted above and as noted on the list.
7. The use of MSE walls shall not be permitted within the floodplain
8. MSE walls that require traffic protection at the top shall utilize barriers or railings on moment slabs.
9. Parapets located on top of MSE walls shall utilize low permeability concrete in accordance with the 2020 VDOT Road and Bridge Specifications.
10. Retaining walls shall have metal railing except where top of wall is located adjacent to a roadway shoulder in which case the concrete barrier shape shall be used. Metal railing shall conform to VDOT Standard HR-1, and shall be galvanized and grounded in accordance with VDOT Road and Bridge Specifications.
11. Steel sheet piles shall not be allowed for use as retaining walls.

3.13.9 Miscellaneous Requirements

The parapet and barrier walls on structures may be constructed using slip forming after the County review and approval of the trial section.

All temporary shoring and erection elements shall be dismantled and removed in their entirety following construction, unless otherwise approved by the County.

Sealer used in joints at sleeper pads shall be in accordance with the requirements of Section 420 of the Road and Bridge Specifications for Class II Joint Systems.

Drilled shaft for support of bridges and retaining structures shall be constructed in accordance with the requirements of VDOT Special Provision for Drilled Shafts Using Self-Consolidating Concrete for Design-Build and PPTA Contracts – April 15, 2013.

3.14 As-Built Documents

3.14.1 General

As a condition to Project Completion, the Proposer shall provide to the County, as-built plans of the Project in accordance with the standards and specifications set forth in Attachment 1.2, which shall consist of two hard-copy sets, one electronic file of each plan in *.pdf format, one electronic file of each plan, and one electronic file in MicroStation *.dgn format of the final construction plans. The as-built plans shall be prepared, signed and sealed by a Professional Engineer, or a Land Surveyor as applicable, licensed in Virginia and submitted to the County 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 as-built plans shall be in the same format as the construction plans. The as-built drawings and documents shall be certified by the Proposer's engineer of record to reflect the actual condition of Project at the end of the Work period and organized and indexed to facilitate easy retrieval of information.

The final plan milestone is Record (As-Built) Plans. See requirements identified in the Design-Build As-Built Guide provided in the RFP Information Package. 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 Professional Engineer responsible for As-Built Plans shall certify to the best of their knowledge that the plans represent the actual locations of all constructed elements.

3.14.2 Drainage

1. Upon completion of the installation of any major drainage structure (great than 36" in diameter) or 7 square feet in opening, the Proposer shall prepare a final as-built survey of the major drainage structure and related upstream and downstream appurtenances and provide such survey to the County. The as-built survey shall include the horizontal location and vertical elevations of the

constructed major drainage structure in sufficient detail to confirm pre-construction hydraulic performance. A post construction as-built Hydrologic and Hydraulic Analysis (H&HA) and report shall be developed based on the as-built survey and submitted to the County for review and acceptance. The post construction H&HA shall demonstrate that the anticipated post construction hydraulic performance of the major drainage structure matches or better than that of the pre-construction H&HA. If the post construction analysis shows an impact greater than the pre-construction H&HA or exceeds the construction tolerances established with the pre-construction H&HA, then the Proposer shall be responsible for mitigating the adverse impacts of the post construction condition at no additional cost to the County.

2. The Proposer is to ensure proper ingress and egress to any stormwater management facility and that any specific proprietary facilities have proper maintenance details included in the as-built plans.
3. The as-built survey shall include the following information:
 - i. Discharge structures – structure identification number, type, locations, dimensions and elevations of all weirs, bleeders, orifices, gates, pumps, pipes, and oil and grease skimmers
 - ii. Side bank and underdrain filters, or exfiltration trenches – locations, dimensions, and elevations, including clean-outs, pipes, connections to control structures and points of discharge to receiving waters
 - iii. Storage areas for treatment and attenuation – storage area identification number, dimensions, elevations, contours or cross-sections of all, sufficient to determine stage-storage relationships of the storage area and the permanent pool depth and volume below the control elevation for normally wet systems
 - iv. System grading – dimensions, elevations, contours, final grades or cross-sections to determine contributing drainage areas, flow directions and conveyance of runoff to the system discharge point(s)
 - v. Conveyance – dimensions, elevations, contours, final grades or cross-sections of systems used to divert off-site runoff around or through the new system
 - vi. Water levels – existing water elevation(s) and the date determined
 - vii. Benchmark(s) – location and description (minimum of one per major water control structure)
 - viii. Wetland mitigation or restoration areas (if any) – Show the plan view of all areas, depicting a spatial distribution of plantings conducted by zone

(if plantings are required by permit), with a list showing all species planted in each zone, numbers of each species, sizes, date(s) planted and identification of source of material; also provide the dimensions, elevations, contours and representative cross-sections depicting the construction

4. If Proposer prefers to abandon in place any existing drainage structures or culverts, approval must first be obtained from the County. All abandoned drainage structures and culverts shall be depicted on the as-built plans.

3.14.3 Stormwater Management

The Proposer shall provide as-built survey of all stormwater management facilities. The as-built survey shall be signed and sealed by a Licensed Professional Engineer or Land Surveyor registered in the Commonwealth of Virginia. If the post construction survey shows a deviation from County accepted design storage and discharge values, then the Proposer shall be responsible for mitigating the adverse impacts of the post construction condition at no additional cost to the County. Upon completing construction of the stormwater management best management practice (BMP) facilities included on this Project, the Proposer shall provide a certification by a licensed professional engineer or land surveyor, that the detention facility and its appurtenances have been constructed in accordance with the plans and specifications. The certification shall minimally include all information required in the Special Provision for Construction Record Documentation of Permanent Stormwater Management Facilities (SP105-DB1000-01) included in the RFP Information Package. Each BMP facility will require a separate County BMP Certification to be submitted, reviewed, and approved by the County. A minimum of two (2) benchmarks shall be provided for each BMP in the form of a Commonwealth of Virginia Survey Control Mark 3.25" aluminum disc mounted on top of a #5 bar set in concrete.

3.14.4 Utilities

The Proposer shall accurately show the final location of all utilities on the as-built plans for the Project. The Proposer will ensure the utility companies submit as-built plans upon completion of their relocation or adjustments.

3.15 Survey

The Proposer is advised that the field survey and utility data provided is not represented to be up to date and complete for purposes of design and construction of the Project. The Proposer's scope of work shall include verifying and updating all surveying and utility designation that is necessary to design and construct the Project in accordance with the *VDOT 2014 Survey Manual* less the flexibility on Proposer's choice of design software.

The survey was conducted using conventional survey and fixed wing mapping methods; air flight and data were collected within the tolerances defined in the *VDOT Survey Manual*

and the Virginia Map Accuracy Standards. Low level, high accuracy flight was not performed as part of the survey effort for this project.

All surveying work throughout the term of the Agreement shall be performed by the Proposer in accordance with the *VDOT's Survey Manual*.

