



# **Construction Quality Assurance Plan (CQAP) for US 60 Downtown Expressway Gateway Pedestrian Improvements UPC 111702**

## **Cover Sheet**

- I. Date of Original CQAP Submittal: **INSERT DATE**
- II. CQAP Revision Date (if applicable):
- III. Locality Name and Physical Address:  
City of Richmond  
Department of Public Works  
900 East Broad Street, Room 707  
Richmond, VA 23219
- IV. Locality Name and Mailing Address:  
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Department of Public Works  
900 East Broad Street, Room 603707  
Richmond, VA 23219
- V. Responsible Charge Person:  
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Signature of Responsible Charge Person: \_\_\_\_\_  
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- VI. CQAP Contact Person:  
Printed Name:  
Signature of CQAP Contact Person: \_\_\_\_\_  
Contact Information:
- VII. Organizational Chart:  
a. See Appendix A

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# CQAP Document

## I. Mission Statement

All materials shall be approved, sampled, and/or tested in conformance with contract specifications and the Virginia Department of Transportation (VDOT) Locally Administered Projects Manual (LAP Manual). Submittal of this CQAP designates a commitment to adhere to the document's contents as well as the LAP Manual.

This Construction Quality Assurance Plan (CQAP) identifies the guidelines under which the QA/QC staff from the City of Richmond and the Contractor's and/or Subcontractor's inspection and testing staff will perform their jobs.

The QC staff will consist of the Contractor (TBD) and its subcontractors (TBD). Technicians from Contractor/Subcontractor(s) will be performing QC materials testing.

The QA staff will consist of the City of Richmond, CEI (TBD), and their subconsultants (TBD). QA materials testing will be performed by a testing consultant (TBD) under contract to the City (see Appendix C).

A sample Staff Qualifications Matrix can be found in Appendix B.

Independent Assurance (IA) Testing will be performed by VDOT, as necessary.

The Contractor will ultimately be responsible for the quality of the construction. CEI (TBD) & subconsultant will assist in managing the CQAP on behalf of the City. CEI (TBD) will provide inspection to assess construction processes relative to the applicable standards and specifications. The QC and QA testing firms/agencies will perform testing in accordance with this CQAP which is based on VDOT's LAP Manual Chapter 13 (December 2018) Guidelines and provide feedback to the Project Manager (PM). CEI will assure that the necessary documentation regarding QA/QC inspections and testing of materials and in-place construction has been performed and adheres to the contract before any payment is approved. The construction of this project will occur on all locality-maintained roadways.

Any deviation from this CQAP shall not occur without a revision submittal of this CQAP to the VDOT LAP Construction Project Monitor (CPM) for approval.

## II. Personnel Certification and Licenses

Copies of Personnel Certifications and Licenses as required by the contract documents are available upon request and are kept on file readily available to the VDOT LAP CPM for review. All personnel performing materials testing shall have the necessary

certifications and experience/expertise required by the contract documents and the VDOT LAP Manual. No work shall be performed otherwise.

The QA Staff will provide inspection and testing to assess construction processes relative to the applicable standards and specifications. The QA staff will perform independent control testing in accordance with the VDOT LAP Manual and this CQAP and will assure all the necessary documentation regarding QA/QC inspections and testing of materials and in-place construction has been performed and adheres to the contract before any payment is approved.

A Staff Qualifications Matrix can be found in Appendix B.

The QC staff will represent the Contractor on the project site and will be responsible for reporting all QC sampling, testing, visual inspections, certifications, and daily reports directly to the QA Inspector. The QC team will direct the activities of the project level production staff.

All team members providing QA and QC testing will be required to follow the approved CQAP.

The identity of the Contractor's QC staff will be given to the QA Inspector prior to the start of each work activity.

The Engineer of Record's role is as defined in the scope of work of the construction administration contract. Generally, the Engineer of Record will be consulted by the QA Inspector for all design changes or RFIs to the contract documents. Vanasse Hangen Brustlin, Inc.(VHB) is the Engineer of Record for the US 60 Downtown Expressway Gateway Pedestrian Improvements Project.

The Responsible Charge Person is Yongping Wang, PE, as the City of Richmond's Project Manager. The City of Richmond is the Owner. The Responsible Charge Person and the Owner's role is as defined in the contract. Generally, the Responsible Charge Person will represent the Owner and approve work performed and recommend approval of and changes to the contract. Payment applications and changes to the contract will be approved by the Owner, as recommended by the Responsible Charge Person.

The Contractor, Engineer of Record, and the QA Inspector will perform services for the Owner as defined in their agreements.

The Contractor's role is as defined in the contract. Generally, as related to this plan, the Contractor is responsible for all QC functions.

### **III. Independent Assurance (IA)**

Independent Assurance (IA) sampling and testing will be performed in accordance with the VDOT LAP Manual requirements including tolerances and calibrations. This will be conducted by a third party (VDOT) as necessary.

All materials testing laboratories shall meet the requirements as outlined in the VDOT LAP Manual, Chapter 13.2 for “Qualified Laboratories” (December 2018). No work shall be authorized otherwise.

Independent Assurance sampling and testing must be defined within the CQAP and shall be attached to this document. The Materials Notebook shall be the mechanism to track Independent Assurance samples. All Independent Assurance (IA) tolerances shall be in accordance with the LAP Manual Appendix 13.2 -E. If IA testing is outside the specified tolerance, the testing equipment for both the QC and IA testing shall be evaluated and if applicable, the calibrations checked. If either equipment is found to be out of calibration, then the equipment shall be recalibrated, and the test repeated for the equipment out of calibration. Alternatively, if both pieces of testing equipment meet calibration standards and the equipment tolerances specified in the applicable test method, third party testing shall be used to verify the test data and resolve the discrepancy.

### **IV. Communication Channels**

Once construction starts, the QA Inspector will coordinate, as appropriate, with the Contractor regarding the inspection and testing frequencies outlined in the CQAP, ensuring that adequate inspection and testing forces are available to meet the scheduled construction activities. The QA Inspector will interface on a regular basis with the Contractor and QC team. The QA Inspector’s primary point of contact on site will be the Superintendent. The QC staff, including the technicians and laboratory, will submit all documentation to the QA Inspector for review and acceptance. QA Inspector’s Project Manager will review these documents routinely to assure they are accurate and complete. Lab results may be submitted at a later date in conjunction with internal QA/QC reviews. Any unacceptable work identified by the QA/QC staff will be scheduled for correction, to include additional inspection and testing requirements. In conjunction with the Contractor’s two-week look-ahead schedule, the Contractor will ensure that upcoming work items are inspected and tested in accordance with the approved CQAP.

Communications will be handled by the QA Staff via the following meetings:

1. Preparatory Inspection Meetings: Inspection preparatory meetings will be held in advance of specific work activities. All City and Contractor staff will be invited to attend these meetings. These meetings will serve to verify the process for submitting and approving all documents, materials, and permits specific to the upcoming work packages. The QA and QC inspection and testing requirements, as detailed in the approved CQAP, will be reviewed and

scheduled. Materials sampling and testing by the respective QC laboratories will also be scheduled. This meeting will be scheduled by the Contractor in conjunction with the project schedule.

2. Monthly Progress Meetings: The Responsible Charge Person or their designee, such as the Engineer of Record, will lead the monthly progress meetings and QA Inspector will attend these meetings.
3. Regular QA/QC Staff Meetings: These meetings will be held to ensure each individual understands his or her respective responsibilities and that all work is properly assigned, inspected, tested, and properly documented. Regular communication with the QA Inspector will take place to review the project's scheduled activities and to ensure proper coordination of QA/QC activities.

The Contractor will provide two-week look ahead schedules and regular coordination with the QA Inspector for advance notice of inspection/testing. The Contractor will contact and communicate with its Subcontractor(s) when required. The QA Inspector will oversee materials testing and will also coordinate directly with the City and VDOT as needed.

## **V. Resolution Procedure**

In the event of unclear contract specifications, published guidelines, or disputes related to substandard materials, the dispute will be resolved in the following manner:

The Contractor shall immediately report to the Responsible Charge Person, in writing, all discrepancies that it finds between the contract documents and site conditions and/or any inconsistencies or ambiguities in the contract documents.

The Responsible Charge Person or their designee shall promptly correct or clarify such discrepancies, inconsistencies, or ambiguities in writing.

Any work done by the Contractor after the discovery of such discrepancies, inconsistencies, or ambiguities, but before the Responsible Charge Person or their designee has provided a written clarification or correction, shall be performed at the Contractor's own risk.

As noted in the contract, the most stringent requirement will be considered the controlling requirement.

## **VI. Disputed Work**

If the Contractor is of the opinion that any work required, necessitated, or ordered violates the terms and provisions of the contract, the Contractor shall promptly notify the Responsible Charge Person and Engineer of Record, in writing, of the contentions with respect thereto and request a final determination. If the Responsible Charge Person or

Engineer of Record determines that the work in question is contract work and not a change in work, the Contractor shall promptly comply and proceed as directed. The Contractor shall notify the Owner in writing that the work is being performed or the direction is being complied with within 15 working days after receiving notice of the determination from the Responsible Charge Person or Engineer of Record. Failure of the Contractor to so notify shall be deemed as a waiver of claim for extra compensation or damages thereto.

