VIRGINIA DEPARTMENT OF TRANSPORTATION

Minimum Requirements
for
Quality Assurance and Quality Control
on
Design Build
and
Public-Private Transportation Act
Projects

January 2012

Contents Amendment Record

This report has been issued and amended as follows:

Issue	Rev	Description	Date	Signed
1	0	Original Issue	August 20, 2007	
1	1	Provides a translation of the percentage base testing frequencies (QA/QC/IA and IV) into tangible quantifiable frequencies and work descriptions and effects the following tables: • Table 105.4, and • Table 105.5	July 28, 2008	
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Section 1. Introduction

1.1 Purpose

1.1.1 This Guide details the Virginia Department of Transportation (the Department) minimum requirements for Quality Assurance (QA) and Quality Control (QC) for Design-Build (DB) and Public-Private Transportation Act (PPTA or P3) projects. The entity under contract with the Department, referred to herein as "Concessionaire/Design-Builder", shall implement a Quality Assurance and Quality Control Plan (QA/QC Plan) under a Design-Build contract or a P3 Comprehensive Agreement. The QA/QC Plan is used interchangeably with the Quality Management System Plan (QMSP) for P3 Projects and defines the organization, work processes, and systems necessary to provide confidence and objective evidence that the facilities, components, systems, and subsystems that make up the Project meet the contract requirements. Unless specifically noted otherwise, projects referred to herein as "Design-Build" (DB) apply for both DB and P3 projects.

The production of a QA/QC Plan meeting these minimum requirements forms part of the submittals required under Design-Build Requests for Proposals (RFP) and P3 procurements. This Guide also details procedures for the Department to oversee the proper administration of a Concessionaire/Design-Builder's QA/QC Plan.

This Guide establishes criteria for obtaining consistency in the Department's approach to independent assurance, verification and oversight responsibilities on DB and P3 projects. It is recognized that contract requirements will vary from project to project and therefore project specific contract requirements will always take precedent in case of conflict.

1.1.2 In conforming to these minimum requirements, the Concessionaire/Design-Builder shall satisfy both State and Federal design and construction quality requirements.

1.2 Document Structure

1.2.1 This Guide sets out the required Quality Assurance and Quality Control plan requirements for both the design and construction phases of DB and P3 projects. The Guide is divided into five (5) sections as follows:

Section 1 – Establishes the purpose and document structure and includes a list of publications with which this Guide should be cross-referenced.

Section 2 – Provides a description of QA/QC Plan requirements including an organization chart for a basic Design-Build project.

Section 3 – Identifies a description of QA/QC staff roles and responsibilities including terms of reference for the key roles, reporting lines and key qualifications required.

Section 4 – Describes QA/QC Plan requirements for design including design review, Departmental approvals and design changes. The Design-Build Review, Approval and Quality Management Process is depicted in Figure 4-1.

Section 5 – Describes QA/QC Plan requirements for construction including among other requirements Departmental and Concessionaire/Design-Builder responsibilities, DB inspection, sampling and testing requirements, verification and acceptance requirements and Witness and Hold Points. Comparison Tolerances for Testing are listed in Table 5-1, Testing of Materials by the Department for Off-Site Plant QA Programs are listed in Table 5-2 and Minimum Requirements for Construction Inspection Checklists are included in Table 5-3.

1.2.2 The Guide includes six (6) appendices that contain the following information:

Appendix 1 – sets out the Definitions of Abbreviations, Acronyms and Terms used in this Guide.

Appendix 2 – sets out the Minimum Requirements for Concessionaire/Design-Builder's Design QA/QC Plan.

Appendix 3 – sets out the Minimum Requirements for Concessionaire/Design-Builder's QA/QC Plans on Design-Build projects including reference to contractual requirements.

Appendix 4 – sets out the Minimum Requirements for Concessionaire/Design-Builder's Inspection, Sampling and Testing of Definable Features of Work including reference to contractual requirements.

Appendix 5 – contains VDOT Special Provision for Project Communication and Decision Making (S100B00-0708).

Appendix 6 – contains Sample Checklists.

1.3 Reference Documents

1.3.1 The Department's Design-Build Contract Documents should be referenced in conjunction with this Guide. The following Parts are of particular relevance:

.1 Part 2 – Technical Information and Requirements

.2 Part 4 – General Conditions of Contract

.3 Part 5 – Division I Amendments to the Standard Specifications

1.3.2 For P3 projects, applicable sections of the technical requirements and the Comprehensive Agreement should be referenced in conjunction with this Guide.

1.3.3 The Concessionaire/Design-Builder shall take into account the FHWA Construction Program Management and Inspection Guide in developing the QA/QC Plan.

Section 2. Description of QA/QC Plan Requirements

2.1 General

2.1.1 These requirements are intended to assist the Concessionaire/Design-Builder in the preparation of an acceptable Quality Assurance (QA) Plan and an acceptable Quality Control (QC) Plan. The Quality Assurance and Quality Control Plan (QA/QC Plan) used interchangeably with the Quality Management System Plan (QMSP) for P3 Projects should define a uniform process approach to design and construction quality management; quality procedures, records keeping and document management/control that the Concessionaire/Design Builder shall adhere to throughout the duration of the Project, The QA/QC Plan (QMSP) should further describe the reporting and documentation processes and should outline appropriate responsibilities of the Concessionaire/Design Builder's organization. The QA/QC Plan (QMSP) consists of the Design QA/QC Plan (Design Quality Management Plan – DQMP) and the Construction QA/QC Plan (Construction Quality Management Plan – CQMP).

2.1.2 The QA Plan shall be separate and distinct from the QC Plan for both design and construction efforts. Both the QA Plan and the QC Plan are subsets of the overall QA/QC Plan. The submission of the QA/QC Plan shall be in accordance with the Department's RFP or P3 procurement documents. Following award of a contract, an acceptable plan must be submitted to and approved by the Virginia Department of Transportation (the Department) in writing prior to commencing any design or construction work. The Department may, in its sole discretion, partially approve the QA/QC Plan and may request minor modifications to the QA/QC Plan as necessary.

2.1.3 The QA/QC Plan shall detail:

.1 How the Concessionaire/Design-Builder shall provide QA and QC for both the design and construction elements of the Project, including but not limited to, sampling, testing, inspection, management control, change management, document control, communication requirements, and non-compliant work corrective action plans to ensure that the work conforms to the contract requirements;

.2 How the Concessionaire/Design-Builder's QA/QC program for both the design and construction elements shall be completed by a subcontractor, supplier, vendor, agent, or other entity with contractual obligations to complete design or construction elements of the Project;

.3 How the Concessionaire/Design-Builder's QA/QC organizations function, including the expected minimum number of full-time equivalent employees with specific QA or QC responsibilities with an organizational chart showing lines of authority and reporting responsibilities;

.4 The relationship between the QA and QC organizations and the design and construction organizations interface to ensure that the decisions made by QA/QC

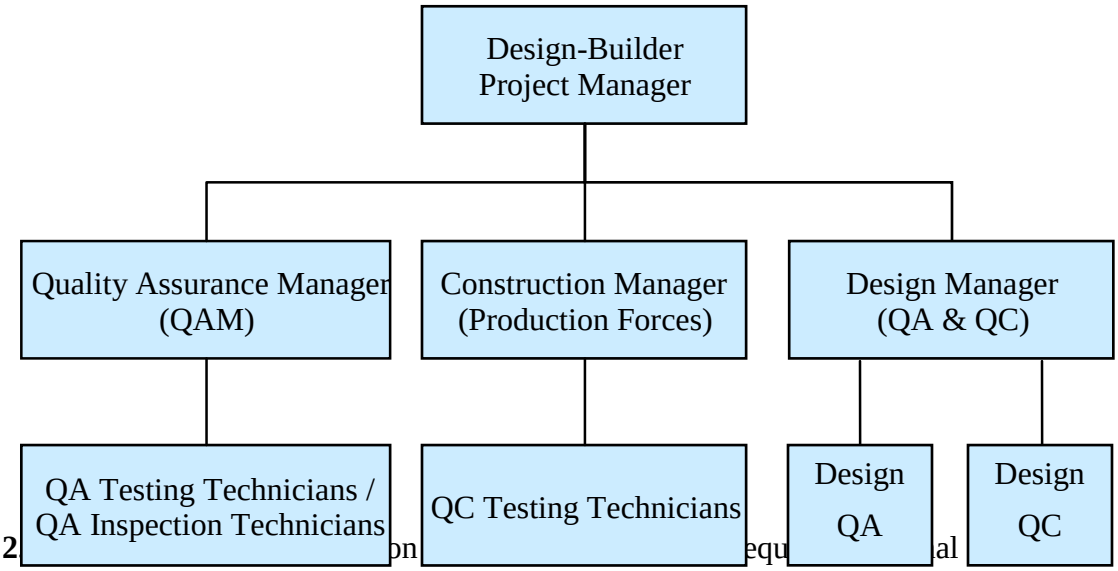
personnel are not based upon the impact such decisions may have on the Project's schedule, contractor's performance or project profitability; and

.5 That QA/QC shall be an integral part of each Work Package. That as part of each application for payment that includes completed Work Packages, Concessionaire/Design-Builder's designated Quality Assurance Manager shall certify that each Work Package has been completed in accordance with the Contract Documents, and that all required QA/QC tests, measurements, permits or other requirements have been completed and all non-conformance reports relative to the respective Work Package have been resolved. The Concessionaire/Design-Builder shall submit with each application for payment verifiable evidence from the Design Manager of the QA/QC reviews, including any checklists, summary data, high-level/outline calculations or design checks, and evaluations of the work and the qualifications of the responsible personnel that completed the work, etc., that the relevant QA or QC reviewer relied on to make its determination the work is complete and conforms to the requirements of the Contract Documents.