3.15.1 Scope and Area

The fixed wing mapping and subsequent digital terrain model (DTM) surface includes approximately 113 acres covering the project area from north of the intersection of existing Eastern Avenue and Westhall Drive to the intersection of Rockfish Gap Turnpike and Cory Farms Road.. The survey as provided consists of the following attributes:

1. Vertical control (Based on NAVD88 (Geoid 2012B))
2. Horizontal control (Based on NAD83-2011) - project scale factor 1.000000000
3. Horizontal scale 1" = 25' with 1' contours having hard surfaces accuracy of +/- 0.25' vertically and 0.50' vertically on the ground surface.
4. Lickinghole Creek - Provided a 300' wide topographic survey of of creek area +/- 150' R & L of the proposal centerline alignment.)
5. Visible above ground utilities from aerial mapping (No Subsurface Utility Engineering)
6. Survey Closure is 1:21,280 (Horizontal) and Vertical Accuracy – 3rd Order

The survey efforts did not include ROW, property, Subsurface Utility Engineering (designation or record research), field truthing, hard surface pavement refinements or sanitary sewer/storm sewer as built.

The ground survey effort includes, but is not limited to the following:

1. Right of Entry notification shall be in accordance with Chapter 4 of the *VDOT Survey Manual*.
2. Field data verified and updated Planimetric locations
3. Property data and ROW research and compilation
4. Location of easements uncovered during deed research
5. Utilities - Location of below ground utilities and Subsurface Utility Engineering
6. Digital Terrain Model – complete in areas of fixed wing mapping, except

for those areas shown as obscured in the CAD files.

7. Wetland locations

The preliminary field survey and utility data provided in the RFP Information Package contain the general depiction of existing conditions which the Proposer is obligated to verify and finalize through survey before completing final design of the Project. The special accuracy of the preliminary survey is at a map scale of 1:600 and 1-foot contours, is .5 feet, with a vertical Class 1 limiting error of 0.0833. The Proposer shall be responsible for obtaining any survey data, including all right-of-entry and land use permits, locating and designating underground utilities, DTM, utility test holes, and obtaining other related data necessary for the design, ROW acquisition, limited access revisions, and construction of the Project. Additionally, the Proposer will be responsible for any update (property owner changes, subdivisions, etc.) that may occur; updates need to be reflected on the plans in order to acquire ROW and complete the final design. Any survey changes shall be verified and certified and submitted in final documentation.

The Proposer shall preserve all survey control monuments established by the County and will notify the County as soon as it is known that a monument is in a position that will interfere with new construction or with Proposer activities. The Proposer will be responsible for resetting or relocating any survey control damaged, destroyed, or located within the footprint of the final design construction limits. The control will be established by a land surveyor licensed in the Commonwealth of Virginia supporting computations submitted to the County.

The Proposer shall protect all construction benchmarks within the construction limits. Construction benchmarks shall be located not farther than 500 feet apart for the total length of the project. Construction benchmarks that are disturbed during construction operations shall be reestablished by the Proposer.

The Proposer shall also be responsible for the production of VDOT ROW sheets for any land transactions, which would include, but not be limited to the following: Fee Acquisitions, the establishment of temporary or permanent project related easements, total takes, and any land exchanges that may be negotiated by any entity.

All ROW sheets shall conform to the current standards set forth by the *VDOT Survey Manual* and the VDOT Survey CADD Standards. All sheets shall be signed and sealed by a Virginia Licensed Land Surveyor and at a minimum comply with the State's APELSCIDLA Board Rules and Regulations.

Prior to Project completion, the Proposer shall provide and set final VDOT RM-2 ROW monuments within the Project ROW. The Proposer shall depict the monuments on the ROW Plans in accordance with the *VDOT Survey Manual*.

Immediately after or within seven (7) days from receiving the County's request notice, provided the information exists, the Proposer shall make available to the

County electronic files of all survey data, for existing and new conditions and infrastructure.

3.15.2 Survey Control Data

1. Digital Terrain Model and Construction Cross-Sections: Compatible to the Virg current DTM format.
2. Borrow Pits: All borrow pit DTM's or cross-sections, originals and finals.
3. Horizontal and Vertical Control for Bridges: Certified plats, field notes, coordinates, and computations shall be furnished by the Proposer prior to the Proposer beginning work on these structures.
4. Pipes, Culverts, Ditches and Related Appurtenances: Existing, newly installed control and as-built survey data for existing and new pipes, culverts and ditches which at a minimum include horizontal and vertical controls, type, size, materials and inlet and outlet control, catch basins and manhole and other related infrastructure.
5. Road ROW: Existing, newly constructed and installed control and as-built survey data for ROW cross section showing roads, lane configuration, shoulders, access and egress ramps and connections, embankments, utilities, drainage and all infrastructure within the road ROW, and for areas where connecting roads and infrastructure are impacted by the Work. The survey interval shall not be farther than 100-foot intervals. The data prepared by the Proposer shall include coordinates, type, size, material and references.

Additional surveying work and supplemental layout work shall be performed by the Proposer as needed to successfully complete the work. All drawings, field notes, and computations from such survey work performed by the Proposer shall be submitted to the County as defined and approved in the Proposer's Project Development Plans.

Eastern Avenue Extension Volume II Technical Requirements

Attachment 1.1 Project Development Plans

Project Development Plans

General

1. The general requirements for Project Development Plans (PDPs) are noted in Section 1.3 of the Technical Requirements.
2. The PDPs shall be consistent with ISO principles (ISO 9001:2015 Quality Management Systems- Requirements; ISO 9004:2009 Managing for the Sustained Success of an Organization - A Quality Management Approach; ISO 9000:2015 Quality Management Systems- Fundamentals and Vocabulary; ISO:19011:2011 Guidelines for Auditing Management Systems; ISO 14001:2015 Environmental Management Systems- Specifications with Guidance for Use).
3. The PDPs shall comply with the requirements of the Agreement including the Technical Requirements, and shall ensure that when implemented, the Work covered by the Plans will comply with such requirements.
 - i. Be fully compliant with VDOT's *Minimum Requirements for Quality Assurance & Quality Control on Design-Build & Public-Private Transportation Act Projects – January 2012*

1.2 Design Quality Management Plan

1. The Design Quality Management Plan (DQMP) shall provide the organization, relationship and procedures that define clear lines of responsibility and well-defined approach for meeting Project requirements and innovation in design approach.
2. The Design Quality Management Plan shall be linked to the QMSP.
3. The Design Quality Management Plan shall define the design approach, flow charts and activities for the design of the Project and will address:
 - i. Be fully compliant with VDOT's *Minimum Requirements for Quality Assurance & Quality Control on Design-Build & Public-Private Transportation Act Projects – July 2018*
 - ii. The design organization, responsibilities and professional certification
 - iii. A drawing tier indicating organization and hierarchy of the Proposer's drawings
 - iv. The design basis (e.g. design criteria, design standards and specifications)
 - v. Design validation, ensuring that the intended design meets its intended use
 - vi. Stages where design reviews are conducted and design work is certified by appropriate design professionals, including Professional Engineers registered in the State
 - vii. Work zone and worker safety review during design
 - viii. Quality assurance and control (including subconsultants)
 - ix. The breakdown of the Project design into design packages

- x. The process the engineering consultants and subconsultants will use to design and seal each design package
- xi. Design control-design input reviews, output reviews and verifications (design checks and professional review and seals) to ensure requirements have been met
- xii. Design changes
- xiii. Internal and external audits
- xiv. Document management
- xv. Provide regularly updated quality records and a tracking record of all quality control, quality assurance and audit records and a log of items and how they have been addressed, such as conformance, non-conformance, corrective actions and preventative actions, and implementation of corrective and preventative actions
- xvi. The process by which the Proposer's team and the County will be involved in the design review process
- xvii. Reporting and documentation mechanism
- xviii. Linkage to other relevant PDPs and the QMSP
- xix. Certification of QA/QC.