Before final acceptance by the Owner, all matters of dispute must be adjusted to the mutual satisfaction of the parties thereto.

## **VII. Progress Reports**

Weekly progress reports, with daily entries, will be provided by QA Inspector to the City of Richmond and Kimley-Horn during construction. Progress reports will be available in a SharePoint folder for VDOT LAP CPM review.

Sample copies of the Daily and Weekly Progress Reports are included in Appendix D.

## **VIII. Materials Acceptance Records and Test Data**

Materials Acceptance Records and Test Data shall be kept and readily available for inspection at all times by the VDOT LAP CPM. These records shall be kept for a minimum of five (5) years after project completion.

This section describes the responsibilities and requirements for the identification, preparation, and maintenance of records that furnish objective documented evidence of quality. The term “records,” used throughout this section, refers to Contractor, inspection, and testing records attesting to the achievement of the quality and technical requirements of the work generated during the various phases of project construction activities of the Contractor and its Subcontractor(s) and Suppliers. Quality records shall be available for review by the Owner.

### *General*

A quality record is defined as a completed document that furnishes objective evidence attesting to the quality of items and/or activities. Quality records shall be legible, identifiable, and retrievable. These records shall be protected against damage, deterioration, or loss. Requirements and responsibilities for record transmittal, distribution, retention, maintenance, disposition, and department or organization responsibilities shall be in accordance with the contract documents and the appropriate rules and regulations contained therein, and the VDOT Construction Manual, where applicable.

Quality records shall be indexed. The indexing system shall include, as a minimum, record retention times and the location of the record within the record system. The records indexing system shall provide sufficient information to permit prompt retrieval, and identification between the record and the item(s) or activity(ies) to which it applies. The retention period for quality records shall be in accordance with the requirements of the VDOT Post Construction Manual, which states that records must be retained “for three years after receipt of final payment from FHWA.”

QA Inspector shall maintain the project Materials Notebook, recording materials used, source of material, and method of verification used to demonstrate compliance with VDOT and project standards. The Materials Notebook shall be maintained according to VDOT Materials Division requirements.

QA Inspector shall also maintain project Daily Work Reports (DWRs). QA Inspector will utilize a software database such as SharePoint for DWRs and a standard VDOT Form TL-142 for the materials notebook. A sample QA Inspector DWR is shown in Appendix D.

Each of the inspectors and/or technicians shall summarize their daily inspections, tests, and material sampling activities in a Daily Work Report. The report will include a summary of the Contractor’s daily construction activities. Copies of the inspector’s records shall be provided to VDOT upon request. All reports will be completed and incorporated in the project records within 48 hours.

At a minimum, the construction QA Inspection report will include the following information:

- Work performed by the Contractor, Subcontractor(s), or Suppliers, identified by Work Package notation
- Weather conditions
- Inspections performed and their results
- Communications
- Type, location, and results of all tests performed
- Delays encountered
- Safety related problems and corrective action taken
- Non-conforming work and the corrective action taken
- Reports on any meetings held and their results
- Record of visitors to site
- Signature of inspector



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QA Inspector will be responsible for the creation and/or management of the following additional reports and logs:

- Project Field Reports
- Test Reports (provided by QC and QA technicians)
- Invoices and/or Delivery Tickets
- Nonconformance Log
- Punchlist
- Preparatory Inspection Meeting Minutes

Copies of the inspector's records shall be provided to VDOT upon request.

The QC and QA Inspectors will use the following VDOT forms to further document inspections and testing:

<b>VDOT Form</b>	<b>By Contractor</b>	<b>By QA Inspector</b>
VDOT C-25, Source of Materials	Complete and submit to Owner or Responsible Charge Person.  A new form is required for any material change or changes to previously approved materials.	Compile documentation to show that all materials used comply with the approved C-25.
VDOT C-107, Runoff Control Inspection Report	Complete once every five days or 48 hours after a significant rain event, classified as 0.25" in 24 hours.	Review all submitted by Contractor.  Complete once every five days or 48 hours after a significant rain event, classified as 0.25" in 24 hours.
VDOT TE-97001, Work Zone Safety Checklist	Weekly and after each traffic pattern change (day and night).	Review all submitted by QC.
VDOT C-85, Pavement Marking	One form for each day's production signed by certified applicator and QC Technician	Review forms submitted by QC.
VDOT C-22, Certified Inventory of Stored Materials	Complete and submit monthly, as applicable, with quantities use and storage of approved materials.	Review all submitted by QC.

The QA inspectors will refer to the following documents during inspection and testing:

- VDOT Construction Resource Guidebook
- VDOT Construction Quality Improvement Program Checklists
- VDOT Construction Manual (2005 with 2016 revisions)
- VDOT Post Construction Manual (December 2016)
- VDOT Instructional & Information Memorandums (I&IM) All Divisions
- VDOT Road and Bridge Standards (2016, Revised September 2022)
- VDOT Road and Bridge Specifications (2020)
- VDOT Road and Bridge Specifications (2022 Update)
- VDOT Survey Manual
- VDOT Manual of Instruction for Material Division
- VDOT Virginia Work Area Protection Manual (2011, Revision 2.1)
- City of Richmond Design and Construction Standards and Specifications

#### *Control of Quality Records*

QA Inspector verifies QA record accuracy and maintains copies of all quality-related documentation. These records will be stored in files maintained in the project document control system. All original documents pertaining to project information will be maintained in ShareFile. A complete set of project records in electronic format will be provided to the Owner at the completion of the project.

#### *Source of Materials*

The Contractor shall document all materials sources using a Source of Materials, Form C-25 in accordance with VDOT Specification 109. The Contractor is responsible for providing materials sources currently shown on VDOT's approved products list(s), as applicable. Should a material required by the Contract not be located on a VDOT approved list(s), the Contractor shall notify the Responsible Charge Person immediately and submit appropriate documentation. The Engineer of Record will review C-25s submitted by the Contractor, verify source of materials with VDOT approved lists as applicable, assign TL #'s, and provide required acceptance testing. The revised C-25 with this information will then be delivered to the Responsible Charge Person, who will submit the completed form to the VDOT District Materials contact and VDOT LAP CPM. An initial source of materials forms for this project shall be submitted by the Contractor within one week of the Pre-Construction Meeting and a minimum of two (2) weeks prior to the materials proposed use on the project. The QA Inspector will not approve installation of materials without an approved Source of Materials Form C-25.

#### *Source Inspections for Pre-Fabricated Materials*

The Contractor will identify to the Responsible Charge Person via form C-25 any offsite pre-fabricated materials. The Responsible Charge Person or their designee will verify that producers have a current VDOT QA/QC program and coordinate with VDOT to arrange for any required VDOT managed/provided inspections. Should the Contractor choose to utilize VDOT for the source inspection, a formal request from the Owner shall be submitted with the C-25. Should the Contractor propose to utilize a producer or prefabricator of materials without a current VDOT plant inspection program, the

Contractor shall be responsible for the additional cost associated to provide VDOT's required specialty inspections.

No pre-fabricated materials are anticipated to require a plant inspection for this project.

*Certified As-Built Drawings*

The Contractor will be responsible for the preparation and submission of As-Built Drawings, and that red-line record drawings are regularly maintained throughout the construction process. The As-Built Drawings will record approved actual field conditions upon completion of the work. Where there was a change to a specified material, dimension, location, or other feature, the As-Built Drawing will indicate the work performed. The Engineer of Record and the QA Inspector will review As-Built Drawings.

## **IX. Materials Testing Methods and Frequencies**

All materials testing, testing methods and frequencies shall follow the VDOT LAP Manual Appendix 13.2-G (December 2018), Materials Testing Methods and Frequencies Table - except as noted in Appendix C (reduced frequency of HCC Testing and density testing for miscellaneous items outside the roadway prism<sup>1</sup>). The QA Inspector will review the materials testing results for compliance with the VDOT LAP Manual requirements.

Field and laboratory sampling will be performed for each material type that meets the frequencies outlined in Appendix C of this CQAP. Work will be sampled so that it meets the 2020 VDOT Road and Bridge Specifications, 2022 VDOT Road and Bridge Specifications Update, the VDOT Construction Manual (2005 with 2016 revisions), VDOT Manual of Instructions for Materials Division, and VDOT LAP Manual (Chapter 13). In addition, any material that appears defective or inconsistent with similar material being produced will be sampled, unless such material is voluntarily removed and replaced or corrected. Samples will be taken in accordance with American Association of Highway and Transportation Officials (AASHTO) procedures or other acceptable procedures by personnel approved by VDOT.

All Acceptance Testing will be performed at the direction of the QA Inspector. Field and laboratory testing will be performed for each material type that meets the frequencies outlined in the VDOT LAP Manual. The QC testing requirements can be found in Appendix C. Copies of all test results will be furnished to the Owner as soon as possible after the test has been performed, recorded, and the results checked to ensure compliance with the appropriate testing guidelines. The requirements for furnishing test results do not include sample ageing or curing time; therefore, reporting times will be extended

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<sup>1</sup> Refer to LAP Manual 13.2.8: Structural concrete will not be used on this project, or if added will be tested in accordance with VDOT requirements. Aggregate used for backfill and HCC for misc. concrete will be from approved VDOT sources.

accordingly. If necessary, proposals will be submitted in writing for approval to use alternate AASHTO or state-approved test methods.