2.1.4 To further ensure organizational independence, the Construction QA organization shall be distinct and separate from the construction production forces staff. For design, the Design QA or QC functions may be performed by the same design organization. If design QA responsibilities are retained by the design organization the QA plan must show that the original designer is not responsible for the quality assurance of his/her own design work. All key personnel performing QA or QC functions shall be exclusively designated to such and shall not be assigned to perform conflicting duties or production work.

An example organizational chart illustrating the independence of the QA organization in the performance of a basic D-B project is shown in **Figure 2-1**.

Figure 2-1: Basic Organizational Chart for Design-Build Projects



2 on equ al procedures for high-risk or unique elements of a project. Such additional procedures may

include, for example, peer reviews by an independent firm, or a higher level of oversight or testing for critical construction elements. Any additional QA/QC procedures will be outlined in the contract documents. In the event of a conflict between this Guide and the Contract, the requirements set forth in the Contract shall take precedence.

2.2 Minimum QA/QC Plan Submittal Requirements

2.2.1 Concessionaire/Design-Builder shall submit its QA/QC Plan for both design and construction to VDOT for review and approval at the first meeting held after the Concessionaire/Design-Builder's receipt of Department's Notice to Proceed or the date set forth in the Notice to Proceed ("**Date of Commencement**"), unless the parties mutually agree otherwise in writing, as set forth in the Design-Build or P3 Comprehensive Agreement. Along with the QA/QC Plan submittal, the Design Manager and Quality Assurance Manager ("QAM") shall provide a presentation of the QA/QC Plan for both design and construction utilizing Project related scenarios. Project scenarios shall include but not limited to:

.1 Preparatory Inspection Meeting requirement, including incorporation of at least one each, Witness and Hold Point, as set forth in this Guide;

.2 At least one (1) material which the Department retains responsibility for testing, if any, as identified in this Guide;

.3 Situation arising requiring the issuance of a Non-conformance Report, subsequent review of the report, including completion of corrective measures and the issuance of a Notice of Correction of non-conformance work with proper log entries and proper interface with auditing and recovery requirements as set forth in Section 5.11 of this Guide for nonconforming Work resulting from:

a. defective equipment

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

.4 Inspection documentation capturing requirements as set forth in Section 5.18 of this Guide; as well as inspection of geotechnical elements that are to be performed and certified by a qualified license geotechnical engineer.

.5 Application for payment for Work Package which includes work element, including review and approval by Quality Assurance Manager.

.6 Detail two (2) sample entries in Materials Notebook showing completion of Form C-25, including subsequent submission and review by Department Project Manager as set forth in Section 5 of this Guide (see Chapter VII of Materials Manual of Instruction for Materials Acceptance and the Materials Notebook Program, and Section 805 of MOI to download Form TL-142S which is an example of a completed Materials Notebook.

Section 3. Concessionaire/Design-Builder QA/QC Staff Roles and Responsibilities

3.1 General

3.1.1 As part of the QA/QC plan submission process, fully detailed resumes with references shall be submitted to the Department identifying the Concessionaire/Design-Builder's QA and QC staff for all personnel that will be employed in a supervisory or management position. The persons or organizations performing QA or QC shall have sufficient authority and organizational autonomy to identify quality problems, and to initiate, recommend, and verify implementation of solutions. The Concessionaire/Design-Builder Quality Assurance Manager (QAM) shall have full authority to initiate a work stoppage and be able to recommend to the Department to withhold payment for design and/or construction activities that are not acceptable. This authority must be in writing from the Concessionaire/Design-Builder to the QAM and must be included as part of the QA/QC Plan submitted for Department approval. At a minimum, the Concessionaire/Design-Builder QA and QC staff shall include the following persons holding the required qualifications, as detailed in **Table 3-1**.

Table 3-1: Concessionaire/Design-Builder QA/QC Staff Roles and Responsibilities

Position	Responsibility	Reports To	Required Qualifications*
Concessionaire/ Design-Builder Project Manager	Responsible for the overall Project design, construction quality management, and contract administration for the Project.	Concessionaire/ Design-Builder at the executive level.	
QAM	Overall responsibility for the development of and adherence to the Design-Build QA/QC Plan.	1. Concessionaire/ Design-Builder Project Manager or other appropriate person at the executive level 2. Does not report to production forces. 3. Cannot have any involvement on construction operations for the Project.	1. Professional Engineer licensed by the State of Virginia; and 2. Appropriate supervisory experience in inspection and materials testing on relevant highway transportation projects or as specified in the Contract.

Position	Responsibility	Reports To	Required Qualifications*
QA Testing Technicians QA Inspection Technicians	Responsible for QA testing and/or inspection of items of work for conformance with plans and specifications.	QAM	1. Holds current Department materials certifications or others as noted in Sections 3.6 & 3.7 of this Guide for the types of testing and/or inspection that they are assigned to perform.
Concessionaire/ Design-Builder Design Manager	Responsible for the design portion of the Design-Build QA/QC Plan and for ensuring production of Construction Documentation in accordance with the QA/QC Plan.	Concessionaire/ Design-Builder Project Manager.	1. Professional Engineer licensed by the State of Virginia, and 2. Appropriate supervisory experience in design on relevant transportation projects.
Design QA Design QC	Responsible for QA or QC for design elements of the Project.	Design Manager.	1. When applicable, Professional Engineer licensed by the State of Virginia in the engineering discipline being reviewed. 2. Appropriate design experience in the engineering discipline being reviewed.
Concessionaire/ Design-Builder Construction Manager	Responsible for the construction portion of the Design-Build QA/QC Plan and for ensuring construction of the work in accordance with the QA/QC Plan.	Concessionaire/ Design-Builder Project Manager.	1. Appropriate supervisory experience in inspection or documentation or materials testing or combination thereof on relevant transportation projects, and 2. Any other requirements specified in the RFP or P3 procurement documents.
QC Testing Technicians QC Inspection Technicians	Responsible for QC testing and/or inspection of items of work for conformance with QC plans and specifications.	Contractor's production forces.	1. Holds current Department materials certifications or others as noted in Sections 3.6 & 3.7 of this Guide for the types of testing and/or inspection that they are assigned to perform.

* Unless otherwise stated in the RFQ, RFP or the P3 Procurement Documents

3.2 Concessionaire/Design-Builder Quality Assurance Manager (QAM)

3.2.1 The QAM shall be from an independent firm that has no involvement in construction operations for the Project, and shall be responsible for the QA inspection

and testing of all materials used and work performed on the Project, to include monitoring of the contractor's quality control (QC) program.

3.2.2 The QAM will ensure that all work and materials, testing and sampling are performed in conformance with the Contract, and the "approved for construction" plans and specifications.

3.2.3 The 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 Contract Documents and the Design QA/QC Plan.

3.3 Concessionaire/Design-Builder Design Manager

3.3.1 The Concessionaire/Design-Builder Design Manager is the individual with responsibility of coordinating the individual design disciplines to include design subconsultants and ensuring the overall Project design is in conformance with the Contract Documents. This person may be the same as the QAM, if approved by the Department.

3.3.2 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 report directly to the Design-Builder's Project Manager, and is responsible for all of the design, inclusive of QA and QC activities. This individual shall be responsible for implementing, monitoring and, as necessary, adjusting the processes to assure acceptable quality of the design work. Any adjustments that deviate from the written QA/QC Plan should be approved by VDOT prior to being implemented.

3.3.3 The Design Manager's QA/QC team shall adhere to the design QA/QC requirements presented in Section 4 of this Guide.