1.3 Construction Quality Management Plan

1. The Construction Quality Management Plan will define the construction approach and activities for the construction of the Project and will address:
 - i. Be fully compliant with VDOT's Minimum Requirements for Quality Assurance & Quality Control on Design-Build & Public-Private Transportation Act Projects – July 2018
 - ii. The construction organization and responsibilities – including the contractors and subcontractors
 - iii. Roles and professional qualifications of persons responsible for various aspects of the project
 - iv. Outline of procedures and schedules
 - v. Sequence of construction activities
 - vi. Project permitting and coordination with the County and external agencies
 - vii. Safety during construction
 - viii. Site security and access
 - ix. Environmental management
 - x. Quality as outlined in the QMSP, specific to the construction phase
 - xi. The breakdown of the Project construction into construction areas/segments
 - xii. The general construction sequence

- xiii. Site temporary facilities and storage areas
- xiv. Field equipment and materials management
- xv. Coordination with other projects, stakeholders, and impact of permitting
- xvi. Compliance with the Agreement
- xvii. Reporting and documenting changes
- xviii. As-built documents
- xix. Reporting and documentation mechanism
- xx. The process for conducting all activities related to achieving Final Acceptance including the representative inspection and documentation verification steps of all parties
- xxi. Linkage to other relevant PDPs and the QMSP

1.4 Environmental Management Plan

1. The Proposer shall develop and implement a thorough approach to environmental management. The Proposer will procure a qualified environmental consultant to conduct/update the technical studies to support the Local Environmental Review Process (LERP) documentation process, as well as other regulatory approval processes.
2. The Environmental Management Plan shall include the procedure and the party responsible for obtaining the required third-party approvals, interface with third party agencies, and identifying and controlling the permit conditions to assure environmental compliance.
3. The Environmental Management Plan shall define the environmental activities required during the design and construction of the Project and shall address:
 - i. Compliance (monitoring, control, follow-up and audits) with applicable environmental law, regulations, etc.
 - ii. Erosion and sediment control plans, including monitoring and approach to erosion and sediment control
 - iii. Stormwater management plans
 - iv. Stormwater pollution prevention plans
 - v. Commitments for environmental impact avoidance, minimalization, and mitigation measures of protected resources/properties
 - vi. Identify environmental monitoring and recording methodology requirements
 - vii. On-going monitoring and compliance records tracking system
 - viii. Compatible with ISO 19011:2004 Guidelines for Quality and/or Environmental Management Systems Auditing; and ISO 14001:2004 Environmental Management Systems- Specifications with Guidance for Use
 - ix. Linkage to other relevant PDPs

4. The Proposer shall or shall cause to be maintained and updated an Environmental Management Plan that shall include:
 - i. Procedures and a contingency plan (emergency response plan) for reporting, immediate actions, and Remedial Actions to be taken in the event of a potential environmental permit violation, dump, discharge, or spill of Hazardous Substances, including, as required by Law, the development and implementation of a Spill Prevention, Control and Countermeasures (SPCC) plan(s)
 - ii. Plans for investigation, handling, monitoring, discharge, release, storage, removal, remediation transportation, tracking, reporting, and other disposition of any Hazardous Substance encountered or used on the Project, whether or not the presence of such Hazardous Substances constitutes a Hazardous Environmental Condition
 - iii. Plans for initiating Remedial Actions in respect of any Hazardous Substances encountered on or used on the Project that constitute or could reasonably be expected to constitute a Hazardous Environmental Condition
 - iv. Procedures for coordination with the County and other emergency response-related agencies and organizations
 - v. Procedures for submission of “incident” reports for releases of Hazardous Substances

1.5 ROW Acquisition Plan

1. The ROW Acquisition Plan will define the approach to acquisition of the Project ROW and will address:
 - i. The roles and responsibilities of the Proposer and the County for ROW acquisition and relocation
 - ii. The ROW acquisition and relocation process and procedures
 - iii. Applicable guidelines and Laws
 - iv. Procurement ROW acquisition and relocation services
 - v. Coordination with the County and property owners
 - vi. ROW acquisition costs management
 - vii. The acquisition and relocation schedule
 - viii. Document/records management, review standards, QA/QC process
 - ix. Linkage with other relevant PDPs and the QMSP

1.6 Utilities Plan

1. The Utilities Plan will define the utility coordination, adjustment, and relocation activities during the design and construction of the Project and will address:
 - i. The roles and responsibilities of the Proposer, the County, and Utility

- companies/owners
- ii. Utility agency coordination plans and process
- iii. The Utility Relocation and adjustment process
- iv. Applicable guidelines, laws and regulation
- v. The application of prior rights and cost allocations
- vi. The utility easement acquisition process
- vii. Utility agreements including the VDOT Master Utility Agreement (“MUA”) and/or the development of Project specific utility relocation agreements
- viii. Relocations and adjustments of utility facilities included in the Proposer’s Contract
- ix. Relocations and adjustments of utility facilities performed by the utility company or their contractor
- x. The coordination with the Proposer, the County, Utilities, Utilities’ designers, and contractors
- xi. The identification and resolution of utility conflicts and interdisciplinary coordination
- xii. The development and maintenance of a Utility tracking report
- xiii. The process for revising utility plan and estimates
- xiv. The process of payment of utility company progress and final billings
- xv. The process for close out of utility relocations and processing as-built land use permit applications
- xvi. Identify monitoring and recording requirements
- xvii. On-going monitoring and compliance records tracking system
- xviii. The roles and responsibilities related to Proposer provided Maintenance of Traffic (MOT) services for utilities and/or their contractors
- xix. Regularly updated impact on project schedule
- xx. Reporting and documentation mechanism
- xxi. Linkage to other relevant PDPs and the QMSP
- xxii. Process to address unknown or previously unidentified utility conflicts during construction.

1.7 Communications Plan

1. The Proposer is expected to develop and maintain an effective Communications Plan in coordination with the County throughout the Project’s design and construction. The Proposer’s Communications Plan at a minimum does the following:
 - i. Provides an effective framework for communication between the Proposer, the County, and stakeholders

- ii. Effectively informs and engages the community, in coordination with the County, in the design and construction of the Project to ensure public understanding of design, feedback opportunities and status of construction
 - iii. Identifies and manages risks associated with the Project
 - iv. Maximizes public awareness of features and benefits of the Project
 - v. Provides a detailed outline of communication tools and strategies to be employed in support of and in coordination with the County during each phase of the Project design and construction including:
 - (1) Media Outreach
 - (2) Stakeholder Outreach and Information
 - (3) County Interface and Liaison
 - (4) Project Communication Team
 - (5) Design-Build Phase– Public Information and Involvement
 - vi. Develop a Crisis Communications Plan and Procedures, addressing coordination with the County and responsiveness to the media
 - vii. Reporting and documentation mechanisms
 - viii. Linkage to other PDPs and the QMSP
2. The Proposer shall develop a Public Information Plan (PIP) for the Work period as part of its overall Communication Plan.
3. The PIP will fit within the context of the broader Communication Plan in support of and in coordination with the County to address:
- i. The identification of stakeholders and the outreach tactics that will be used to engage them
 - ii. Training of relevant Project personnel in crisis communications, media relations and community outreach techniques
 - iii. Development of a Community Engagement Program, outlining the approach to consulting with the community about design and construction matters, including:
 - (1) Mechanism to engage and communicate applicable design and construction activities to the community
 - (2) Communicate mitigation measures to directly impacted properties (dust, noise, access constraints, utility impacts, etc.)
 - (3) Hosting and supporting the County in community information meetings to provide updated Project information as required
 - (4) Education and awareness related to public safety surrounding the work zone