A preliminary testing plan for each material type has been developed and is provided in the Appendix C. More specific testing quantities and/or frequencies will be established before initiation of corresponding work package activities. At a minimum, the project schedule will be evaluated in two-week look-ahead increments to establish more finite testing quantities applicable within that period. This will be even further refined at inspection preparatory meetings specific to planned work activities that occur outside of the monthly progress meetings.

All material test reports, except those conducted by VDOT, will be approved by QC Inspector's PM prior to submission. The PM will coordinate with the Owner to receive, review, and accept the necessary test reports for the material VDOT retains responsibility for as listed above.

All sampling and testing will be performed by a laboratory that is either:

- A. Accredited in the applicable AASHTO procedures by the AASHTO Accreditation Program or
- B. Complies with the requirements of AASHTO R18 (18th Edition) for those tests to be performed and compliance with R18 for those tests not covered by AASHTO Material Reference Laboratory or
- C. A laboratory approved by VDOT's Materials Division or other accreditation program meeting the requirements of R18.

Acceptance Testing will be performed by the City, CEI, and their subconsultant.

All materials testing laboratories shall meet the requirements as outlined in the VDOT LAP Manual, Chapter 13.2.5 for "Qualified Laboratories" (December 2018). No work shall be authorized otherwise.

## **X. Right to Inspect**

The right to inspect by the VDOT LAP CPM is agreed upon for any and all project items and recognized by submittal of this CQAP.

VDOT has the right to inspect the work, in accordance with the VDOT LAP Manual, as noted herein. Hold Points will be identified after the Contractor's approved Baseline Schedule (Schedule of Record) is made available to VDOT.

## **XI. Non-Compliance**

Non-compliance with this CQAP shall be promptly reported through the established communications process outlined in this CQAP.

Throughout the course of a project, items may be identified that do not meet specifications. Most of these items are identified as they happen and consequently, are corrected immediately. There are two classifications of non-compliant work:

1. Level 1: Deficient work identified and corrected on the same day. The QA Inspector points out the deficiency to the Superintendent, who corrects it immediately. This issue is noted in the Daily Work Report by the QA Inspector. The QA Inspector notes what he found and what the Contractor did to correct the issue. The issue is closed.
2. Level 2: Deficient work identified and corrected at a later date. These are items that the QA Inspector identifies in the field, notifies the Superintendent, the Superintendent agrees to fix the item, and the QA Inspector notes in the Daily Work Report what the issue is, the corrective action agreed to, and the date it will be completed. The Daily Work Report is then turned in to the QA Records Manager, who transfers the issue to the project Issue Log so it can be tracked

to ensure it is resolved. The Issue Log is reviewed by the QA team on a regular basis to ensure that all items are corrected. The QA team performs reinspection of the item prior to removing it from the Issue Log. All issues must be corrected before the Contractor receives 100% payment for that item.

In the event of disputes or noncompliant work that is not resolved by the Contractor, refer to Part V of this CQAP and the applicable contract documents.

## **XII. Appendices**

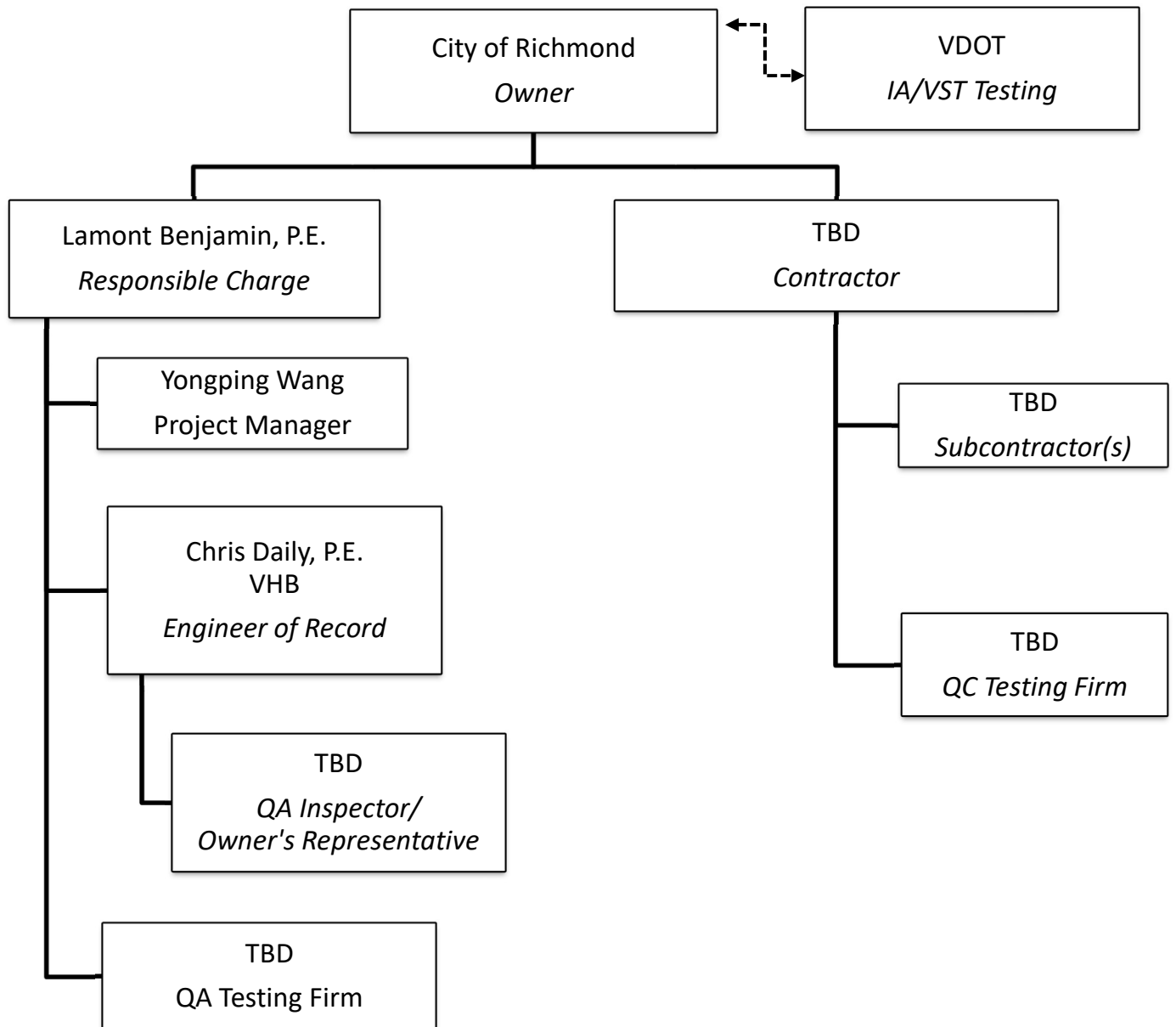
Appendix A – Sample Organizational Chart

Appendix B – Sample Staff Qualifications Matrix

Appendix C – Testing Requirements and Laboratories

Appendix D – Sample Contractor's Daily Report, QA Inspector Daily Work Report, and  
Weekly Progress Report

## Appendix A Organizational Chart



## Appendix B

### Sample Staff Qualifications Matrix

Inspector Name	Firm	Experience	Asphalt Concrete Field	HCC Field	Soils & Aggregate	Nuclear Safety	Pavement Marking	GRIT	OSHA 10-HR	DEQ E&S Inspector	Flagger	Work Zone Training (Intermediate)
Person A	Firm A	20+ years	X 12/2025	X 12/2024	X 12/2026	X Taken 6/3/2015	X 12/2025	X 11/2026	X Taken 10/2013	X 8/2026	X 10/2025	X 10/2025



## **Appendix C**

### **Testing Requirements and Laboratories**

*Source: VDOT Locally Administered Projects Manual – Minimum Requirements for Quality Assurance and Quality Control on Design Build and Public-Private Transportation Act Projects (Appendix 3 Table A-3)*

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
**January 2012**

**Table A-3: Part 1 – Material Testing**

No.	Material Type	Spec. Section	Test Reference	General Contractor			Department (Owner)	
				Contractor	Quality Assurance Manager		OIA Frequency*	OVST Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
1.	BACKFILL	106.03; 302.03, 303.04, 401.03; Contract Special Provisions						

\* Unless otherwise noted the Concessionaire/Design-Builder’s QAM IA/VST testing frequency is relative to QC frequency and the Owner’s (Department’s) OIA and OVST frequencies are relative to the Concessionaire/Design-Builder’s required QAM IA/VST frequencies. OIA will be split samples and OVST will be independent samples. QC will be performed in accordance with the requirements of Materials Manual of Instruction and Contract Specifications.