3.4 Design QA and QC

3.4.1 Members of the Design QA and QC team are responsible for review of all design elements to ensure the development of the plans and specifications are in accordance with the requirements of the Contract Documents. Design QA should be performed by one or more member(s) of the lead design team that are independent of the Design QC. The same member(s) of the lead design team should complete all design QA reviews throughout the duration of the Project.

3.4.2 In general, Design QA shall evaluate whether the designer assessed the problem appropriately, applied the correct analysis, and assigned qualified personnel to the task. Design QC shall include, but not be limited to, review of math and engineering computations, technical accuracy, and conformance to contract requirements to a level commensurate with the complexity of the design approach and the criticality of the design element.

3.5 Concessionaire/Design-Builder Construction Manager

3.5.1 The Concessionaire/Design-Builder Construction Manager is required to be on the Project site for the duration of the construction operations. This individual shall have responsibility for managing the construction process, to include all QC activities, to ensure the materials used and work performed meet contract requirements and the "approved for construction" plans and specifications. This individual shall be responsible for implementing, monitoring and, as necessary, adjusting the processes to assure acceptable quality of the construction work.

3.6 QA and QC Testing Technicians

3.6.1 QA and QC Testing Technicians are staff who perform on-site materials testing including, but not limited to, density, moisture, air content of concrete, slump, and other required materials field tests. QA Testing Technicians shall report directly to the QAM and are not responsible for project production. The QA Technicians shall be employed by a firm that is completely separate of production work and QC testing services. QC Testing Technicians are to fulfill the requirements for materials testing for Quality Control and may be employed by the Concessionaire/Design-Builder or subcontractor to the Concessionaire/Design-Builder.

3.6.2 The QA and QC Testing Technicians shall hold current Department materials testing certifications for the types of materials testing that they are assigned to perform. Prior to the start of each work activity, the QAM shall identify the QA Testing Technician(s) by name and provide a detailed qualification matrix for each type of testing required illustrating each technician's qualifications and respective test(s) that is (are) to be performed. The Concessionaire/Design-Builder Construction Manager shall coordinate with the QAM and identify the QC Testing Technician(s) prior to the start of each Work Package and provide a detailed qualification matrix for each type of testing required. These qualification matrices shall be submitted to the Department's Project Manager for review and approval prior to the start of each Work Package.

3.6.3 Material testing certifications include, but are not limited to, the following:

.1 Asphalt Concrete, Field

.2 Hydraulic Cement Concrete, Field

.3 Soils and Aggregate

.4 Pavement Marking

.5 Nuclear Safety, and

.6 Others, as identified in the Contract

3.6.4 The qualifications of laboratory technicians employed by a laboratory accredited by the AASHTO Accreditation Program (AAP) may be accepted for AASHTO test methods when confirmed by the laboratory's training and evaluation records and for such tests not covered by the Department's certification program.

3.7 QA and QC Inspection Technicians

3.7.1 Prior to the start of each Work Package, the QAM shall identify each QA Inspection Technician by name and provide a detailed qualification matrix for each type of inspection required.

3.7.2 Prior to the start of each Work Package, the Construction Manager shall identify each QC Inspection Technician by name and provide a detailed qualification matrix to the QAM for each type of inspection required.

3.7.3 QA and QC Inspection Technicians shall have the Department and other certifications applicable to the work to be performed. Such certifications may include:

.1 Asphalt Concrete, Field

.2 Hydraulic Cement Concrete, Field

.3 Soils and Aggregate

.4 Surface Treatment

.5 Slurry Treatment

.6 Guardrail Installation

.7 Pavement Marking

.8 Nuclear Safety

.9 OSHA 10-Hour

.10 E&S Inspector (administered by the Department of Conservation and Recreation)

.11 Work Area Protection, and

.12 Others as required by the nature of the Work and/or as identified in the Contract

3.8 Contact Information for Design Builder QA/QC Staff

3.8.1 The Concessionaire/Design-Builder shall ensure that the contact details of all QA/QC staff are maintained in a list issued to the Department with the QA/QC Plan and re-issued at each update of the list.

3.8.2 The list shall contain at a minimum the following details:

.1 Title

.2 Name

.3 Reports To

.4 Work Phone

.5 Cell Phone

.6 E-mail

Section 4. Design QA/QC Requirements

4.1 General

4.1.1 The QA and QC procedures shall be organized by each type of engineering discipline (e.g., structural, civil and utilities). These procedures shall specify measures to be taken by the Concessionaire/Design-Builder:

.1 To ensure that appropriate quality standards are specified and included in the drawings, specifications, and other design submittals and to control deviations from such standards, it being understood and agreed that no deviations from such standards shall be made unless they have been previously approved in writing by the Department at the Department's sole discretion;

.2 For the selection of suitability of materials, and elements of the Work that are included in the Project;

.3 To ensure the completed Work is safe and maintainable; and

.4 To ensure the constructability of design in order to optimize the potential benefits of design-build project delivery.

4.1.2 In general, design QA shall evaluate whether the designer assessed the problem appropriately, applied the correct analyses, and assigned qualified personnel to the tasks.

.1 QA shall address whether the design solution meets the contract requirements.

.2 QA also shall ensure that the work required by the contract documents is completed applying appropriate skill and experience in accordance with the Design-Build Contract or applicable portions of the Comprehensive Agreement for P3 procurements. At minimum, the following shall apply:

.1 Specific standards, methods, and requirements set forth in the contract documents;

.2 All legal requirements;

.3 All governmental approvals;

.4 The application of professional engineering judgment taking into consideration safety, operational requirements, level of service, life cycle costs and the current version of the specific standards, methods, and requirements set forth in the contract documents;

.5 Prudent industry practices, methods, techniques and standards and using the degree of care that would be expected to be exercised by a prudent, skilled and experienced Concessionaire/Design-Builder engaged in the same kinds of undertakings as the project under the same or similar conditions at the same time and locality of the Project; and

.6 The requirements of insurance policies required to be maintained in accordance with the contract documents.

4.1.3 Design QA should be performed by one or more member(s) of the lead designer team that are independent of Design QC. The same member(s) of the lead designer team should complete all design QA reviews throughout the duration of the project.

4.1.4 Design QC may be performed at the office where the work was conducted.

4.1.5 Design QC shall include review of math and engineering computations; technical accuracy; conformance to contract requirements; review of form, content and spelling, and coordination with other disciplines including construction. The design QC review will be carried out to a level commensurate with the complexity of the design approach and the criticality of the design element.

4.1.6 The QA/QC Plan shall specifically include constructability reviews and, as applicable, maintainability reviews.

4.2 Design QA/QC Plan

4.2.1 The Design QA/QC Plan shall be prepared such that the requirements for QA and the requirements for QC are detailed in individual plans or in separate sections of the overall plan such that they are capable of being read independently.

4.2.2 The Design QA/QC Plan shall set forth the following:

.1 All QA and QC procedures proposed by the Concessionaire/Design-Builder for the design process shall be included in the Design QA/QC Plan. Procedures shall be included for preparing and checking all drawings, specifications, and other design submittals to the Department to ensure that they are independently checked by experienced and qualified professionals prior to submission;

.2 Procedures to ensure that drawings, specifications, and other design submittals are to be stamped, signed and dated by the responsible Virginia licensed architect or engineer as required under the Contract provisions or by applicable laws. It is anticipated that a substantial portion of the Design QA/QC Plan shall rely upon the design consultant's use of licensed professionals who are governed by statutory requirements and standards of care;

.3 The level, frequency and methods of review for the adequacy of the design of the Project, including the methods for independent review of the final drawings, specifications, and other design submittals to ensure compliance with Department's functional requirements for the Project as outlined in the Contract Documents;

.4 Procedures for coordinating work performed by different persons in the same or adjacent area, fabrication shops, casting yards and other pertinent fabrication facilities at remote locations, work element or project feature, or in related tasks to ensure that conflicts, omissions or misalignments do not occur between drawings or between the drawings and the specifications and to coordinate the review, approval, release, distribution and revision of documents involving such

persons. The Design QA/QC Plan shall also set forth the procedures for ensuring QA and QC requirements are met for adequate right of way and avoidance of utility conflicts;

.5 Procedures to identify those elements of the Contract, drawings, specifications, and other design submittals, if any, requiring special construction QA and/or QC attention or emphasis, including applicable standards of quality or practice to be met, level of completeness and/or extent of detailing required, or Special Provisions to the Road and Bridge Specifications;

.6 Identification by firm, discipline, name, qualifications, duties, responsibilities and authorities for all persons and entities proposed to be responsible for design QA and QC activities, including sub-consultants; and

.7 Design QA/QC functions, including scheduled activities for design QA and QC, identifying the drawings, specifications, and other design submittals to be delivered to the Department for its review at each stage of the design or work phase of the Project, shall be described in the Design QA/QC Plan. These submittals and the review process shall be in accordance with the Design-Build Contract or P3 Comprehensive Agreement.