- iv. The approach to support and coordinate with the County regarding communication with the public about construction activities, including:
 - (1) Notification of forthcoming construction activity to surrounding homes and businesses
 - (2) Commitment of key Project staff to participate in community outreach activities such as public meetings and media interviews
 - (3) Commitment to provide information to assist the County in responding to inquiries received through the County's various hotlines
 - (4) Planning for and communicating project activities impacting the public, such as changes to traffic patterns.
- v. Advance delivery to the County of information on expected traffic changes for inclusion in the County public advertising, online communications, and media outreach programs. All advertising pertaining to construction-related lane closures and traffic impacts will be managed and executed, or approved, by the County.
- vi. Provision of information to support the County in communicating with motorists and stakeholders to facilitate the Maintenance of Traffic (MOT) during construction. This will include:
 - (1) Packaging of all MOT information, for provision to the County's Project Communication Team on a weekly and as-needed basis, to facilitate communication to the media, stakeholders and the broader community
 - (2) Communication with direct impact area property owners
 - (3) Communication with elected officials and other key stakeholders in coordination with the County
 - (4) Coordination with local agencies
- vii. Coordination of construction-related information for inclusion on all Project communication material as developed under the Communication, Marketing and Public Outreach Plan (including web, bulletins, etc.)
- viii. Management of construction site tours, including stakeholder events
- ix. Recording of Project progress through photography and sharing of photography with the County for use in communications and outreach efforts
- x. Reporting and documentation mechanism
- xi. Linkage to other relevant PDPs and the QMSP.

1.8 Health, Safety and Security Plan

1. The Health, Safety and Security Plan will define the health, safety and security activities required during the design and construction of the Project and will address:

- i. The health and safety policy for the Project
- ii. The health and safety goals for the Project
- iii. The organization and responsibilities of the various positions related to health, safety and security
- iv. Construction occupational health and safety
- v. The Project health and safety rules and regulations
- vi. Site security
- vii. Documented procedures on meeting the health and safety requirements for the Proposer and its Contractors and suppliers
- viii. On-going tracking of efforts and corrective actions required and how they have been met
- ix. Reporting and documentation mechanism
- x. Linkage to other relevant PDPs and the QMSP

Submission Timetable

Project Development Plans shall reflect implementation status and must be updated in accordance with the following table, or earlier if required by the Project Agreements.

Project Development Plan	PDP submission date for review by County	Updates *	County Review Input
Design Quality Management Plan	After issuance of LNTP and approved prior to first design package submittal	Quarterly, if required (during the Construction Period)	Review and approve
Construction Quality Management Plan	Submitted and approved as a condition for issuance of the Construction NTP	Quarterly, if required (during the Construction Period)	Review and approve
Environmental Management Plan	After issuance of LNTP and approved as a condition for issuance of the Construction NTP	Quarterly, if required (during the Construction Project); Annually, if required (during the remainder of the Term)	Review and approve
ROW Acquisition Plan	After issuance of LNTP and approved as a condition for issuance of the Construction NTP	Quarterly, if required (during the Construction Project)	Review and approve
Utilities Plan	After issuance of LNTP and approved as a condition for issuance of the Construction NTP	Quarterly, if required (during the Construction Project)	Review and approve
Communications Plan	Within 45 Days of issuance of LNTP	Annually, if required (during the Term)	Review and approve

Project Development Plan	PDP submission date for review by County	Updates *	County Review Input
	issuance of the Construction NTP		
Health, Safety and Security Plan	After issuance of LNTP and approved as a condition for issuance of the Construction Notice to Proceed	Quarterly, if required (during the Construction Period); Annually, if required (during the remainder of the Term)	Review and approve

* Plans, records and logs shall be available for review by the County on an ongoing basis in accordance with the Agreement. Changes as required will be in accordance with these Technical Requirements. The term “updates” in this column means updates to the already-approved PDPs.

Eastern Avenue Extension
Volume II
Technical Requirements
Attachment 1.2 Standards and Specifications

The standards, special provisions and reference guides applicable for the Construction Period shall be the version of those documents as noted herein below or those in effect as of final issuance of RFP, including all supplements, errata, revisions and interims. Following the Work period, all subsequent design and construction must meet the standards current at the time the Work is performed. Groupings of standards are for ease of reference only and certain referenced documents have been included. It is the responsibility of the Proposer to ensure that all relevant standards and specifications have been applied.

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

1. Standards and References Documents

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

The 2020 VDOT Road and Bridge Specifications, and its associated Special Provision Copied Notes, contain pricing language under sections entitled “Measurement and Payment” that is not applicable in the context of this RFP. Thus, in accordance with the hierarchy of documents, the Proposer will refer to the Comprehensive Agreement for more information regarding the pricing and payment to the Proposer. Similarly, other references below which contain pricing methodologies for the “Contractor” shall likewise not be used. The requirements as described in the text of Volume 2 herein take precedence over the referenced documents listed below, unless otherwise indicated.

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

(a) Standards and Specifications

General:

1. AASHTO Guide Specifications for Highway Construction, 10th Edition
2. VDOT Materials Approved Products Lists
3. *VDOT Construction Manual (2005, revised May 2016)*
4. *VDOT Post Construction Manual (August 2014, revised December 2016)*
5. *VDOT Construction Inspection Manual (March 2018)*
6. VDOT's Minimum Requirements for Quality Assurance & Quality Control on Design-Build & Public-Private Transportation Act Projects, January 2012, revised July 2018
7. *VDOT Traffic Engineering Design Manual (April 2020, revised March 2023)*
8. *VDOT Right-of-Way Manual of Instructions, (January 2011, revised March 2023)*
9. *VDOT Utility Manual of Instructions, – Utility Relocation Policies and Procedures (October 2016, revised August 2017))*
10. *VDOT Land Use Permit Guidance Manual (March 2010, revised May 2013)*
11. VDOT Land Use Permit Regulations 24 VAC 30-151 (March 2010, revised November 2011)
12. *VDOT Public Involvement Manual (November 2016, revised November 2021)*
13. VDOT Instructional & Information Memorandums (IIM) – All Divisions (as of date of RFP)
14. VDOT Road and Bridge Standards, Vol. 1 and Vol. 2 (2016), including all revisions as of the date of the RFP
15. 2020 VDOT Road and Bridge Specifications and supplements
16. *VDOT Virginia Work Area Protection Manual (December 2011, revised November 2020)*
17. 2010 ADA Standards for Accessible Design
18. Americans with Disabilities Act (ADA) and Architectural Barriers Act (ABA) Accessibility Guidelines for Buildings and Facilities dated July 23, 2004 and amended May 7, 2014
19. VDOT Policy for Integrating Bicycle and Pedestrian Accommodations, adopted March 18, 2004 by the CTB
20. *Transportation Research Board Highway Capacity Manual, 7th Edition (2022)*
21. VDOT Manual of Instruction for Material Division, January 2023 to include all associated memorandum
22. *VDOT CADD Manual (January 2005, revised April 2021)*
23. ISO 9001 Quality Management Systems September 2015
24. Virginia Uniform Statewide Building Code (current regulations)
25. Uniform Relocation Assistance and Real Property Act of 1970, as amended (as of date of RFP)
26. 1950 Code of Virginia, Titles 25.1 and 33.2, as amended (as of date of RFP)
27. *VDOT Traffic Operations and Safety Analysis Manual (TOSAM, Version 2)*
28. VDOT Secondary Street Acceptance Requirements (December 2018)