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
**January 2012**

No.	Material Type	Spec. Section	Test Reference	General Contractor			Department (Owner)	
				Contractor	Quality Assurance Manager		OIA Frequency*	OVST Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
1.	<b>Moisture Density Relations – Standard Proctor, Atterberg Limits, Grain Size Analysis &amp; CBR</b>  (All Backfill Types and Borrow Sources)	Density control of Embankments and Backfill (Density Control SP dated July 2010)	VTM 1, VTM 7, VTM 8 & VTM 25	One (1) test weekly during production and with change in material. Change in material would be a change in the visual USCS soil classification (e.g., CL to CH)  The Contractor shall provide borrow source test results as per VDOT 2007 Road and Bridge Specifications Section 106.03.	One (1) test every five (5) weeks for each QC personnel during production (20% of QC frequency). (Because IA is used to monitor equipment and personnel, there shall be one (1) test for each different QC personnel performing tests.) Samples are split from QC and results are compared against D2S <sup>1</sup> .	One (1) test every five (5) weeks during production (20% of QC frequency). Samples are random and independent from QC samples. Results compared against Specification	Minimum of two (2) tests per year during production for each of QAM’s IA personnel or 10% of QAM’s minimum IA testing frequency, whichever is greater. Perform at least one (1) IA test on QAM personnel in the first month of production. IA test material shall be split sample of QAM’s IA sample. Results compared against D2S. Tests to be performed by District Materials Representative.	Minimum of two (2) tests per year during production or 10% of QAM’s minimum VST testing frequency, whichever is greater. Perform at least one (1) test for first five (5) QC tests. VST test material shall be sampled randomly and not split from QC or QAM’s VST or IA samples. Results compared against specification. Tests to be performed by District Materials Representative.

<sup>1</sup> D2S defines the limit of variation between two properly conducted tests. Comparison tolerances for various test methods are provided in Table 5-2 of this Guide.

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
**January 2012**

No.	Material Type	Spec. Section	Test Reference	General Contractor			Department (Owner)	
				Contractor	Quality Assurance Manager		OIA Frequency*	OVST Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
1.	In-Place Density Tests – Box Culverts and Pipes, Drop Inlets, Manholes, Abutments. Retaining Walls (including MSE Walls)		VTM 10	<p>One (1) per <b>100</b>LF length, each lift, alternating sides (alternating side applies to box culverts and pipes only); minimum one (1) test per <b>150</b>CY; minimum one (1) test per work shift at each location and whenever there is a change in material or compaction equipment/method.</p> <p>For drop inlets, minimum one (1) test every other lift around perimeter after first 4” (100 mm) bedding layer.</p> <p>For manholes, minimum one (1) test every fourth layer around perimeter, after first 4” (100 mm) bedding layer, to within 5 feet (1.5 m), then minimum one (1) test every other lift.</p>	<p>One (1) test per <b>1500</b>CY for each QC personnel, minimally one (1) test every ten (10) days of any backfill work (10% of QC frequency). (Because IA is used to monitor equipment and personnel, there shall be one (1) test for each different QC personnel performing tests.) Sample locations are split with QC sample locations and results are compared against D2S.</p> <p>Minimum one (1) test per drop inlet.</p> <p>Minimum one (1) test per manhole.</p>	<p>One (1) test per <b>1500</b>CY, minimally one (1) test every ten (10) days of any backfill work (10% of QC frequency). Sample locations are random and independent from QC sample locations. Results compared against Specification</p> <p>Minimum one (1) test per drop inlet.</p> <p>Minimum one (1) test per manhole.</p>	<p>Minimum of one (1) test per 15,000 CY for each of QAM’s IA personnel (10% of QAM’s QA testing frequency). Perform at least one (1) IA test on QAM personnel in the first month. IA test location shall be split sampled at QAM’s IA test location. Results compared against D2S. Tests to be performed by District Materials Representative.</p>	<p>Minimum of one (1) test per 15,000 CY (10% of QAM’s QA testing frequency). Perform at least one (1) test for first five (5) QC tests. VST test location shall be sampled randomly and not split from QC or QAM’s VST or IA test location. Results compared against specification. Tests to be performed by District Materials Representative.</p>

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
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No.	Material Type	Spec. Section	Test Reference	General Contractor			Department (Owner)	
				Contractor	Quality Assurance Manager		OIA Frequency*	OVST Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
2.	<b>HYDRAULIC CEMENT CONCRETE (HCC) STRUCTURAL</b>	VDOT Section 217						
	<b>HCC Entrained</b> <b>1. Air Content</b> a) Pressure Meter b) Volumetric Meter  <b>2. HCC Slump</b>  <b>3. HCC Unit Weight</b>  <b>4. HCC Temperature</b>		ASTM C231 ASTM C173  ASTM C143  ASTM C138  ASTM C 1064	Test every load	One (1) test per 100 yds <sup>3</sup> performed on the Subcontractor’s QC; minimum one test per project.	One (1) test per 500 yds <sup>3</sup> ; minimum one test per project.	One (1) test per 5,000 yds <sup>3</sup> performed on QAM’s VST; minimum one (1) test per project.	One (1) test per 5,000 yds <sup>3</sup> ; minimum one (1) test per project
	<b>HCC Compressive Strength</b>		ASTM C31 / C39	One (1) set of three (3) cylinders per every 100 yds <sup>3</sup> ; minimum one (1) set of three (3) cylinders per day.	One (1) set of three (3) cylinders per every 1,000 yds <sup>3</sup> performed on the Subcontractor’s QC: minimum one (1) set of three (3) cylinders per project.	One (1) set of three (3) cylinders per every 5,000 yds <sup>3</sup> : minimum one (1) set of three (3) cylinders per project.	One (1) set of three (3) IA cylinders every 10,000 yds <sup>3</sup> performed on the QAM’s VST; minimum of one (1) set of three (3) IA cylinders per project	One (1) set of three (3) cylinders per every 10,000 yds <sup>3</sup> ; minimum one (1) set of three (3) cylinders per year per project

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
**January 2012**

No.	Material Type	Spec. Section	Test Reference	General Contractor			Department (Owner)	
				Contractor	Quality Assurance Manager			
				QC Frequency	IA Frequency*	VST Frequency	OIA Frequency*	OVST Frequency*
2.	HCC Chloride Permeability		VTM 112	One (1) set of two (2) cylinders per every 100 yds <sup>3</sup> ; minimum one (1) set of two (2) cylinders per day.	One (1) set of two (2) cylinders per every 1,000 yds <sup>3</sup> performed on the Subcontractor’s QC; minimum one (1) set of two (2) cylinders per project.	One (1) set of two (2) cylinders per every 5,000 yds <sup>3</sup> ; minimum one (1) set of two (2) cylinders per project.	One (1) set of two (2) IA cylinders every 10,000 yds <sup>3</sup> performed on the QAM’s VST; minimum of one (1) set of two (2) IA cylinders per project.	One (1) set of two (2) cylinders per every 10,000 yds <sup>3</sup> ; minimum one (1) set of two (2) cylinders per year per project.
	Concrete Reinforcing Steel Concrete Reinforcing Steel (Non-Corrosion Resistant Bar)		ASTM A615	Verify manufacturer’s certificates for every shipment for acceptance prior to placement.	Verify 10% of the mill certs of the Contractor’s QC.	One (1) sample per manufacturer per most common size per project. Test for tensile, yield, elongation and weight per unit length.	Verify 10% of the mill certs of the QAM’s VST	One (1) sample per project Test for tensile, yield, elongation and weight per unit length.

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
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No.	Material Type	Spec. Section	Test Reference	General Contractor			Department (Owner)	
				Contractor	Quality Assurance Manager		OIA Frequency*	OVST Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
2.	<b>Concrete Reinforcing Steel (Corrosion Resistant Bar)</b>  <b>1 - Stainless</b> <b>2 - Stainless Steel Clad</b> <b>3 - Low Carbon/Chromium</b>		ASTM A955 AASHTO MP13-04 ASTM A1035	Verify manufacturer’s certificates for every shipment for acceptance prior to placement.	Verify 10% of the mill certs of the Contractor’s QC.	One (1) sample per manufacturer per alloy type per most common size per structure. In addition to testing tensile, yield, elongation, and weight per unit length, verify the alloy using X-ray Fluorescence (XRF) Spectroscopy.	Verify 10% of the mill certs of the QAM’s VST.	One (1) sample per manufacturer per alloy type per most common size per structure. In addition to testing tensile, yield, elongation and weight per unit length, verify the alloy using XRF.
3.	<b>SOILS / SUBGRADE / EMBANKMENT (This is not redundant with Backfill requirements.)</b>	106.03; 302.03, 303.04, 305.03; 308.03; 309.05; Contract Special Provisions						

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
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No.	Material Type	Spec. Section	Test Reference	General Contractor			Department (Owner)	
				Contractor	Quality Assurance Manager		OIA Frequency*	OVST Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
3.	<b>Moisture Density Relations Of Soils – Standard Proctor, Atterberg Limits, Grain Size Analysis &amp; CBR</b> (Soils/Subgrade/ Embankment – this is not redundant with backfill requirements)	Density control of Embankments and Backfill (Density Control SP dated July 2010)	VTM 1, VTM 7, VTM 8 & VTM 25	<p><b>Once</b> weekly and with change in material. Change in material would be a change in the visual USCS soil classification (e.g., CL to CH)</p> <p>The Contractor shall provide borrow source test results as per VDOT 2007 Road and Bridge Specifications Section 106.03.</p>	<p><b>Once</b> every five (5) weeks during production for each QC personnel (<b>20%</b> of QC frequency). (Because IA is used to monitor equipment and personnel, there shall be one (1) test for each different QC personnel performing tests.) Samples are split from QC and results are compared against D2S</p>	<p><b>Once</b> every five (5) weeks during production. Samples are random and independent from QC samples. Results compared against specification.</p>	Minimum of two (2) tests per year during production for each of QAM’s IA personnel or <b>10%</b> of QAM’s minimum IA testing frequency, whichever is greater. Perform at least one (1) IA test on QAM personnel in the first month of production. IA test material shall be split sample of QAM’s IA sample. Results compared against D2S. Tests to be performed by District Materials Representative.	Minimum of two (2) tests per year during production or <b>10%</b> of QAM’s minimum VST testing frequency, whichever is greater. Perform at least one (1) test for first five (5) QC tests. VST test material shall be sampled randomly and not split from QC or QAM’s VST or IA samples. Results compared against specification. Tests to be performed by District Materials Representative.