4.2.3 Minimum requirements for Design QA/QC Plans are further detailed in Appendix 2.

4.3 Design Quality Review

4.3.1 Prior to the release of the final drawings, specifications, and other design submittals, the Concessionaire/Design-Builder shall complete review by architects and engineers experienced in the appropriate disciplines(s). Each Contract submission shall be accompanied by a certification from the appropriate design or technical manager that the submission meets the requirements of the Contract and has been reviewed in accordance with the Design QA/QC Plan. In addition, the Concessionaire/Design-Builder shall review the submission and confirm the Contract and QA/QC procedures have been followed and properly documented.

4.3.2 The criteria used in such review shall include but not be limited to:

.1 Conformity of the final drawings, specifications, and other design submittals with the Contract.

.2 Assurance that all materials, equipment and elements of the Work provided for in such documents meet the Contract requirements and have been designed to perform satisfactorily for the purpose intended.

.3 The technical and grammatical accuracy, appearance, and organization of such documents;

.4 Verification that such documents have been checked and signed by the drafter, designer, and reviewers;

.5 Where required under the Contract, generally accepted architectural or engineering practices or applicable law, verification that such documents have been stamped, signed and dated by the responsible Virginia registered engineer or architect;

.6 Assurance that such documents fully provide suitable evidence for constructability, compatibility of materials and conformity to acceptance criteria for inspections and tests as provided in the Contract Documents; and

.7 Documentation is provided, where required and/or appropriate, to demonstrate that life-cycle costs and maintenance requirements have been considered in the design.

4.3.3 Concessionaire/Design-Builder's Design Quality Control Plan shall address interim design submissions, related to Preliminary Field Inspection (PFI); Field Inspection and Right of Way (FI/RW); additional interim design submissions; and Construction Documents that the Department may require; design review meetings/schedule; publishing and distribution of design review meeting notes and design submission status; and other Design Development Services requirements as set forth in Part 4 of the Design-Build Contract or applicable portions of the P3 Comprehensive Agreement.

4.3.4 The Design QA/QC Plan shall clearly demonstrate that all design-related documents (e.g., reports, design calculations, plans, specifications, special provisions and estimates) are technically reviewed by competent, independent reviewers; said documents must include procedures to correct errors and deficiencies in the design documents prior to submitting them to the Department for review. Minimally, the Design QA/QC Plan shall identify design engineer, detailer, checker, quality assurance engineer, and engineer in responsible charge by organization, name and resume, including sub-consultants and interface among design consultants.

4.3.5 The Design QA/QC Plan shall identify other contract submissions that may fall outside the Design Manager's expertise. For each of these submissions, a QA and QC plan shall be developed, with appropriate staff identified for both QA and QC functions. Such other contract submissions may include, but not be limited to: ROW appraisals, data entry and RUMS, including completeness of contract information, utility agreements, and surplus property data.

4.4 Department Approvals and Review of Design Work

4.4.1 The Design Manager shall oversee the performance of all the design oversight reviews. The Department may participate in these reviews. Under this procedure, the Design Manager will provide the Department with draft design plans for review and (where required) approval to confirm that the design work complies with the requirements of the Contract Documents, especially requirements for design development and any Technical Information and/or Technical Requirements, before the Concessionaire/Design-Builder initiates construction activities on the Project.

4.4.2 Any review comments made by the Department will be provided, in writing, to the Concessionaire/Design-Builder. The Department will provide timely reviews per the Contract and (where required) approvals of interim design submissions, drawings, specifications, and other design submittals consistent with the turnaround times set forth in Concessionaire/Design-Builder's schedule, provided that Department shall have twenty-one (21) days after receipt of such submissions to act upon such submissions unless otherwise provided for in the Contract.

4.4.3 The Concessionaire/Design-Builder shall be solely responsible, at no additional cost to the Department, for the schedule impacts and costs of revisions arising from the Department's review of the drawings, specifications, and other design submittals for consistency with the requirements of the Contract and caused by the Concessionaire/Design-Builder's noncompliance with contract requirements.

4.4.4 In addition to contractual reviews, the Department may conduct regular monthly progress meetings in which quality issues are reviewed, discussed, and addressed.

4.5 Quality Assurance and Quality Control of Design and Field Changes

4.5.1 Changes, including field changes, in the design of the Project or any portion thereof as shown on the Construction Documents, shall be subject to design QA and QC measures and procedures commensurate with those applied to the original design of the portion of the Project being changed. Further, all changes shall be approved in writing by the organization that performed the original design, with the additional written acknowledgement and approval of the change by the Design Manager with recommendation for approval by the Department. Documents containing design and/or field changes shall be distributed according to the requirements of this Section 4. Where required, revisions shall be signed and sealed.

4.6 Design QA/QC Overview

4.6.1 A flow chart depicting the design review, approval and quality management process is shown in **Figure 4-1**.

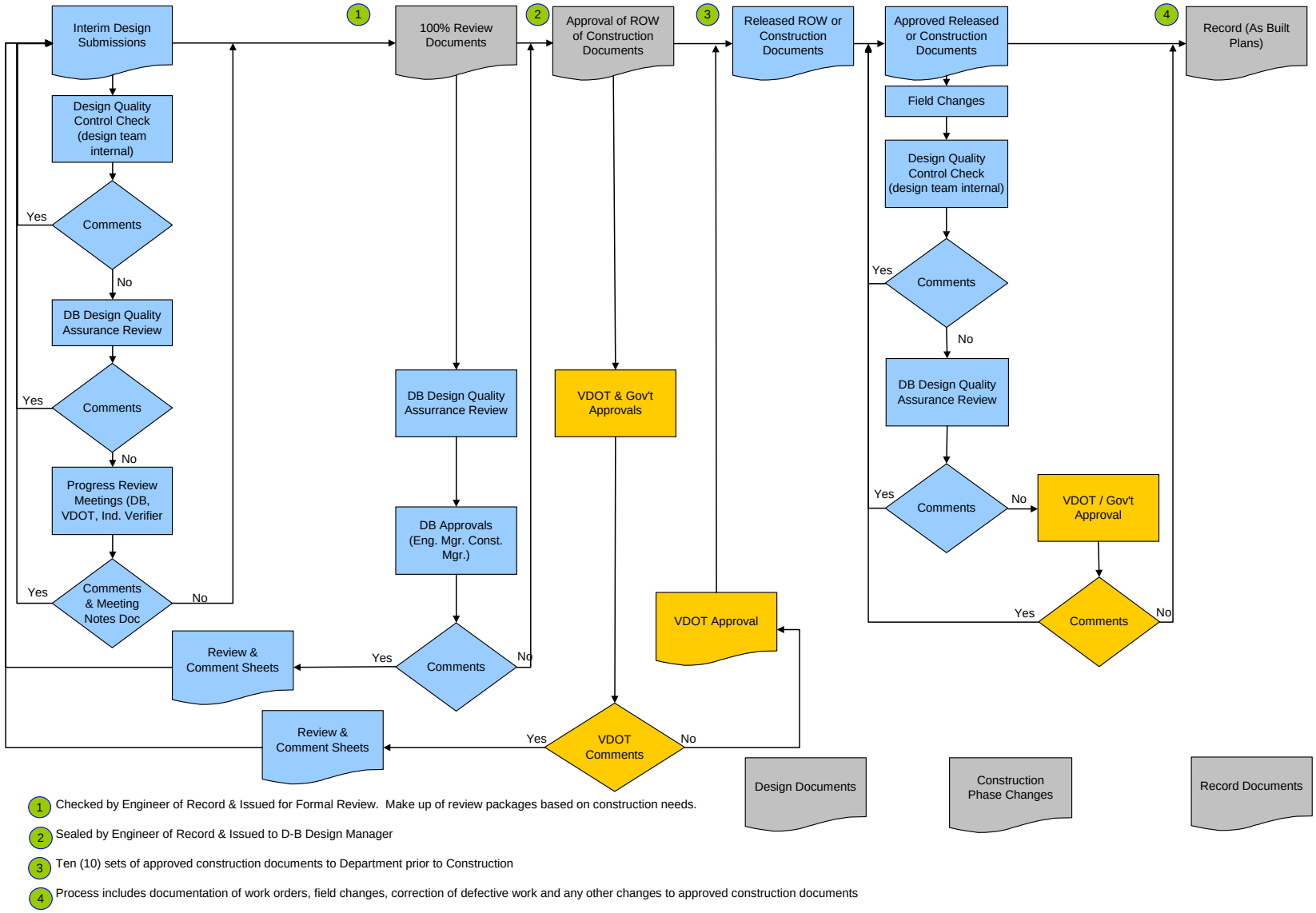


Figure 4-1: Design-Build Review, Approval and Quality Management Process

Section 5. Construction QA/QC Requirements

5.1 General

5.1.1 The Concessionaire/Design-Builder shall be responsible for the quality of workmanship and materials incorporated into the Project. The Concessionaire/Design-Builder's QA and QC measures shall insure that operational techniques and activities provide workmanship and materials of acceptable quality. Concessionaire/Design-Builder sampling and testing shall be performed to control the processes and determine the degree of workmanship and materials compliance with the Construction and Contract Documents.