Roadway Design:

1. VDOT State Bicycling Policy Plan (September 2011)
2. VDOT Road Design Manual, revised May 2024

3. AASHTO A Policy on Geometric Design of Highways and Streets, 7th Edition (2018)
4. AASHTO Roadside Design Guide, Fourth Edition, October 2011 (updated chapter 6)
5. AASHTO Guide for the Development of Bicycle Facilities, 4th Edition (2012)
6. FHWA 23CFR630 Subpart J Work Zone Safety and Mobility
7. AASHTO Guide Specifications for Highway Construction ,10th Edition

Geotechnical and Pavement Design:

1. AASHTO Mechanistic Empirical Pavement Design Guide
2. AASHTO Manual on Subsurface Investigations (2022)
3. AASHTO Guide for Design of Pavement Structures (Rigid Pavement and Flexible Pavement), 1993 Edition
4. VDOT Pavement Design Guide for Subdivision and Secondary Roads, 2018
5. FHWA 23CFR626 - Part 626 Pavement Policy – April 1, 2011
6. VDOT Pavement ME User Manual
7. Virginia Test Methods Manual
8. Engineering Properties of Clay Shales, Report 1 by W. Heley and B. N. McIver
9. U.S. Army Corps of Engineers EM-1110-2-1906, Laboratory Soils Testing, 1986
10. VDOT AASHTO Pavement ME User Manual, September 2017

Structures:

1. VDOT *Manual of the Structure and Bridge Division*, Revised February 2024
2. VDOT Supplement to the AASHTO Manual for Bridge Element Inspection, January 2016
3. Inventory and Appraisal Coding Guide for Virginia’s Structures, February 2021
4. AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017; and VDOT Modifications, November 2024.
5. AASHTO Guide Specifications for Accelerated Bridge Construction, 2018
5. 6. AASHTO Construction Handbook for Bridge Temporary Works, 2nd Edition, 2017
7. AASHTO Guide Design Specifications for Bridge Temporary Works, 2nd Edition, 2017, with 2020 Interim Revisions
8. AASHTO’s Manual of Bridge Evaluation, 3rd Edition, with 2020 Interims Revisions
9. AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals, 6th Edition, 2013 with 2015, 2019, 2020 and 2022 Interim Revisions
10. FHWA Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation’s Bridges, December 1995, including Errata sheets and Revisions
11. FHWA 23CFR650 - Subpart C – National Bridge Inspection Standards (“NBIS”), Subsection 650.301 or the latest revision(s)
12. AASHTO LRFD Bridge Construction Specifications, 4th Edition, 2020 and 2022 Interim Revisions
13. AASHTO Manual for Bridge Element Inspection, 2nd Edition, 2019
14. NFPA 14 Standard for the Installation of Standpipe and Hose Systems, 2024 Edition
15. NFPA 25 Standard for the Inspection, Test and Maintenance of Water-Based Fire Protection Systems, 2023 Edition

16. NFPA 70 National Electrical Code, 2023 Edition
17. 18. VDOT Traffic and Ancillary Structures Inventory & Inspection Manual, 2021
19. AASHTO Guide Specifications for Wind Loads on Bridges During Construction, 1st Edition, 2017
20. AASHTO Guidelines for Resolution of Steel Bridge Fabrications Errors, G2.2 – 2016
21. AASHTO Guidelines to Design for Constructability, G12.1 – 2016

Drainage:

1. VDOT 2021 Drainage Manual (including current Errata Sheets) and revisions (revised October 30, 2023) including current errata sheet
2. VDOT 2016 Road and Bridge Standards (revised April 1, 2024)
3. VDOT 2020 Road and Bridge Specifications (revised April 1, 2024)
4. VDOT Illicit Discharge Detection and Elimination (IDDE) Program Manual (June 2020)
5. L&D Instructional and Informational Memoranda (IIM-LD)
6. Virginia Stormwater Management Handbook, Version 1.0 (Handbook) (Issued January 29, 2024 / Effective July 1, 2025) and subsequent update Version 1.1 (Issued June 25, 2024 / Effective April 27, 2024)
7. DEQ Virginia Runoff Reduction Spreadsheet – Version 3.0
8. DEQ Virginia Stormwater BMP Clearinghouse (<http://vwrrc.vt.edu/swc/>) (note exclusions in Part 2, Section 2.7.4))
9. VDOT BMP Design Manual of Practice, April 2013
10. A Quick Guide for Determining Valid Nutrient Credit Banking Options Under Updated
11. Virginia Exchange Regulations, University of Virginia, August 12, 2020
12. DEQ NPS Nutrient Trading Data Viewer
(<https://vadeq.maps.arcgis.com/apps/webappviewer/index>)
13. Code of Virginia Article 2.4: Erosion and Sediment Control Law
14. State Hydraulic Engineer Directives (SHED) (Issued through March 2024)
15. The Virginia SWM Law dated 2015 (as listed in the Code of Virginia) (with 2024 updates)
16. The Virginia SWM Regulations dated 2015 (as listed in the Virginia Administrative Code) (with 2024 updates)
17. FHWA publications HDS-6, HEC-14, HEC-15, HEC-18, HEC-20, HEC-22, and HEC-23
18. Albemarle County Design Standards Manual (September 2022)

Utilities:

1. Albemarle County Service Authority Design and Construction Standards, including all subsequent revisions
2. Albemarle County Service Authority General Water and Sewer Specifications, including all subsequent revisions

Traffic Control Devices:

1. USDOT FHWA Standard Highway Signs including Pavement Markings and Standard Alphabets, 2004 Edition and 2012 Supplement
2. *2009 Manual of Uniform Traffic Control Devices (MUTCD), Revisions 1 and 2 (May 2012)*
3. 2011 Virginia Supplement to MUTCD, Revision 1 (September 2013)
4. Latest revision of the Standard Highway Signs Book
5. National Fire Protection Association NEC Standards, 2008
6. Virginia Standard Highway Signs, Revision 1, January 2015

Miscellaneous:

1. *VDOT Survey Manual 2010 Edition, Issued 2009, revised August 2021*
2. *VDOT Guardrail Installation Training Manual (GRIT), revised August 2019*
3. PHMSA Standards

(b) Reference Manuals

1. American Water Works Associations Standards
2. American Welding Society Standards *Bridge Welding Reference Manual September 2019 (Including current Errata Sheets)*
3. DCR Minimum Standard 3.10E Plastic Chamber Systems - Technical Bulletin No. 3
4. DCR Minimum Standard 3.15G Filterra™ Bioretention Filter System - Technical Bulletin No. 6
5. DCR Minimum Standard 3.02: Principal Spillways - Technical Bulletin No. 7
6. DCR Vector Control: Mosquitoes & Stormwater Management - Technical Bulletin No. 8
7. Duncan, J.M. (April 2000) Factors of Safety and Reliability in Geotechnical Engineering, *Journal of Geotechnical and Geo-environmental Engineering*, ASCE, Discussions and Closure, August 2001
8. Field Partnering Guide for VDOT Projects, November 2005
9. FHWA Context Sensitive Solutions/Design
10. FHWA Drilled Shafts: Construction Procedures Design Methods, September 2018, FHWA NHI-18-024
11. FHWA Ground Modification Methods, Volumes I and II, NHI Course 132034, Federal Highway Administration, Publication No. FHWA NHI-17-067, April 2017
12. *FHWA Implementation of LRFD Geotechnical Design for Bridge Foundations Reference Manual, February 2011, FHWA NHI-10-039*
13. *FHWA Soil Nail Walls Reference Manual, February 2015, FHWA NHI-14-007*
14. *gINT© Manual*
15. *gINT© Support, May 2020. International Mechanical Code*