**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
**January 2012**

No.	Material Type	Spec. Section	Test Reference	General Contractor			Department (Owner)	
				Contractor	Quality Assurance Manager		OIA Frequency*	OVST Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
3.	In-Place Density (Soils/Subgrade/ Embankment)	Density control of Embankments and Backfill (Density Control SP dated July 2010)	VTM 10	One (1) per <b>500</b> LF interval each lift; minimum one (1) test per <b>500</b> CY; minimum one (1) test per work shift at each location and whenever there is a change in material or compaction equipment/method	(10% of VST frequency) One (1) test per <b>50,000</b> CY for each QC personnel; minimally perform one (1) in first five (5) tests taken for VST (Because IA is used to monitor equipment and personnel, there shall be one (1) test for each different QC personnel performing tests.)Sample locations are split of QC sample locations and results are compared against D2S.	One (1) test per <b>5,000</b> CY (10% of QC frequency); minimally one (1) test every ten (10) days of production Sample locations are random and independent from QC sample. Results compared against specification.	Minimum of one (1) test per year during production for each of QAM’s IA personnel or 10% of QAM’s IA testing frequency, whichever is greater. Perform at least one (1) IA test on QAM personnel in the first month of production. IA test location shall be split sampled at QAM’s IA test location. Results shall be compared against D2S. Tests to be performed by District Materials Representative.	Minimum of one (1) test per year during production or 10% of QAM’s VST testing frequency, whichever is greater. Perform at least one (1) test for first five (5) QC tests. VST test location shall be sampled randomly and not split from QC or QAM’s IA or VST test location. Results compared against specification. Tests to be performed by District Materials Representative.

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
**January 2012**

No.	Material Type	Spec. Section	Test Reference	General Contractor			Department (Owner)	
				Contractor	Quality Assurance Manager			
				QC Frequency	IA Frequency*	VST Frequency	OIA Frequency*	OVST Frequency*
4.	TREATED SUBGRADE / SUBBASE, AGGREGATE BASE MATERIAL, AND CEMENT TREATED AGGREGATE BASE MATERIAL	VDOT Sections 306.03; 307.05; 308.04; and 309.05						

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
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No.	Material Type	Spec. Section	Test Reference	General Contractor			Department (Owner)	
				Contractor	Quality Assurance Manager		OIA Frequency*	OVST Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
4.	Depth Checks		VTM 38B	One (1) test per every half mile per lane width. [Two (2) per mile per paver (mixer) width from 0 to 1 miles; Three (3) from 1 mile to 1 ½ miles; Four (4) from 1 ½ miles to 2 miles; Project divided into lots, each lot stratified and locations determined randomly.]	10% of VST frequency, at least one (1) test for every fifty (50) miles per lane width for each QC personnel; minimally perform one (1) test per roadway in first five (5) tests taken for VST. (Because IA is used to monitor equipment and personnel, there shall be one (1) test for each different QC personnel performing tests.)Sample locations are split of QC sample locations and results are compared against D2S.	One (1) test for every five (5) miles per lane width (10% of QC frequency); at least one (1) test per roadway in first five (5) QC tests. Sample locations are random and independent from QC sample. Results compared against specification.	Minimum of one (1) test per project or one (1) test per year or one (1) test for every fifty (50) miles per lane width, for each of QAM’s IA personnel whichever is greater. Perform at least one (1) IA test on QAM personnel in the first month of production. IA test location shall be split sampled at QAM’s IA test location. Results shall be compared against D2S. Tests to be performed by District Materials Representative.	Minimum of one (1) test per project or one (1) test per year or one (1) test for every fifty (50) miles per lane width, whichever is greater. VST test location shall be sampled randomly and not split from QC or QAM’s IA or VST test location. Results compared against specification. Tests to be performed by District Materials Representative.

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
**January 2012**

No.	Material Type	Spec. Section	Test Reference	General Contractor			Department (Owner)	
				Contractor	Quality Assurance Manager		OIA Frequency*	OVST Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
4.	In Place Density		VTM 10	One (1) test per ½ mile per lane width; average of five (5) nuclear gauge readings comprises one (1) nuclear density test.	Minimally perform one (1) per roadway in first five (5) tests taken for VST, After first three (3) tests performed, test frequency will be 2% of QC frequency, with one (1) test for each QC personnel. (Because IA is used to monitor equipment and personnel, there shall be one (1) test for each different QC personnel performing tests.) Sample locations are split of QC sample locations and results are compared against D2S.	One (1) test for every five (5) miles per lane (10% of QC frequency), minimum of one (1) test per roadway. Sample locations are random and independent from QC sample. Results compared against specification.	Minimum of one (1) test per project or one (1) test per year or one (1) test for every fifty (50) miles per lane width, for each of QAM’s IA personnel, which ever is greater. Perform at least one (1) IA test on QAM personnel in the first month of production. IA test location shall be split sampled at QAM’s IA test location. Results shall be compared against D2S. Tests to be performed by District Materials Representative.	Minimum of one (1) test per project or one (1) test per year or one (1) test for every fifty (50) miles per lane width, whichever is greater. VST test location shall be sampled randomly and not split from QC or QAM’s VST test location. Results compared against specification. Tests to be performed by District Materials Representative.

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
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No.	Material Type	Spec. Section	Test Reference	General Contractor			Department (Owner)	
				Contractor	Quality Assurance Manager		OIA Frequency*	OVST Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
5.	<b>ASPHALT CONCRETE PLACEMENT</b>	VDOT Section 315						
	<b>Pavement Density by Nuclear Method with In Place Pavement Density by Cores serving the VST function</b> (Asphalt Pavement)		VTM-76, VTM-6, VTM-22	Establish roller pattern, control strips and test sections. 10 stratified random density test sites per test section (5,000 ft.)	Obtain and reweigh one (1) core per ten (10) controls strips. Observe one (1) control strip per ten (10) control strips established by the QC technician.  Minimum of one (1) control strip core and establishment per project.	Two (2) stratified random cores per 25,000 ft of paver width. Both cores obtained from the same test section.  Minimum two (2) cores per project.	Randomly select and reweigh one (1) VST core per five (5) VST test sections.  Minimum of one (1) core per project.	Two (2) stratified random cores per 50,000 ft of paver width. Both cores obtained from the same test section.  Minimum two (2) cores per project.
	<b>Pavement Density by Core/Plug Method with In Place Pavement Density by Cores serving the VST function</b> (Asphalt Pavement)		VTM-76, VTM-6, VTM-22	Establish roller pattern, control strips and test sections. Five (5) stratified random density test sites per test section (5,000 ft.)	Obtain and reweigh one (1) core per ten (10) controls strips. Observe one (1) control strip per ten (10) control strips established by the QC technician.  Minimum of one (1) control strip core and establishment per project.	Two (2) stratified random cores per 25,000 ft of paver width. Both cores obtained from the same test section.  Minimum two (2) cores per project.	Randomly select and reweigh one (1) VST core per five (5) VST test sections.  Minimum of one (1) core per project.	Two (2) stratified random cores per 50,000 ft. of paver width. Both cores obtained from the same test section.  Minimum two (2) cores per project.