5.1.2 The Concessionaire/Design-Builder shall develop, operate and update as required a QA/QC Plan which will detail how the requirements of this Section 5 will be achieved.

5.1.3 The Contract may require specific QA and QC measures for certain materials. When so required, the Concessionaire/Design-Builder shall provide all personnel, equipment, supplies, and facilities necessary to perform QA and QC functions, obtain samples, perform tests and inspections required in the Construction and Contract Documents.

5.1.4 The QAM shall certify, as part of each request for payment, that all of the Work has been completed in conformance with the requirements of the approved Construction QA/QC Plan, the Construction Documents and the Contract.

5.2 Construction QA/QC Plan

5.2.1 The Construction QA/QC Plan shall detail how the Concessionaire/Design-Builder will achieve the minimum requirements for Construction QA/QC set out in this Section 5. It is imperative that the Construction QA/QC Plan adequately distinguishes between the separate functions of QA and QC, as described in this Guide. The Construction QA/QC Plan shall therefore be prepared such that the requirements for QA and the requirements for QC are detailed in individual plans or in separate sections of the overall plan such that they are capable of being read independently.

5.2.2 The minimum content requirements of the Construction QA/QC Plan are as follows:

.1 Describe the Concessionaire/Design-Builder's QA organization and QC organization, including the minimum number of full-time equivalent employees, including Design Team members, with specific Construction QA and QC responsibilities and including an organizational chart showing lines of authority, functional relationships and reporting responsibilities;

.2 List by discipline the name, qualifications, duties, responsibilities and authorities for all persons, to include Design Team members, proposed to be responsible for Construction QA and QC;

.3 List current and relevant certifications for technicians;

.4 Demonstrate how QA and QC activities will be reflected in the project progress schedule integral to Work Package requirements as set forth in the Design-Build or P3 Contract;

.5 Produce submittal schedule integral to Work Package requirements as set forth in the Design-Build or P3 Contract;

.6 Detail inspection requirements, the Inspection Plans, which will include a detailed description of testing and inspection activities and frequencies that meet the minimum requirements outlined in the attached Appendix 3, Table A-3 and Appendix 4, Table A-4;

.7 Provide Quality Control and Quality Control sampling, testing, and analysis plan with frequencies, location and methods that meet the minimum requirements outlined in the attached Appendix 3, Table A-3 and Appendix 4, Table A-4. Include a description of how random locations for testing and sampling are determined;

.8 Describe procedures for instrumentation and survey monitoring for verification of the performance of the project geotechnical and pavement features;

.9 Describe procedures for load testing and integrity testing required to verify adequacy of the foundation capacity, soil reinforcement elements, or adequacy of ground stabilization or as otherwise set out in the Contract;

.10 Identify the accredited laboratory(ies) to be used for each type of testing;

.11 Provide current and relevant certifications for each test the laboratory will perform. Laboratory certifications for each test method applicable to the project shall be maintained for the entire duration of the project and confirmed by the QAM prior to submission of each Work Package;

.12 Specify documentation for QA and QC activities; and

.13 Demonstrate procedures to meet the Department's requirements for corrective action when Quality Assurance and/or Quality Control criteria are not met. For example, demonstrate how non-compliant material will be addressed at the construction site before placement.

5.3 Preparatory Inspection Meetings

5.3.1 Prior to the start of any work activity the Concessionaire/Design-Builder shall hold a Preparatory Inspection Meeting to ensure that all project personnel have a thorough understanding of the upcoming work. The purpose of the Preparatory Inspection Meeting is to provide coordination and communication between the Concessionaire/Design-Builder's production personnel, the appropriate Design Team members, QC personnel and the QAM's personnel, as well as the Department's (Owner's) Independent Assurance (OIA) and Verification Sampling and Testing (OVST)

personnel. Work activities and/or Work Packages should generally correspond to the sections of the Department's Standard Road and Bridge Specifications.

5.3.2 The Preparatory Inspection Meeting shall include discussions of what will be accomplished, by whom it will be performed, and where, when, and how the work will be done. The Preparatory Inspection Meetings are to ensure that all parties have the same understanding of the design intent and to confirm the completeness and suitability of the plans. These inspection meetings also ensure that all parties have the appropriate plans, specifications, manufacturer or vendor requirements, and any special details and/or submittals. Any safety regulations and procedures that need to be followed should be addressed at this meeting. At this time, the QA (IA and IVST) and/or QC-approved inspection checklists for the specific work package or activity shall be reviewed to confirm completeness and suitability.

5.3.3 The Preparatory Inspection Meeting shall be completed just prior to the beginning of the scheduled activity; all preliminary documents shall be reviewed as outlined in Appendix 3, Table A-3 and Appendix 4, Table A-4. The Department's OIA and OVST personnel shall be invited to attend the Preparatory Inspection Meetings but are not required to attend. The meetings shall be planned and conducted by the QAM who, in turn, shall arrange for minutes of the meeting to be taken to document any actions, clarifications and understandings related to the construction of the item or definable feature of work that may not otherwise be clearly documented elsewhere. Meeting minutes will be distributed to all attendees, the Department's Project Manager and Department's OIA and OVST personnel even if they are not present. Minutes shall be reviewed and finalized no later than two (2) business days after the meeting or as otherwise stipulated in VDOT Special Provision for Project Communication and Decision Making (S100B00-0708). A copy of Special Provision S100B00-0708 is provided in Appendix 5. Preparatory Inspection Meetings are classified as Hold Points and shall be identified in the Concessionaire/Design-Builder's QA/QC Plan and in the CPM Schedule.

5.4 Concessionaire/Design-Builders QA and QC Inspections

5.4.1 The Concessionaire/Design-Builder shall provide both Quality Assurance and Quality Control inspections for all work activities and Work Packages for conformance with the construction requirements in the Construction and Contract Documents.

5.4.2 Both the QA (IA and IVST) and QC components of the Construction QA/QC Plan shall contain separate inspection plans for each construction work item included in the Project whether performed by the Concessionaire/Design-Builder or a subcontractor or vendor. Work items shall be definable features or items of work meeting the requirements set forth in the Design-Build or P3 Contract.

5.4.3 The Construction QA/QC Plan shall use industry standard inspection procedures as well as those outlined in the Department's Construction Manual, Inspection Manual, Materials Manual of Instruction, Road and Bridge Standard Specifications, Survey Manual and the minimum requirements outlined in the attached Appendix 3, Table A-3 and Appendix 4, Table A-4.

5.4.4 During the design of the Project, each item of work shall be reviewed to determine what significant characteristics of the item need to be monitored during construction in the field. This review is to ensure that the completed Project will function in accordance with the design intent over its expected lifetime. The inspection plans shall include the appropriate criteria, tests, and inspection requirements identified in the Contract and requirements as set forth herein. The following elements shall be addressed within each item inspection plan:

.1 Identification – Work items included in the plan.

.2 Characteristics – What characteristics of the item(s) will be inspected and to identify design team members that are required to be involved in the inspection.

.3 Acceptance Criteria – Directly or by reference, provide sufficient information for the inspector to use to determine if the item or activity is acceptable or not.

5.4.5 Maximum use of checklists shall be made for the purpose of QA and QC Inspection. The plan should indicate the actions to be taken for items found to be non-conforming and all the steps necessary to determine the extent of the non-conformance.

5.4.6 Inspections shall be performed during all phases of the Project from Notice to Proceed to Final Acceptance in order to assure that the work meets, and is being performed in accordance with Construction Documents and the Contract.

5.4.7 Appropriate follow-up inspections, sampling and testing of materials shall be performed to satisfy, at a minimum, the frequencies shown in Appendix 3, Table A-3 and Appendix 4, Table A-4 as each item of work progresses to assure consistency in workmanship, compliance with contract requirements including design and Construction Documents, and to assure satisfactory performance of the work in service.

5.5 Concessionaire/Design-Builder QA and QC Sampling and Testing

5.5.1 The Concessionaire/Design-Builder field and laboratory sampling and testing shall be performed at frequencies specified in the minimum requirements outlined in Appendix 3, Table A-3, the Department's current Standard Road and Bridge Specifications, Special Provisions, and the Materials Manual of Instruction and other documents as appropriate and approved by the Department and/or as otherwise specified in the Contract. Sampling and testing shall be performed by qualified testing personnel as defined in Section 3 of this Guide. Concessionaire/Design-Builder QA sampling and testing shall consist of both Independent Assurance (QAM IA) and Verification Sampling and Testing (QAM VST).