16. International Telecommunication Union (ITU) Requirements
17. ISEE Blasters Handbook (Current Edition)
20. National Electric Code (NEC)
21. National Electric Safety Code (NESC) Standards
22. National Electrical Manufacturers Association (NEMA) Standards
23. National Transportation Communications for ITS Protocol (NTCIP)
24. Society for Protective Coatings (SSPC) Standards
25. Telecommunications Industry Association (TIA) and Electronic Industries Alliance (EIA) Standards and Specifications
26. U.S. Department of Agriculture Rural Utilities Service (RUS) 7 CFR 1755.900
27. Underwriters Laboratories (UL) Standards
28. VA Statewide Fire Prevention Code
29. *VDOT Land Use Permit Regulations Guidance Manual, Revised May 2013*
30. Virginia Calibration Methods, revised August 2015
31. Virginia Uniform Statewide Building Code
32. Virginia Work Zone Pedestrian and Bicycle Guidance Document dated January 2016
33. VDOT's Guidelines for the Installation of Marked Crosswalks dated May 2012
34. VDOT Guidance for Determination and Documentation of Left Turn Phasing Mode, Version 1.0, February 2015.
- 35 Federal Aviation Administration (FAA) Advisory Circular 150/5200-33C Hazardous Wildlife Attractants on or near Airports
36. *FHWA Culvert Assessment and Decision-Making Procedures Manual, 2010*
37. FHWA Culvert Pipe Liner Guide and Specifications, 2005
38. *VDOT Highway Traffic Noise Impact Analysis Guidance Manual (Version 7), dated July 14, 2015*
39. ACI 440, Guide for the Design and Construction of Externally Bonded FRP Systems for Strengthening Concrete Structures
40. Albemarle County Code

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

Special Provision Copied Notes

1. CN105-DB0610-00 - SECTION 105.06 SUBCONTRACTING (STATE FUNDED)
2. CQ107-DB0130-00 - DRUG-FREE WORKPLACE
3. CQ107-000150-00 - EQUAL EMPLOYMENT OPPORTUNITY
4. CN315-DB0100-00 - SECTION 315.05(C) PLACING AND FINISHING 1-18-17
5. CQ315-DB0110-00 - WAIVER OF METHOD A DENSITY DETERMINATION
6. CN512-DB0130-00 - TEMPORARY CONTRAST MARKINGS
7. CQ512-DB0120-00 - UNIFORMED FLAGGERS 9-29-08; R-7-12-16
8. CQ512-DB0321-00 - CONTRACTOR MAINTENANCE OF TEMPORARY MARKINGS 6-13-17

Special Provisions

1. SP102-DB0120-00 - NON-DISCRIMINATION IN EMPLOYMENT AND CONTRACTING PRACTICES (EO-61)
2. SP105-DB0110-00 - SPECIAL PROVISION FOR PARTNERING FOR DESIGN-BUILD PROJECTS
3. SP105-DB1000-01 - CONSTRUCTION RECORD DOCUMENTATION OF PERMANENT STORMWATER MANAGEMENT FACILITIES
4. SP105-DB0610-00 - SPECIAL PROVISION FOR DESIGN-BUILD TRACKING NUMBERS
5. SP105-DB0620-00 - MODEL BASED DESIGN AND CONSTRUCTION FOR DB
6. SQ105-DB0610-01 - SECTION 105.06–SUBCONTRACTING (STATE FUNDED PROJECTS)
7. SP217-DB0120-00 - MASS CONCRETE
8. SP302-DB0300-02 - PREFABRICATED VERTICAL DRAINS
9. SP303-DB0210-00 – USE OF NUMBER 10 SCREENINGS
10. SP315-DB0320-01 - PAVEMENT SHOULDER WEDGE
11. SP401-DB0100-01 - CLEARING AND GRUBBING AT BRIDGE APPROACHES
12. SP403-DB0100-00 - DYNAMIC PILE TESTING FOR END BEARING PILES (LRFD) 2-7-14; R-10-27-16
13. SQ404-DB0100-00 - ELASTIC INCLUSION (EXPANDED POLYSTYRENE) 6-24-03; R-7-12-16
14. SP407-DB0500-00 - SUPERSTRUCTURE ERECTION STABILITY
15. SP512-DB0130-00 - EMPLOYMENT OF PORTABLE TEMPORARY RUMBLE STRIPS
16. SP700-DB0180-02 - MODIFICATIONS TO AASHTO’S SIGN STRUCTURE SPECIFICATION
17. SP700-000180-03 - MODIFICATIONS TO AASHTO’S SIGN STRUCTURE SPECIFICATION
18. SP703-DB0100-00 - MAST ARM HANGER ASSEMBLY STD SM-3 AND SMD-2 5-25-16; I-7-12-16
19. SP703-DB0120-00 - SIGNAL HEAD MODULE AND SIGNAL HEAD BACKPLATE REPLACEMENT
20. SP705-DB0100-00 - VDOT SP FOR LED LUMINAIRES
21. SP801-DB0100-01 - LANE CLOSURE COORDINATION (LCC)/LANE CLOSURE IMPLEMENTATION (LCI) 9-20-17
22. VDOT SPECIAL PROVISION FOR THERMAL INTEGRITY PROFILING (TIP) OF DRILLED SHAFTS
23. VDOT SPECIAL PROVISION FOR MECHANICALLY STABILIZED EARTH WALLS (SEGMENTAL BLOCK FACING)
24. VDOT SPECIAL PROVISION FOR MECHANICALLY STABILIZED EARTH WALLS (CONCRETE PANEL FACING)
25. VDOT SPECIAL PROVISION FOR MECHANICALLY STABILIZED EARTH WALLS (MODULAR CANTILEVER FACING)

26. VDOT SPECIAL PROVISION FOR DRILLED SHAFTS USING SELF-CONSOLIDATING CONCRETE
27. VDOT SPECIAL PROVISION FOR QUALITY ASSURANCE/QUALITY CONTROL(QA/QC) FOR THE CONSTRUCTION OF DEEP FOUNDATION SYSTEMS
28. VDOT SPECIAL PROVISION FOR DRILLED SHAFTS
29. Special Provision for AUTODESK BUILD USE ON EASTERN AVENUE EXTENSION PROJECT