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
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No.	Material Type	Spec. Section	Test Reference	General Contractor			Department (Owner)	
				Contractor	Quality Assurance Manager			
				QC Frequency	IA Frequency*	VST Frequency	OIA Frequency*	OVST Frequency*
5.	In Place Pavement Density – Distances too short for Control Strip Establishment (Asphalt Pavement)		VTM-6	Minimum of one (1) core per location not long enough to establish roller pattern/control strip.	Obtain and reweigh one (1) core per ten (10) locations.  Observe one (1) density determination per ten (10) locations established by the QC technician.	Obtain one (1) random core per 10 QC locations.	Randomly select and reweigh one (1) VST core per five (5) VST test locations.  Minimum of one (1) core per project.	One (1) stratified random core per 20 locations.  Minimum one (1) core per project.
	Depth Checks by Cores (Asphalt Pavement)		VTM-32	Obtain cores at the following frequency per 24-foot pavement width - from 0 to ½ miles, two (2) cores; from ½ to ¾ miles, three (3) cores; from ¾ to 1 mile, Four (4) cores	Select one (1) QC core per five (5) lots and remeasure thickness. A minimum of one (1) core per project	Obtain one (1) core per two (2) miles per 24 ft width.	Randomly select and remeasure one (1) VST core per five (5) lots.  Minimum of one (1) core per project.	Obtain one (1) stratified random core per five (5) lots.  Minimum of three (3) cores per project

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
**January 2012**

No.	Material Type	Spec. Section	Test Reference	General Contractor			Department (Owner)	
				Contractor	Quality Assurance Manager			
				QC Frequency	IA Frequency*	VST Frequency	OIA Frequency*	OVST Frequency*
6.	STONE MATRIX ASPHALT PLACEMENT	VDOT Section 317						
	In Place Pavement Density		VTM-6, VTM-22	Establish trial section and test sections. Three (3) stratified random cores/plugs per test strip. Five (5) stratified random density tests per test section (5,000 ft.)	Obtain and reweigh one (1) core per ten (10) trial sections. Observe one (1) trial section per ten (10) trials sections established by the QC technician.  Minimum of one (1) trial section core and establishment per project.	Two (2) stratified random cores per 25,000 ft of paver width. Both cores obtained from the same test section.  Minimum two (2) cores per project.	Randomly select and reweigh one (1) VST core per five (5) VST test sections.  Minimum of one (1) core per project.	Two (2) stratified random cores per 50,000 ft. of paver width. Both cores obtained from the same test section.  Minimum two (2) cores per project.

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
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No.	Material Type	Spec. Section	Test Reference	General Contractor			Department (Owner)	
				Contractor	Quality Assurance Manager		OIA Frequency*	OVST Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
7.	<b>HYDRAULIC CEMENT CONCRETE (HCC) - PAVEMENT</b>	VDOT Section 217						
	<b>HCC Entrained</b> <b>1. Air Content</b> a) Pressure Meter b) Volumetric Meter  <b>2. HCC Slump</b>  <b>3. HCC Unit Weight</b>  <b>4. HCC Temperature</b>		ASTM C231 ASTM C173  ASTM C143  ASTM C138  ASTM C1064	First three loads and if passing results obtained then one (1) test per hour	One (1) test per 10 hours; minimum one test per day	One (1) test per day	One (1) test per five 5 days production; minimum one (1) test per project.	One (1) test per ten (10) days production; minimum one (1) test per project.
	<b>Compressive Strength of Concrete Cylinders</b> (HCC Pavement)		ASTM C31/39	One (1) set of three (3) cylinders for every 500 yds <sup>3</sup> minimum one (1) set of three (3) cylinders for each days concreting operation.	One (1) set of three (3) cylinders for every 5000 yds <sup>3</sup> performed on the Subcontractor’s QC; minimum one (1) set of three (3) cylinders per project.	One (1) set of three (3) cylinders for every 10,000 yds <sup>3</sup> ; minimum one (1) set of three (3) cylinders per project.	One (1) set of three (3) cylinders for every 20,000 yds <sup>3</sup> performed on the QAM’s VST; minimum one (1) set of cylinders three (3) per project.	One (1) set of three (3) cylinders for every 50,000 yds <sup>3</sup> ; minimum one (1) set of three (3) cylinders per project.



**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
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No.	Material Type	Spec. Section	Test Reference	General Contractor			Department (Owner)	
				Contractor	Quality Assurance Manager		OIA Frequency*	OVST Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
8.	<b>HYDRAULIC CEMENT CONCRETE (HCC) – Miscellaneous Items</b>	VDOT Section 217						
	<b>HCC Entrained</b> <b>1. Air Content</b> a) Pressure Meter b) Volumetric Meter  <b>2. HCC Slump</b>  <b>3. HCC Unit Weight</b>  <b>4. HCC Temperature</b>		ASTM C231 ASTM C173  ASTM C143  ASTM C138  ASTM C1064	One (1) test per load	One (1) test per 250 yds <sup>3</sup> performed on the Subcontractor’s QC; minimum one test per project.	One (1) test per 1,250 yds <sup>3</sup> ; minimum one (1) test per project.	One (1) test per 12,500 yds <sup>3</sup> performed on QAM’s VST; minimum one (1) test per project.	One (1) test per 12,500 yds <sup>3</sup> ; minimum one (1) test per project
	<b>Compressive Strength of Concrete Cylinders</b> (Miscellaneous Items)		ASTM C31/ ASTM C39	One (1) set of three (3) cylinders per every 250 yds <sup>3</sup> ; minimum one (1) set of three (3) cylinders per day.	One (1) set of three (3) cylinders per every 2,500 yds <sup>3</sup> (cumulative) performed on Subcontractor’s QC; minimum one (1) set of three (3) cylinders per project.	One (1) set of three (3) cylinders per every 12,500 yds <sup>3</sup> (cumulative); minimum one (1) set of three (3) cylinders per project.	One (1) set of three (3) cylinders every 25,000 yds <sup>3</sup> (cumulative) performed on the QAM’s VST; minimum one (1) set of three (3) cylinders per project.	One (1) set of three (3) cylinders per every 25,000 yds <sup>3</sup> (cumulative); minimum one (1) set of three (3) cylinders per project.

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
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No.	Material Type	Spec. Section	Test Reference	General Contractor			Department (Owner)	
				Contractor	Quality Assurance Manager			
				QC Frequency	IA Frequency*	VST Frequency	OIA Frequency*	OVST Frequency*
9.	PAVEMENT MARKINGS	VDOT Section 704						
	Marking and Bead Application Rate		VTM 94	Perform VTM-94 at start up with periodic checks every three (3) hours of operation	Review start up calibrations. Ensure one plate sample is taken and tested for thickness, width, bead distribution and embedment. Retain sample for further testing if needed. Review all of the C85 reports daily to verify calculated quantities match the application rates and confirm that daily measurements were performed as described in VTM 94. Performed by QAM inspection staff.	Randomly select three (3) ten-foot areas at the beginning middle and end of in place sections of markings per day. Skip lines and edge lines are considered separately: 1) Inspect PM for correct placement, straightness, edges, thickness, bead distribution and embedment, day and night color and brightness. Inspect structure of tape to insure patterned waffles have not been damaged by roller.	Review 5% of the C85 daily reports to verify calculated quantities match the application rates and confirm that daily measurements were performed as described in VTM 94. Performed by Project staff.	Upon completion of pavement markings installation, perform two (2) IV tests, consisting of one (1) day and one (1) night time (examining the brightness and nighttime color while driving along Project) review of the marking installation. Performed by District Regional Operations once the markings have all been placed.

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
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**Table A-3: Part 2 – Contractor Product Installation, Practices and Procedures Compliance Monitoring and Verification**

No.	Material Type/ Action	Spec. Section	Test Reference	General Contractor			VDOT	
				Contractor	Quality Assurance Manager		IA (Owner) Frequency*	IVST (Owner) Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
1.	<b>Clearing and Grubbing</b>	VDOT Section 301	Table A3					
	Ensure activities are confined to limits and seeded within 30 days of disturbance			Daily	Weekly	Review documentation monthly	Monthly	Review documentation upon completion
2.	<b>Pre-cast Structures</b>	VDOT Section 404						
	Verify bedding material is installed properly and that pre-cast materials are not chipped or cracked			Daily	Once per structure or run of pipe	Verify test (density) reports and documentation monthly	10% of structures or runs of pipe	Verify 10% of QAM VST Documentation
3.	<b>Erosion and Siltation Control</b>	VDOT Section 303.03, VDOT R&B Standard 113 & Current Virginia DCR Specifications and Certifications						
	Monitor for correct installation and maintenance			Daily	Weekly	Inspection after ¼” or greater rain event	Weekly	Monthly inspection of documentation and verification of certifications

\* Unless otherwise noted the Concessionaire/Design-Builder’s IA and VST testing frequency is relative to QC frequency and the Owner’s IA and IVST frequencies are relative to the Concessionaire/Design-Builder’s QAM required test frequencies. IA will be split samples and VST will be independent samples. QC will be performed in accordance with the requirements of Materials Manual of Instruction and Contract Specifications.