5.5.2 The Concessionaire/Design-Builder shall furnish copies of QA (IA and IVST) and QC test results to the Department's Project Manager or other authorized Department representative within 24 hours of completing the test result of the acquired sample or the next day of business. The Department Project Manager or authorized Department representative may allow submissions electronically.

5.5.3 The Concessionaire/Design-Builder shall provide to the Department a testing plan for each material type that meets the minimum frequencies referenced above for separate

QA (IA and IVST) and QC testing. The testing plan shall be developed using a random selection process such as ASTM D 3665 and shall reflect the proposed total project quantities as may be calculated in the project drawings, specifications, and/or other design submittals. The test plan shall also include the estimated total number of QC, QAM IA, QAM VST, OIA and OVST tests required based on the calculated quantities. The testing plan, including quantity and testing estimates shall be submitted and approved by the QAM with recommendation for approval by the Department prior to the beginning of production or placement of the material.

5.6 Concessionaire/Design-Builder QA and QC Laboratories

All sampling and testing shall be performed by a laboratory that is accredited in the applicable AASHTO procedures by the AASHTO Accreditation Program (AAP). For test methods not accredited by AAP, the laboratory must comply with AASHTO R18 (most current Edition) and must be approved by the Department at its sole discretion.

5.7 Records

5.7.1 The Concessionaire/Design-Builder shall prepare separate test reports for QA (IA and IVST) and QC activities, meeting the requirements of AASHTO R18 or may use the current appropriate Department forms. The Concessionaire/Design-Builder shall also prepare, maintain, and submit to the Department's Project Manager completed test records and final materials certification in accordance with the requirements of these Minimum Requirements for QA (IA and IVST) QC and the Department's Construction Manual, and Materials Manual of Instruction.

5.8 Department's Independent Assurance (OIA) and Verification Sampling and Testing (OVST)

5.8.1 The Concessionaire/Design-Builder's laboratory shall participate in the Department's Independent Assurance and Verification Sampling and Testing Program. Findings of all Independent Assurance observations and test results will be provided to the QAM by the Department's Project Manager. Failing test results will be communicated immediately to the QAM by the Department's Project Manager or designated authorized representative. The Concessionaire/Design-Builder shall immediately take corrective action to resolve any noted deficiencies.

5.8.2 Department's Independent Assurance (OIA) and Owners Verification Sampling and Testing (OVST) will be performed by the Department to validate Concessionaire/Design-Builder QA/QC sampling and testing program.

5.8.3 The Department shall hold final authority for determining the acceptance of materials and workmanship incorporated into the Project. The acceptance decision will consider;

.1 Results of Concessionaire/Design-Builder QA (IA and IVST) and QC sampling and testing at specified frequencies and locations,

.2 The Department's Independent Assurance (OIA) and Verification Sampling and Testing (OVST) at specified frequencies and locations,

.3 Inspection by the Department of the attributes and processes that may affect the quality of the finished product, and

.4 Any dispute resolution procedures to resolve discrepancies between the Department's Verification Sampling and Testing and the Concessionaire/Design-Builder sampling and testing.

5.9 Resolution of Discrepancies in Test Results

5.9.1 If a discrepancy in the test results occurs, a cooperative effort by the Department and the Concessionaire/Design-Builder to identify the cause of the non-specification material or the discrepancy in the test results will include the following actions:

.1 Check of test data, calculations and results;

.2 Observation of the Concessionaire/Design-Builder's sampling and testing by the Department's Project Manager; and

.3 Check of test equipment by the Department's Project Manager.

5.9.2 When the source of test result discrepancies between the Concessionaire/Design-Builder and the Department's laboratories cannot be resolved, a referee split sample shall be obtained and tested; this work will be performed by the Department utilizing an independent laboratory. The testing of the sample will be performed in duplicate by the independent laboratory without knowledge of the specific project conditions such as the identity of the Concessionaire/Design-Builder, the test results of the Department or Concessionaire/Design-Builder, or the specification targets. The results of these tests will be binding on both the Concessionaire/Design-Builder and the Department. The Concessionaire/Design-Builder or its representative may witness the testing if requested. Costs incurred for referee testing will be paid by the party found in error, at the established laboratory rates.

5.9.3 A comparison of tolerances which will trigger the referee and disputes processes is summarized in **Table 5-1**. Some of the referee procedures are presented in the Materials Manual of Instructions.

Table 5-1: Comparison Tolerances for Testing

Test	IA Comparison Tolerance	Source
Soil/ Aggregate Wet Density using Nuclear gauge in Direct Transmission	Soil – 2.1 pcf Subbase – 3.0 pcf Aggregate Base – 3.0 pcf	Values adjusted from AASHTO T-310
Soil/Aggregate Density using Sand Cone	2.0 pcf	Values adjusted from ASTM D1556
Soil/Aggregate Moisture using Nuclear gauge (backscatter)	Soil – 2.1 pcf Subbase – 3.0 pcf	Values adjusted from AASHTO T-310

Test	IA Comparison Tolerance	Source
	Aggregate Base – 3.0 pcf	
Soil/Aggregate Moisture determined by oven dry	14% difference*	ASTM D2216
One Point Proctor – density Lab Proctor – density	4.5 pcf 4.5 pcf	AASHTO T-99
One Point Proctor - moisture	15% difference*	AASHTO T-99
Concrete Slump	0.82 inch for 1” to 2” slump 1.10 inch for 3” to 4” slump 1.50 inch for 5” to 6” slump	ASTM C143
Concrete Air	0.8% points using Pressure Method 32% difference using Volumetric Method	ASTM C231 ASTM C173
Concrete Temperature	2 degrees F	ASTM C 1064
Concrete Unit Weight	2.31 pcf	ASTM C138
Concrete Permeability	51% difference*	VTM 112
Concrete Strength - Single Operator Concrete Strength - Multiple Operators	8% difference on the average of 3 cylinders 15 % difference on the average of 3 cylinders	Values adjusted from ASTM C39
Asphalt Bulk Specific Gravity Identical plug/core Plug/core –split sample (close proximity)	Less than 0.015 Less than 0.030	Values adjusted from AASHTO T-166
* Percent difference calculation shall be % diff ≤ ({absolute value[W_1-W_2]} / ((1/2) * (W_1+W_2)))*100		

5.9.4 The testing of referee samples to resolve disputes will be performed as set forth in the Section 5.9.2. In addition to its testing responsibilities, the Department will also perform Owners Independent Assurance and Owner Verification Sampling and Testing inspections as outlined in Appendix 3, Table A-3 and Appendix 4, Table A-4. The QAM will resolve QAM IA and QAM VST discrepancies with QC. The Department will resolve OIA and OVST discrepancies with the QAM. This represents a Hold Point until the discrepancy is resolved.

5.9.5 Any material deemed unacceptable shall be handled in accordance with Section 5.12 of this Guide.

5.10 Quality Assurance Auditing and Nonconformance Recovery Plan Requirements

5.10.1 The Concessionaire/Design-Builder shall establish and maintain a Quality Assurance Auditing and Nonconformance Recovery Plan (AR Plan) for uniform

reporting, controlling, correction and disposition and resolution of nonconformance (including disputed nonconforming items) issues that may arise on the Project. The Concessionaire/Design-Builder's AR Plan shall establish a process for review and disposition of nonconforming workmanship, material, equipment or other construction and design elements of the Work including the submittal Design Review process. The AR Plan shall specifically address a recovery plan to increase QA (IA and IVST) and QC testing frequencies for tests that fail to meet comparison tolerances as set forth in Table 5-1.

5.10.2 Further, the AR Plan shall clearly delineate the Concessionaire/Design-Builder's procedures for addressing construction and design deficiencies in the Work and shall also address submittal register submissions which have been delayed by more than 60 days or undergoing more than two submissions. The Concessionaire/Design-Builder's deficient work, delays of submissions, and/or repetitively-revised submissions shall be addressed in such a manner as not to cause additional oversight by the Department.

5.10.3 In addition to the requirements outlined in Part 4, Section 2.10 or as otherwise set out in the Comprehensive Agreement for P3 projects, the Concessionaire/Design-Builder's AR Plan shall include recovery measures necessary to commence correction of such nonconforming Work, including the correction, removal or replacement of the nonconforming Work and any damage caused to other parts of the Work affected by the nonconforming Work, at no additional cost to the Department. The timing for the recovery plan submission shall be in accordance with the requirements of Part 4, Section 2.10.2 or as otherwise set out in the Comprehensive Agreement for P3 projects.