Supplemental Specifications

1. SECTION 109- MEASUREMENT AND PAYMENT
2. SS211-002020-03 - ASPHALT CONCRETE
3. SS220-002020-01 - CONCRETE CURING MATERIALS
4. SS223-002020-02 - STEEL REINFORCEMENT
5. SS234-002020-01 - SECTION 234 SUPPLEMENTAL SPECIFICATION
6. SS235-002020-01 - SECTION 235 - RETROREFLECTORS
7. SS236-002020-01 - WOOD PRODUCTS
8. SS246-002020-02 - SECTION 246 - PAVEMENT MARKINGS
9. SS305-002020-02 - SUBGRADE AND SHOULDERS
10. SS308-002020-01 - SUBBASE COURSE
11. SS309-002020-01 - AGGREGATE BASE COURSE
12. SS315-002020-04 - ASPHALT CONCRETE PAVEMENT
13. SS318-002020-01 - PAVEMENT INTERLAYERS
14. SS319-002020-02 - THIN HOT MIX ASPHALT CONCRETE OVERLAY
15. SS321-002020-02 - TRENCH WIDENING
16. SS411-002020-01 - PROTECTIVE COATING OF METAL IN STRUCTURES
17. SS512-002020-03 - SECTION 512 – MAINTAINING TRAFFIC
18. SS704-002020-02 - SECTION 704 - PAVEMENT MARKINGS AND MARKERS

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

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

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

Eastern Avenue Extension
Volume II
Technical Requirement
Attachment 1.3 Nutrient Credit Assignment Agreement

NUTRIENT CREDIT ASSIGNMENT AGREEMENT INSTRUCTIONS

There are times when someone other than VDOT (e.g., Design Build contractor, locality, etc.) purchases nutrient credits to satisfy water quality requirements on projects involving VDOT owned or operated roadways/facilities (existing or future). The Assignment Agreement is to be used for the transfer of the ownership of such nutrient credits from the purchaser to VDOT. The Assignment Agreement is to be completed with the appropriate project specific information and a copy of the bill of sale between the Nutrient Credit Bank and the purchaser is to be attached as Exhibit A. The Chief Engineer's office has delegated signatory authority to the District Administrator or his designee.

A copy of the executed agreement is to be included with the BMP information submitted either 1) with the VPDES Construction Permit Termination form LD-445D (where VDOT is the permittee) or 2) when the project is completed, and the roadway/facility is turned over to VDOT for maintenance and operation (when VDOT is not the permittee).

ASSIGNMENT AGREEMENT

This Assignment Agreement (this “Agreement”), dated as of the [___] day of [___], 201_, is between [___] (“Assignor”) and the Virginia Department of Transportation, an agency of the Commonwealth of Virginia (“Assignee”).

RECITALS

WHEREAS, on [DATE] the Assignor purchased nonpoint source phosphorus from [GENERATOR/SELLER]; and

WHEREAS, Assignor purchased [] pounds of phosphorus credits and retired [] pounds of nitrogen credits associated with such phosphorus credits;

WHEREAS, such phosphorus credits were generated at [FACILITY NAME] located in [COUNTY/CITY], Virginia; and

WHEREAS, Assignor has received a Bill of Sale from [GENERATOR/SELLER] dated [_____] and evidencing the purchase and attached hereto as Exhibit A; and

WHEREAS, the purchase of such phosphorus credits is associated with [PROJECT/PERMIT]; and

WHEREAS, Assignor desires to assign its rights and obligations under the Bill of Sale to Assignee and Assignee desires to assume the same.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual covenants and agreements set forth below and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Recitals. The foregoing recitals are hereby incorporated by reference herein and made a substantive part hereof.
2. Assignment. Assignor hereby transfers, assigns, and conveys to Assignee all of Assignor’s right, title and interest in the phosphorus credits and associated nitrogen credits that are the subject of the Bill of Sale attached hereto as Exhibit A.
3. Assumption. Assignee hereby accepts all of Assignor’s right, title and interest in the phosphorus credits and associated nitrogen credits that are the subject of the Bill of Sale attached hereto as Exhibit A.

4. Counterparts. This Agreement may be executed in counterparts (including by means of telecopied signature pages), any one of which need not contain the signatures of more than one party, but all such counterparts taken together shall constitute one and the same instrument.

5. Governing Law. All matters relating to the interpretation, construction, validity and enforcement of this Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Virginia, including all matters of construction, validity and performance.

6. Severability. Whenever possible, each provision of this Agreement shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement is held to be prohibited by or invalid under applicable law, such provision shall be ineffective only to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Agreement.

7. Amendment. Any provision of this Agreement may be amended or waived only in a writing signed by the Assignor and Assignee.

This space intentionally left blank

IN WITNESS WHEREOF, the Assignor and Assignee have caused their duly authorized representative to execute this Agreement as of the date first above written.

ASSIGNOR:

By: _____

Name: _____

Title: _____

ASSIGNEE:

VIRGINIA DEPARTMENT OF TRANSPORTATION

By: _____

Name: _____

Title: _____

Eastern Avenue Extension Volume II

Technical Requirements

Attachment 1.4 Roadway Inventory and Major Design Criteria

Eastern Avenue - Rockfish Gap Turnpike to Westhall Drive

Design Criteria

Design Parameter	Eastern Avenue	Route 250 (Rockfish Gap Turnpike)	Westhall Drive	Route 1260 (Cory Farm Road)
<i>Functional Class</i>	Urban Collector	Urban Minor Arterial	Urban Local	Urban Collector
<i>VDOT Geometric Standard</i>	GS-7	GS-6	GS-8	GS-7
<i>Terrain</i>	Rolling	Rolling	Rolling	Rolling
<i>Design Vehicle (AASHTO Standard)</i>	WB-62	WB-62	SU-30	WB-62
<i>Posted Speed (mph):</i>	TBD	45	25 (Statutory)	TBD
<i>Min. Design Speed (mph):</i>	30	45	30	30
<i>Curb/Curb and Gutter Standard</i>	CG-2 CG-6 CG-3 CG-7 with Bike Lanes	N/A	CG-2 CG-6	CG-2 CG-6 CG-3 CG-7 with Bike Lanes
<i>Min. Horizontal Radius (ft):</i>	251' (U) 273' (ULS)	713' U	155'	251' (U) 273' (ULS)
<i>Stopping Sight Distance:</i>	200'	360'	155'	200'
<i>Minimum Crest K Value:</i>	19	61	12	19
<i>Minimum Sag K Value:</i>	37	79	26	37
<i>Min. Width of Thru Lane or Pavement Width (ft):</i>	11'	11'	10'	11'
<i>Min. Width of Turn Lanes (ft):</i>	11'	11'	10'	11'
<i>Superelevation Standard</i>	TC5.11U TC5.11ULS	TC5.11U	TC5.11U TC5.11ULS	TC5.11U TC5.11ULS
<i>Max. Superelevation (%):</i>	4% (U) 2% (ULS)	4% (U)	4% (U) 2% (ULS)	4% (U) 2% (ULS)
<i>Maximum Grade (%):</i>	11%	7%	15%	11%
<i>Minimum Grade (%):</i>	0.3%	0.3%	0.3%	0.3%
<i>Min. Total Shoulder Width (ft):</i>	N/A	12' with GR 8' without GR	8'	N/A
<i>Paved Shoulder Width (ft):</i>	N/A	6' RT	N/A	N/A
<i>Min. Buffer Strip Width (ft):</i>	4' MIN / 6' WITH LANDSCAPING	N/A	4'	4' MIN / 6' WITH LANDSCAPING
<i>Min. Sidewalk Width (ft):</i>	5'	5'	5'	5'
<i>Min. Width Behind Sidewalk (ft):</i>	1' 5' with no handrail and 2:1 Slope > 4' drop off or more	1' 5' with no handrail and 2:1 Slope > 4' drop off or more	1' 5' with no handrail and 2:1 Slope > 4' drop off or more	1' 5' with no handrail and 2:1 Slope > 4' drop off or more
<i>Min. Width of Ditch Front Slope (ft):</i>	N/A	6' @ 4:1	N/A	N/A
<i>Clear Zone (Frontslope) (ft):</i>	12'-14' @ 6:1, 14'-16' @ 4:1	20'-22' @ 6:1, 24'-28' @ 4:1	12'-14' @ 6:1, 14'-16' @ 4:1	12'-14' @ 6:1, 14'-16' @ 4:1
<i>Min. Lateral Offset (ft):</i>	10'	10'	10'	10'

Eastern Avenue Extension
Volume II
Technical Requirements
Attachment 1.5 Minimum Pavement Sections

Minimum pavement sections and anticipated locations for these sections shall be utilized for Proposal preparation purposes only. The Proposer shall be required to validate the minimum pavement sections and to notify the County of its findings. If the Proposer's findings require a deviation from the RFP requirements, it shall notify the County in accordance with the Agreement. Acceptable changes to the minimum pavement sections are limited to increasing the thickness of the base or subbase layers specified below. Any changes to the minimum pavement sections provided require approval by the County. The Proposer shall be responsible for the final design and construction of the pavements for this Project in accordance with the Technical Requirements.