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
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No.	Material Type/ Action	Spec. Section	Test Reference	General Contractor			VDOT	
				Contractor	Quality Assurance Manager		IA (Owner) Frequency*	IVST (Owner) Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
4.	Geosynthetics	VDOT Section 245	Various					
	Each type			1 set of required tests for each lot of each different type and manufacturer; visually inspect 100% of installed material	10% of QC	Review documentation monthly	10% of QC visual inspection	1 set of required tests for each different type of material per project
5.	Undercut	VDOT Section 303.04 and contract documents						
	Review area to determine need for undercut			Prior to start of work at each location	Weekly during production	All reports reviewed by QAM ; QAM to verify qualified inspector and correct equipment	10% of QA frequency	Review documentation upon completion

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No.	Material Type/ Action	Spec. Section	Test Reference	General Contractor			VDOT	
				Contr actor	Quality Assurance Manager		IA (Owner) Frequency*	IVST (Owner) Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
5.	Measure undercut area			Prior to backfill at each location	Weekly during production	All calculations/reports checked/reviewed by QAM to verify qualified inspector and correct equipment	10% of QA frequency	Review documentation upon completion
6.	<b>Load Bearing Piles</b>	VDOT Section 403	Table A3					
	Monitor operation and document blow counts			Continuously	Daily	Review documentation weekly	Weekly	Review documentation upon completion
	Perform Center of Gravity calculations			For each foundation	One (1) for every ten (1) foundations (10% of QC frequency))	One (1) for every twenty (20) foundations	One (1) for every hundred (100) foundations corresponding to an IA test	One (1) randomly selected per project two (2) if greater than one hundred (100) foundations

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
**January 2012**

No.	Material Type/ Action	Spec. Section	Test Reference	General Contractor			VDOT	
				Contractor	Quality Assurance Manager		IA (Owner) Frequency*	IVST (Owner) Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
7.	<b>Structural Steel</b>	VDOT Section 407						
	Receive Bolts, sample, verify the documentation is complete and perform laboratory Skidmore, tension and galvanized coating testing	VDOT 226.02(h)	Table A3	Each nut-bolt-washer (NBW) assembly lot shall be sampled at a minimum rate of 2 assemblies per NBW lot. The documentation shall be collected from the bolt supplier and the galvanizer for each lot and supplied along with the samples to the QAM. QC personnel shall monitor the storage and conditions of the bolts to ensure they remain in good well lubricated condition.	The documentation shall be reviewed to ensure all parts are present and that the required tests have been performed by the producers and that the markings match the suppliers’ requirements. The results of the VST shall be reviewed to ensure the material passed the tests.	Ea. NBW assembly lot shall be tested, one bolt in direct tension, one assembly for galvanized coating and one nut and bolt for rotational capacity testing (Rot-Cap) as per section 226.	Ea. Project phase, two of the sampled NBW assemblies shall be monitored by the VST during testing by the QAM.	Collect a separate sample (at random) of not less than 10% of the lots sampled (two lot minimum) and test for tension, Rot-Cap and galvanized coating, and review the paperwork verifies the origin and physical properties meet the specs.

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
**January 2012**

No.	Material Type/ Action	Spec. Section	Test Reference	General Contractor			VDOT	
				Contractor	Quality Assurance Manager		IA (Owner) Frequency*	IVST (Owner) Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
7.	Verify daily Skidmore testing is performed IAW (in accordance with) proper procedures for each lot  Note: NBW assembly may be reused after Skidmore testing in a connection if no defects are noted in visual inspection and the nut runs freely up the bolt for the full thread length - Only new NBW assemblies may be tested each day	VDOT 407.06(c)	Table A3	Ea. Day & Ea. NBW lot (3 bolts per lot) used shall be Rot-Cap tested in the Skidmore device IAW proper procedures	Minimum three (3) NBW assemblies for each lot being installed shall be observed by the IA inspector	Three NBW assemblies from each lot shall be Rot-Cap tested at the QAMs lab independently each week during erection	Witness the QAM VST once per week during erection. (2 times minimum)	Collect an independent sample and perform Rot-Cap test once at the start of each phase of erection.
	Verify the installation crews are using proper installation procedures IAW specifications to tension the bolts	VDOT 407.06	Table A3	Monitor ea. Crew (2-3 workers) during erection to ensure proper technique (TOTN – turn-of-the-nut or DTI – direct tension indicating washers) is followed	Monitor ea. Crew (2-3 workers) for a half dozen NBW assemblies once at the beginning of each four-hour work period	No test	Monitor ea. Crew (2-3 workers) for a half dozen NBW assemblies once each week during erection	No test

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
**January 2012**

No.	Material Type/ Action	Spec. Section	Test Reference	General Contractor			VDOT	
				Contractor	Quality Assurance Manager		IA (Owner) Frequency*	IVST (Owner) Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
7.	Verify the bolted connections have been tensioned properly using statistical sampling frequency and a calibrated torque wrench	VDOT 407.06(c)4	Table A3	For each connection, test 10% or a minimum of 2 NBW assemblies verifying the required torque. Complete testing before the deck is formed.	Monitor all the torque testing for each main member connection (slip-critical connections) and at the beginning of each period where secondary members are being checked.	Test 2 NBW assemblies in 25% of the slip critical connections (minimum of 2 connections per transverse line of splices) and 2 NBW assemblies in 10% of the secondary member connections	Monitor the QAM testing	Verify the equipment is calibrated within the appropriate timeframe



**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
**January 2012**

No.	Material Type/ Action	Spec. Section	Test Reference	General Contractor			VDOT	
				Contractor	Quality Assurance Manager		IA (Owner) Frequency*	IVST (Owner) Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
8.	<b>Protective Coating of Metal Structures</b>	VDOT Section 411 SSPC-PA-2	Table A3					
	Monitor surface preparation and check coating thickness			Take three (3) surface profile measurements per day of blasting. Five (5) Spot measurements (15 individual readings) per day as defined in PA-2 for coating thickness after each layer of applied protective coating at each location.	(10% of QC frequency) Take two (2) surface profile measurements per week of blasting. One (1) Spot measurement (3 individual readings) per day as defined in PA-2 for coating thickness after each layer of applied protective coating at each location.	One (1) surface profile measurement per month of blasting. One (1) Spot measurement (3 individual readings) per month as defined in PA-2 for coating thickness after each layer of applied protective coating at each location.	10% of QAM IA frequency  Observe a minimum of one per project	One (1) per three (3) months a minimum of one per project

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
**January 2012**

No.	Material Type/ Action	Spec. Section	Test Reference	General Contractor			VDOT	
				Contractor	Quality Assurance Manager		IA (Owner) Frequency*	IVST (Owner) Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
9.	<b>Underdrains</b>	VDOT Section 501	Table A3					
	Inspect to ensure no deficiencies per VTM 108			All accessible outlet locations; Additionally a minimum of 10% of longitudinal sections	Observe 10% of outlet locations; Additionally a minimum of 1% of longitudinal sections	One (1) every twenty-five (25) outlet locations A minimum of one per project independent from IA	Observe One (1) every five (5) QAM IA Minimum of one (1) per project	Select one (1) uninspected site for QAM to inspect
10.	<b>Storm Sewer and Culvert Post-Installation Inspection</b>	302.03(d)	VTM 123					
	Various			Per VTM 123	Take place of VDOT Representative in VTM 123 who must be present for 100% of QC	Review each post-installation report	10% of QAM IA	Review documentation upon completion
11.	<b>Guardrail</b>	VDOT Section 505	Table A3					
	Verify that guardrail is installed per specifications and at proper height			Daily	Spot-check every fifty (50) linear feet for proper height	Spot-check every five hundred five (505) feet	Observe VST one (1) per mile, a minimum of two (2) per project	Select one (1) independent site per project

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
**January 2012**

No.	Material Type/ Action	Spec. Section	Test Reference	General Contractor			VDOT	
				Contractor	Quality Assurance Manager		IA (Owner) Frequency*	IVST (Owner) Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
12.	<b>Fencing</b>	VDOT Section 507	Table A3					
	Verify fencing type, height and location			Daily	Weekly	Review documentation monthly	Field inspection with final payment	Review documentation upon completion
13.	<b>ROW Monuments</b>	VDOT Section 503	Table A3					
	Verify monument type and location			10% of ROW monuments	1% of ROW monuments (10% of QC frequency)	Review paperwork monthly during installation	10% of QAM IA frequency a minimum of one (1) per project	Review paperwork upon completion
14.	<b>Maintenance of Traffic</b>	VDOT Section 512	Table A3					
	Monitor installation and maintenance and use Work Zone Safety Checklist			Daily	Weekly	Review documentation every two (2) weeks	Review documentation Monthly	Review documentation on each site visit
15.	<b>Sound Barrier Walls</b>	VDOT Section 519	Table A3					
	Verify location and installation with shop drawings			Daily	Weekly	Review documentation every two (2) weeks	Bi-Monthly	Review documentation upon completion
16.	<b>Topsoil and Seeding</b>	VDOT Section 602/ 603	Table A3					
	Verify proper material is utilized at application rates from plans			Daily	Weekly	Review documentation monthly	Review final installation	Review documentation upon completion

**Appendix 3 Table A-3 – Minimum Requirements for Concessionaire/Design-Builder’s QA/QC Plans on Design-Build Projects**  
**Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects**  
**January 2012**

No.	Material Type/ Action	Spec. Section	Test Reference	General Contractor			VDOT	
				Contractor	Quality Assurance Manager		IA (Owner) Frequency*	IVST (Owner) Frequency*
				QC Frequency	IA Frequency*	VST Frequency		
17.	<b>Planting</b>	VDOT Section 605	Table A3					
	Verify that proper plants are installed at correct locations per plans			Daily	Weekly	Review documentation monthly	Review final installation	Review documentation upon completion
	Monitor that plants are cared for during establishment period			Daily	Weekly	Review documentation monthly	Monthly	Review documentation upon completion
18.	<b>Traffic Signs</b>	VDOT Section 512	Table A3					
	Verify that signs meeting current standards are utilized in locations per plans			Daily	Weekly	Review documentation monthly	Weekly	Review documentation upon completion
19.	<b>Traffic Signals</b>	VDOT Section 703	Table A3					
	Monitor installation for conformance with plans and specifications			Daily	Weekly	Review documentation monthly	Weekly	Review documentation upon completion
20.	<b>Water and Sewer Facilities</b>	VDOT Section 520	Table A3					
	Monitor installation for conformance with plans and specifications.			Daily	Weekly	Review documentation monthly	Weekly	Review documentation upon completion
21.	<b>Specialty Contract Items</b>							
	Various	Various	Various	Monitor at rates set forth in QA/QC plan.	Monitor at rates set forth in QA/QC plan.	Monitor at rates set forth in QA/QC plan.	10% of QAM VST frequency or as determined by VDOT Project Manager	10% of IA Owner frequency or as determined by VDOT Project Manager