5.10.4 Where deficiencies in the Work can be corrected, the QAM shall cause performance of such corrective action as is appropriate. Re-tests or inspections shall be made by the QAM to determine the acceptability of the materials after corrective measures have been taken. The cost of removing, replacing or correcting defects in the materials will be the sole responsibility of the Concessionaire/Design-Builder at no additional cost to the Department. The cost of repairing or replacing other materials or Work damaged by the removal, replacement or correction of defects in the workmanship and materials shall be the sole responsibility of the Concessionaire/Design-Builder at no additional cost to the Department.

5.10.5 Control procedures shall provide for identification, evaluation, segregation and, when practical, disposition of nonconforming material, equipment or other elements of the Work and for notification to the Concessionaire/Design-Builder's Project Manager, the Department Project Manager and all personnel involved in the affected Work. The responsibility for review and for the disposition of nonconforming material, equipment or other Work shall be as established by the Construction QA/QC Plan and at a minimum shall provide for the following:

.1 Nonconformance Procedures – Maintain and use procedures that define methods and responsibilities for identification, documentation, control, and processing of nonconforming items. A nonconformance exists when equipment, parts, materials or services exhibit deficiency in physical characteristics, functional performance, or documentation. Apply nonconformance procedures to all items, including actions

associated with installation and construction which fail to conform as specified or to other product descriptions. Develop a Nonconformance Report (NCR) form to document and provide the following information:

.1 Identification of nonconformances

.2 Documentation

.3 Evaluations/Recommendations

.4 Separation/removal/tagging

.5 Recommendation for "repair" or "use as is" dispositions

.6 Cause of nonconformance

.7 Proposed corrective action to prevent recurrence

.8 Responsibility for accomplishing corrective action

.9 Schedule for resolution

.2 Nonconformance Log – Develop and maintain Nonconformance Log to enable tracking of nonconformances. Include necessary information to trace nonconformance back to initial documentation and to summarize status.

.3 Reports and Disposition – Respond to the NCRs by date specified on NCR and include investigative actions, causes of nonconformances, how nonconformances were dispositioned, and corrective actions taken. Dispositions of "use as is" and "repair" for nonconforming items require review and acceptance by the Department Project Manager and concurrence by the Concessionaire/Design-Builder Design Manager and the QAM.

.4 Status Tags – Define procedures for controlling use, logging, installation, and authorized removal of status tags. Authorization for removal can be approved only by originator of NCR or that person's supervisor and the QAM, and only when demonstrated that nonconforming item meets acceptance criteria or has been reviewed and Accepted for use by the Department Project Manager. Unauthorized removal of nonconformance status tags is prohibited.

.5 Corrective and Recovery Action – The Construction QA/QC Plan shall establish and maintain written procedures for:

.1 Investigating the cause of nonconforming material, equipment or other elements of the Work and the corrective action needed to prevent recurrence (such as increased sampling and testing frequencies, etc.)

.2 Analyzing all processes, work operations, concessions, quality records, service reports, and audits to detect and eliminate potential causes of nonconforming material, equipment or other elements of the Work

.3 Initiating preventive actions to deal with problems at a level corresponding to risks/deficiencies encountered

.4 Applying controls to ensure that effective corrective actions are taken

.5 Implementing and recording changes in procedures resulting from corrective action.

5.11 Correction of Nonconforming Work

5.11.1 Any deficient condition, whether the result of poor workmanship, use of materials containing defects, damage through carelessness or any other cause, found by, or disclosed to, the QAM and/or Department shall be removed and replaced by work and materials which conform to the Construction and Contract Documents or shall be remedied unless otherwise agreed upon by the Department as noted in Section 5.11.2 of this Guide. Upon failure on the part of the Concessionaire/Design-Builder to comply promptly with any order to remedy, remove or replace Work which is nonconforming or contains defects, the Department will notify the QAM that payment shall be withheld not only for that portion of the Work in nonconformance, but for that portion of the quality plan Work Package shown in the CPM schedule. The Department Project Manager may also cause such nonconforming Work or deficiency to be remedied or removed and replaced by separate contractors employed by the Department at the Concessionaire/Design-Builder's expense. In such event, the costs of such removal, remediation and replacement shall be deducted from any monies due or to become due the Concessionaire/Design-Builder under the Contract.

5.11.2 In the event the QAM and/or Department finds, as a result of monitoring of the Concessionaire/Design-Builder quality assurance and quality control activities, that any materials, equipment or the finished product in which materials, equipment or finished product are used are not in conformity with the Construction Documents and Contract requirements, the Department may elect in its sole discretion to accept otherwise unacceptable Work at a reduced price. If the Department determines that the Work should be accepted, the Concessionaire/Design-Builder may initiate a deductive Work Order request which will provide for an appropriate adjustment in the Contract Price in accordance with Part 4, Section 9.4. For P3 projects, payment shall be made to the Department.

5.11.3 In making a determination on the acceptability of nonconforming work the Department reserves the following rights:

.1 Right of Rejection – If damage, defect, error, or inaccuracy is found in any specified item or Work, the Department has right to put the Concessionaire/Design-Builder on notice of corrective action to bring item or Work into conformance with the Construction and Contract Documents.

.2 Correction Costs – Costs incurred in correcting rejected items or Work will be borne by the Concessionaire/Design-Builder. Remove rejected items from the Project unless in-place correction is reviewed and accepted by the Department or as noted in Section 5.11.2.

.3 Investigative Costs – The Department may require the Concessionaire/Design-Builder to provide test apparatus and labor to investigate, inspect, and test

defective Work or nonconforming materials. Correct deficiencies if Work or materials are in nonconformance.

5.11.4 If the Department so directs at any time prior to Final Acceptance, the Concessionaire/Design-Builder shall remove or uncover such portions of the finished Work as may be directed. After examination, the Concessionaire/Design-Builder shall restore such portions of the Work to the standards required by the Construction and Contract Documents.

5.11.5 Should the Work thus exposed or examined prove acceptable the Concessionaire/Design-Builder may submit a Work Order for an adjustment in the Contract Price and, if appropriate, Contract Time for the Work subject to, and in accordance with, Changes in the Work, for the uncovering or removing and replacing of the covering or making good of the finished Work. Should the Work so exposed or examined prove unacceptable, the uncovering or removing and replacing or satisfactorily improving shall be at the Concessionaire/Design-Builder's sole expense and time.

5.12 Rejected Material

5.12.1 The following actions shall be undertaken with regard to defective materials:

.1 Rejected by Concessionaire/Design-Builder (QAM IA, QAM VST or QC): The Concessionaire/Design-Builder shall remove any defective material and replace it with new material at no additional cost to the Department. Any such new material shall be sampled, tested and statistically evaluated for acceptance in accordance with the Concessionaire/Design-Builder's Construction QA/QC Plan.

.2 Rejected by the Department (OIA or OVST): The Concessionaire/Design-Builder may remove any defective material and replace it with new material at no additional cost to the Department. The Department may elect in its sole discretion to accept otherwise unacceptable material at a reduced price. If the Department determines that the material should be accepted, the Concessionaire/Design-Builder may initiate a deductive Work Order request which will provide for an appropriate adjustment in the Contract Price in accordance with Part 4, Section 9.4. For P3 projects, payment shall be made to the Department.

5.13 Non-Statistical Acceptance of Small Quantities of Materials

5.13.1 The Department may elect to allow the QAM to accept small quantities of materials without normal sampling and testing frequencies. The determination to accept materials using this provision rests solely with the Department. Structural concrete will not be considered under the small quantity definition.

5.13.2 The Department may consider an item as a small quantity if the proposed project quantity for a specific item is less than one sub-lot or one-half of a sub-lot for mainline paving.

5.13.3 Factors that the Department will consider prior to use of small quantity acceptance are:

.1 Has the material been previously approved?

.2 Is the material certified?

.3 Is there a current mix design or reference design?

.4 Has it been recently tested with satisfactory results?

.5 Is the material structurally significant?

5.13.4 Small quantity acceptance may be accomplished by visual, certification, or other appropriate methods. Acceptance of small quantities of materials by these methods must be fully documented. Documentation of materials under these methods must be provided by the QAM accepting the material. For visual documentation, an entry should be noted on field records, with a statement as to the basis of acceptance of the material and the approximate quantity involved. A separate list of items and quantities accepted on visual inspection shall be maintained by the QAM.