The Proposer shall photographically document the existing condition of all pavements within and adjacent to the Project limits prior to the Proposer's submission of final construction plans for VDOT approval and provide all photos to the County Project Manager. Photos shall be color digital images in .jpg format with 4 megapixels (approximately 2400 pixels wide x 1600 pixels high) or greater resolution. The Proposer shall be responsible for full-depth replacement of all pavement damages resulting from Project construction activities, regardless of the method or location of the pavement damage.

UD-4 edgedrains will be required for all pavements on this Project unless otherwise specified by VDOT's standards. The Proposer shall utilize a modified VDOT UD-4 underdrain for this project to ensure that Albemarle County's quality standards are met. The VDOT UD-4 standard shall be modified to replace the required 4" single wall perforated drainage pipe with 4" dual wall perforated drainage pipe in accordance with AASHTO M252. The only modification to VDOT Standard UD-4 shall be the use of a dual wall pipe in lieu of the single wall pipe, all other requirements of the VDOT Standard UD-4 and applicable Specifications shall apply. Modified UD-1 underdrain shall be provided in lieu of modified UD-4 edgedrain for pavement sub-drainage in areas of high ground water, springs or cuts in excess of fifteen (15) feet; the modification consists of wrapping the aggregate with geotextile drainage fabric. Standard Combination Underdrain (CD-1) shall be provided at the lower end of cuts. Standard Combination Underdrain (CD-2) shall be provided at grade sags, bridge approaches, and at the lower end of undercut areas.

Tie-ins to existing roadways and entrances along the mainline roadways shall utilize the mainline pavement section. Exceptions to this requirement may be granted upon detailed design submitted by the Proposer subject to approval by VDOT. Mill and overlay transitions to match existing pavement structure surface elevations for existing mainline pavements shall be in accordance with VDOT guidelines and standards in accordance with Part 2, Section 2.1.

The minimum pavement sections require that proper grading be maintained to direct surface water away from paved areas and to provide for efficient runoff from surrounding areas. Any utility excavations or excavations for storm drains within pavement areas shall be backfilled with compacted structural fill in accordance with applicable sections of the VDOT 2020 Road and Bridge Specifications and applicable Special Provisions. All temporary pavement structures subjected to traffic, including entrances and subdivision and secondary roads, shall include an asphalt concrete surface. Traffic shall not be serviced by an aggregate surface.

The Proposer shall prepare and incorporate into the plans, typical sections, profiles and cross-sections the validated pavement sections in accordance with the applicable manuals in Attachment 1.2. This includes drainage and subdrainage requirements to ensure positive drainage both within the pavement structure and on the pavement surface. The surface type for existing driveways shall be determined during plan preparations and shown on the plans. The Design- Builder is advised that the work described may involve differential depth milling, differential leveling, or both, to achieve the required grades in accordance with Part 2, Section 2.2. As required in Section 2.2 to address cross-slope correction as well as tie-ins, including tie-ins to existing curb and gutter that is planned to remain, the Proposer shall propose an appropriate leveling course mix for each situation.

The minimum pavement sections are as follows:

1.5.1 Eastern Avenue

New Pavement and Pavement Widening

Surface – 2.0 inches Asphalt Concrete, Type SM-12.5A

Base – 4.0 inches Asphalt Concrete, Type BM-25.0D

Subbase – 6.0* inches Aggregate Base Material, Type I No. 21B

**Note: Minimum thickness, vary as necessary to match existing per VDOT Standard Detail WP-2.*

The minimum pavement sections require that proper grading be maintained to direct surface water away from paved areas and to provide for efficient runoff from surrounding areas.

Mill and Overlay

For salvage/build-up areas, the existing pavement shall be milled 2 inches and replaced with a minimum of X inches of Asphalt Concrete, Type SM-12.5A. In areas where more than 2 inches of build-up/overlay is required to achieve proposed finished grade, milling of the existing pavement prior to build-up/overlay is required. Variable thickness of IM-19.0A shall be utilized for build-up/overlay areas prior to placement of the surface mix.

1.5.2 Cory Farms Road

New Pavement and Pavement Widening

Surface – 2.0 inches Asphalt Concrete, Type SM-12.5A

Base – 4.0 inches Asphalt Concrete, Type BM-25.0

Subbase – 6.0* inches Aggregate Base Material, Type I No. 21B

**Note: Minimum thickness, vary as necessary to match existing per VDOT Standard Detail WP-2.*

The minimum pavement sections require that proper grading be maintained to direct surface water away from paved areas and to provide for efficient runoff from surrounding areas.

Mill and Overlay

Mill and Overlay of Cory Farms Road will not be allowed as the structural capacity of Cory Farms Road existing pavement will not support the future volumes once Eastern Avenue Extended is constructed.

1.5.3 Concrete Sidewalk

Concrete sidewalk shall be placed on a minimum 4" thickness of aggregate base material Type I, Size No. 21B.

1.5.4 Curbs, and Curb and Gutter

Curbs, and Curb and Gutter shall be placed on a minimum 6" thickness of aggregate base material Type I, Size No. 21B extended 12" behind the curb.

1.5.5 Entrances

Type I – Residential Entrances (Existing Gravel and Grade Flatter than +/- 10%)

Subbase – 4.0 inches #25 or #26 Crusher Run Aggregate

Type III – Residential Entrances (Existing Paved and/or Grade Greater than +/- 10%)

Surface – 2.0 inches Asphalt Concrete, Type SM-12.5A (220 lbs/SY)

Subbase – 6.0 inches Aggregate Base Material, Type I No. 21B

1.5. Temporary Pavement

The Proposer shall be responsible for any temporary pavement design. Temporary pavements shall be designed in accordance with the AASHTO Guide for the Design of Pavement Structures (1993 edition) and the VDOT Materials Division's *Manual of Instructions*. All temporary pavement designs shall be submitted to The County for review. All temporary pavements shall be completely removed once they are no longer in service. All temporary pavement designs shall have a minimum of 6 inches of asphalt concrete and shall meet the following minimum design criteria:

1. Design Life – 6 months minimum and designed for the length of intended use
2. Reliability – eighty-five percent (85%) minimum
3. Initial Serviceability – 4.2 minimum
4. Terminal Serviceability – 2.8 minimum
5. Standard Deviation – 0.49 minimum
6. CBR value for subgrade soils determined through laboratory tests