**Appendix D**  
**Sample Contractor's Daily Report, QA Inspector Daily Work Report,**  
**and Weekly Progress Report**



# DTS WEEKLY REPORT – RICHMOND SIGNAL SYSTEM – PHASE III PROJECT (UPC 105890)

Sept 3, 2021

Prepared by Tony Brunal

DTS Contacts			
Name	Title	Phone	Email
Tony Brunal	Project Manager	804-641-3131	Tony.Brunal@digitaltrafficsystems.com
Daniel Wright	Superintendent	540-815-3820	DWright@rwec.com
Mark Overstreet	Foreman (Bore Crew)	540-521-9590	N/A
Cecil Smith	Bore Crew	N/A	N/A
Emerson Smith	Foreman	N/A	N/A
Dalton Hash	Crew Member	N/A	N/A
Richard Kreyer	Crew Member	N/A	N/A
James Smith	Technician	540-471-0097	James.Smith@digitaltrafficsystems.com

**Date:** 08/30/2021

**Job Site:** 3(22)C Main Street and 17th Street

**Work performed:** Setup MOT. Met with DPW to discuss sewer depth. Performed Pot holing. Installed Demo L2 Switch at Main St/15th Street Location.

**Date:** 08/31/2021

**Job Site:** 3(22)C Main Street and 17th Street – Main Street and 15th Street

**Work performed:** Setup MOT. Performed Pot holing. Excavated 15Lft of Eci-1 (Outside Roadway). Installed 70Lft of 2" PVC Conduit. Modified one (1) JB. Repaired 3.3Lft of sidewalk pavers. Excavated one (1) Cabinet Foundation.

**Date:** 09/01/2021

**Job Site:** 3(22)C Main Street and 17th Street

**Work to be performed:** Setup MOT. Performed Pot holing.

**Date:** 09/02/2021

**Job Site:** 3(22)C Main Street and 17th Street

**Work performed:** Setup MOT. Performed Pot holing. Prepared and Installed 20Lft of 2" PVC Conduit in the Cabinet Foundation. RWEC Safety Officer - Doug Jones visited site.

**Date:** 09/03/2021

**Job Site:** 3(22)C Main Street and 15th Street

**Work performed:** Removed Demo L2 Switch and confirm communications at Main St/15th Street Location.

**Date:** 09/04/2021 - 09/05/2021

**Job Site:** NA

**Work performed:** None Scheduled



**RICHMOND SIGNAL SYSTEM PHASE III  
DAILY REPORT**

**Report Date:** 11/03/21  
**QCS Representative:**  
C. Goss

**Project Number:**  
U000-127-895  
UPC 105890

**AM Weather:** Clear  
**Low Temp:** 42 °F

**PM Weather:** Clear  
**High Temp:** 52°F

**Work Executed**

**Main Street, 26<sup>th</sup> block and Pear Street**

**Richardson & Wayland Electrical:**

- The undersigned arrived on site at 7:00 am and off site at 4:00 pm on this date. Contractor was present at laydown yard. Crews placed a lane closure at the corner of Poe's Pub and Pear Street in the east bound right lane and placed the truck and vacuum trailer adjacent to the curb for potholing the utilities along the brick pavers on the southside of the block.
- Utilities were marked for depth and backfilled with 21A material. Crew began to replace the brick pavers at the locations.
- Crew proofed the conduit from the corner of 22<sup>nd</sup> street to the corner of 23<sup>rd</sup> street. A 2" mandrel was pulled through conduit with no issues found. Ground rod, tracer wire and pull string was installed.
- Conduit was proofed from the corner of 23<sup>rd</sup> street to the corner of 24<sup>th</sup> street with no issues found. Ground rod, tracer wire and pull string was installed.
- Conduit was proofed from the corner of 25<sup>th</sup> street on the northside to the middle of the block in front of the BP station with no issues found. Ground rod, tracer wire and pull string was installed.
  
- No further operations were performed on this date.

Company	Quantity	Notes
Richardson & Wayland	1 Superintendent 6 Laborers	
DTS	1 Supervisor	

**Equipment**

- (4) Trucks
- (2) Trailer
- (1) Vac Machine with water tank
- (1) Air Compressor
- (1) Directional bore machine
- (1) Mini excavator

**RICHMOND SIGNAL SYSTEM PHASE III  
DAILY REPORT**

**Special Inspections/Testing**

- None

**Safety**

- *(QCS generally does not have the authority to stop the performance of work for safety issues unless there is an imminent danger to on-site individuals that requires work cease immediately. If QCS becomes aware of safety concerns that may affect the on-site workers or the Owner's interest, QCS will bring such concerns to the attention of the construction contractor's on-site safety representative and the Owner.)*

**Visitors:**

- Taylor Venter (KHA), Ashley Lickliter (KHA), Tony Brunal, Daniel Wright, and Alexandra Warren (WRA) on site at the Rt. 5 and Main street intersection to discuss JB location and drain pipe location clearances.

**Request for Information:**

- None.

**Meetings:**

- None.

**Additional Comments:**

- None.

**Pay Quantities:**

None.

**Prepared By:**

Signed: *Christopher P. Goss*

Date: 11/03/2021



**RICHMOND SIGNAL SYSTEM PHASE III  
DAILY REPORT**

**DAILY PHOTOGRAPHS – Conduit Proofing, Installation of Tracer Wire and Pull String**





**RICHMOND SIGNAL SYSTEM PHASE III  
WEEKLY REPORT**

**Report Date: 11/19/21**  
**QCS Representative:**  
**C. Goss**

**Project Number:**  
**U000-127-895**  
**UPC 105890**

**Weather: Various**

**Work Executed**

**Pear Street and Rt 5 at NSX Bridge.**

**Richardson & Wayland Electrical:**

- Monday 11-15-2021 Contractor set up boring machine at the corner of Pear Street and began to shoot bore down to the crossover at the NSX bridge. Spray nozzle clogged approximately 75 ft. from destination and had to be pulled back. A second attempt was made the bore machine part broke and stopped operations for the day. Second crew went back and installed grounding rods and tracer wire at all locations up to this point.
- Tuesday 11-16-2021- Contractor continued to bore from Pear Street to the NSX bridge location. Once again, the spray nozzle clogged about 50 ft. from the destination and had to be pulled back. A second attempt was made but the drill hit the debris at the corner and could not make the turn to the final location. Drill was pulled out and operations were stopped for the day. Second half of crew installed electrical cabinets at the corners of 17<sup>th</sup>, 18<sup>th</sup>, 19<sup>th</sup> and 21<sup>st</sup> streets. Cabinets were bolted and sealed with no issues.
- Wednesday 11-17-2021- Contractor shot bore from the NSX bridge to the corner of Pear Street and pulled 2" conduit through bore. Contractor trenched halfway across the roadway on the eastside of roadway and set 2" conduit. Trench was backfilled with 21A material and topped with 8" of Perma-Patch.
- Thursday- 11-18-2021- Contractor set junction boxes at the corner of Pear Street and proofed conduit. Junction box was removed at the eastside of NSX bridge and conduit intercepted. New junction box was replaced and 4" conduit and 2" conduit piped in. Crew began to replace the brick pavers at this location.
- Friday 11-19-2021 – Contractor did not work on this day.
- No further operations were performed this week.

**RICHMOND SIGNAL SYSTEM PHASE III  
WEEKLY REPORT**

**Visitors:**

- Monday- None.
- Tuesday- Enrique Burgos (City) with Alex Warren (WRA) onsite with Daniel Wright and Inspector, met at Route 5 bridge location at 9:00 am.
- Wednesday- Don Sparrow, and Seth Gilley (City Traffic Signal Technicians) onsite at 3:30 PM. Benchmark onsite to mark utilities.
- Thursday- None.
- Friday- None.

**Contractor Progress:**

- Contractor is not on schedule. Contractor is now approximately (2) weeks behind schedule. Contractor is currently scheduling work for (5) 10-hour days per week.

**Additional Comments:**

- Wednesday-City had east bound lanes on Main Street down to the round-a-bout closed to traffic due to an accident taking down the traffic signals at the intersection at Rt. 5. Contractor worked out City's establish MOT and road closure to complete trench work.

**Pay Quantities:**

Monday 11-15-2021-None  
Tuesday 11-16-2021-None.  
Wednesday 11-17-2021 - None.  
Thursday 11-18-2021- None.  
Friday 11-19-2021- None.

**Prepared By:**

Signed: *Christopher P. Goss*

Date: 11/19/2021

**RICHMOND SIGNAL SYSTEM PHASE III  
WEEKLY REPORT**

**WEEKLY PHOTOGRAPHS – Boring Operations, Cabinet Installation, Roadway Trench Cut**