5.14 Witness and Hold Points

5.14.1 Witness and Hold Points shall be established where notification of the Department and/or the Concessionaire/Design-Builder's design team (for elements of a project that require design team members certification prior to continuation of Work), where applicable, is required for observing or visually examining a specific work operation or test. Witness Points are points identified within the Construction QA/QC Plan and CPM schedule which require notification of the Department and/or design team, where applicable. Work may proceed beyond a Witness Point with or without participation by the Department provided proper notification has been given. However, Work shall not proceed until certification from the required design team member is obtained. Hold Points are mandatory verification points identified within the Construction QA/QC Plan and CPM schedule beyond which work cannot proceed until mandatory verification is performed. Witness and Hold Points shall be identified in the Construction QA/QC Plan and CPM schedule where critical characteristics are to be measured and maintained, and at points where it is nearly impossible to determine the adequacy of either materials or workmanship once work proceeds past this point.

5.15 Witness and Hold Point Coordination

5.15.1 The QAM shall designate a primary point of contact for notifications for inspection at Hold Points and Witness Points. An alternate individual may be designated to function in this capacity in his/her absence. For Witness and Hold points where the Department's involvement is required, the Department's Project Manager or designee will be designated to handle responses to the Concessionaire/Design-Builder with written reports or releases.

5.15.2 The time necessary to respond to the notification for inspection at Hold and Witness Points shall be stated in the Construction QA/QC Plan, mutually agreed to by both the Concessionaire/Design-Builder and the Department and incorporated in the Design-Builder's CPM schedule.

5.16 Hold Points – Minimum Requirements

5.16.1 Project-specific Hold Points may be identified in the Construction and Contract Documents. In addition, the Concessionaire/Design-Builder shall identify all Preparatory Inspection meetings, Design Development Services submissions as identified in Part 4, Section 2.4, or as otherwise set out in the Comprehensive Agreement for P3 projects, Environmental submittals, Certifications and Permits, and Governmental Approvals as Hold Points and shall identify other Hold Points in its Construction QA/QC Plan to allow the Department to perform its OIA and/or OVST functions as identified in Appendix 3, Table A-3 and Appendix 4, Table A-4 and to allow design team certification, where applicable.

5.17 Witness Points – Minimum Requirements

5.17.1 Project-specific Witness Points may be identified in the Construction and Contract Documents. In addition, the Concessionaire/Design-Builder shall identify other Witness Points in its QA/QC Plan to allow the Department to perform its OIA and/or OVST functions as identified in Appendix 3, Table A-3 and Appendix 4, Table A-4.

5.18 Performance Verification of Project Geotechnical Elements/Features

5.18.1 The Construction QA/QC Plan shall include inspection and verification tests to determine the integrity of foundation structures and other geotechnical elements and to verify that their performance is as anticipated from the design and other geotechnical requirements as set forth in the specifications, special provisions, technical requirements, or as otherwise included in the Construction and Contract Documents.

5.18.2 The Concessionaire/Design-Builder's geotechnical engineer shall certify whether the Work was subjected to the necessary testing and inspection requirements, whether its representatives were qualified by education, experience and training to conduct the referenced activities, shall note any non-compliance issues, and shall certify whether the Work is deemed acceptable or unacceptable. The QAM's summary reports to the Department shall include the Concessionaire/Design-Builder's geotechnical engineer's certification of completed Work.

5.19 Plant Manufactured Materials Acceptance

5.19.1 The Concessionaire/Design-Builder shall identify to the Department any and all off-site fabricated materials from producers not in an existing Department QA/QC program. Precast Concrete structure and pipe producers must be on existing approved lists #34, #25, #26 or #42. The inspection of project-specific fabricated items will be accomplished by the Department using its own forces and/or Department agent. To facilitate these inspections, the Concessionaire/Design-Builder will promptly notify the Department of the intended fabricator and provide two copies of the Approved Shop Drawings. In addition, the Concessionaire/Design-Builder shall submit a Source of Materials, Form C-25, for those materials the Department retains responsibility for testing. An advanced notice of at least one month shall be provided to the Department in order to conduct on-site acceptance of the Plant into the Department's approved QA/QC

program, with the exception of Precast Concrete Structures, which shall require a minimum of three months advanced notice. Precast concrete producers must be within 200 miles of Virginia's border to be considered for list #34.

5.19.2 Unless otherwise noted, the Department, using its own resources, will provide quality assurance inspection and/or testing of off-site fabricated materials listed in **Table 5-2.**

Table 5-2: Testing of Materials by the Department for Off-Site Plant QA Programs

Item	Point of Contact
Prestressed Concrete Structural Elements (beams, girders(AASHTO and bulb-T), and piles	Central Office Materials – Structures Section
Metal Traffic Signal and Light Poles and Arms	Central Office Materials – Structures Section
Structural Steel Elements (beams and girders)	Central Office Materials – Structures Section
Laminated Bridge Bearing Pads	Central Office Materials – Physical Lab
Precast Concrete Structures	Central Office Materials – Quality Assurance Section – Approved List #34
Pipe (concrete, steel, aluminum and high density polyethylene) for culverts, storm drains and underdrains	Central Office Materials – Quality Assurance Section – Approved List #25, #26 and #42
Asphalt Concrete QA program	District Materials Section
Hydraulic Cement Concrete Plant and Truck Inspections	National Ready Mix Concrete Association (NRMCA) Plant and Truck Certification required
Hydraulic Cement Concrete Mix Designs	District Materials Section
Aggregate CMA QA program	District Materials Section

5.19.3 The Concessionaire/Design-Builder shall be responsible for acceptance of materials at the time of delivery to the project site. The Department is not responsible for materials approved at the Plant that become damaged during transit or during storage on-site. The Concessionaire/Design-Builder will be responsible to assure all materials are free from damage prior to use in the Work.

5.20 Inspection Documentation

5.20.1 Each of the Concessionaire/Design-Builder's QA and QC Testing and Inspection Technicians shall summarize their daily inspections, tests and material sampling activities in a daily report. The Department's Inspectors Daily Work Report or a similar form as

approved by the Department shall be used for maintaining a written record of inspection results. Copies of the inspector's records shall be provided to the Department's Project Manager within 24 hours of completing the inspection. The report shall consist minimally of the following key points of record:

.1 Work performed by the firm, subcontractor, or material supplier, identified by Work Package notation;

.2 Weather conditions;

.3 Inspections performed and their results;

.4 Communications;

.5 Type, location, and results of all tests performed;

.6 Delays encountered;

.7 Identification of any safety-related problems and corrective action taken;

.8 Identification of all non-conforming work and the corrective action taken; and

.9 Signature of inspector.

5.21 Inspection Documentation and Reporting Process and Progress Payment Certification

5.21.1 The Project shall be constructed in accordance with standards and requirements related to construction, safety, quality assurance and quality control as required in the Construction and Contract Documents and Appendix 3, Table A-3. The objective of Table A-3 is to identify and summarize minimum inspection, sampling and testing coverage and frequencies; verification and observation schemes, and documentation and reporting requirements to be included in Concessionaire/Design-Builder's QA/QC Plan. The Department's Project Manager will review the Concessionaire/Design-Builder's QA/QC Plan for conformance with the requirements as set forth in the Contract. The Concessionaire/Design-Builder shall not begin any construction activities without the Department's approval of the Concessionaire/Design-Builder's QA/QC Plan.

5.21.2 The QAM shall maintain the Project's Materials Book, recording materials used, source of material and method of verification used to demonstrate compliance with Department standards. The Materials Book shall be maintained according to the Department's Materials Division requirements and will be reviewed on a monthly basis by the Department's Project Manager. The monthly review shall consist of spot checking at least five (5) materials and their source documentation. Minimally, the Department Project Manager will review all components of the materials notebook during the first two (2) months of commencement of Concessionaire/Design-Builder's planned or scheduled field operations to ensure all records are set up correctly. The QAM shall also maintain project daily reports and shall be responsible for approval of all Inspectors' Daily Reports.

5.21.3 The QAM shall approve all Materials Test Reports prior to submission to the Department. The QAM's approval of Materials Test Reports shall also include those for which the Department retains responsibility for review and acceptance.

5.21.4 Concessionaire/Design-Builder's QA and QC staff shall be responsible for project documentation, testing and inspection; the Department's Project Manager will be responsible for monitoring the Concessionaire/Design-Builder's compliance with its approved QA/QC Plan and maintains appropriate project documentation. The Department will also be responsible to administer Independent Assurance (OIA) and Verification Sampling and Testing (OVST) of materials used during construction of the Project.

5.21.5 Concessionaire/Design-Builder's QA (IA and IVST) and QC shall be an integral part of each Work Package. That as part of each application for payment that includes completed Work Packages, Concessionaire/Design-Builder's designated Quality Assurance Manager shall certify that each Work Package has been completed in accordance with the Construction and Contract Documents, and that all required QA/QC tests, measurements, permits or other requirements have been completed and all non-conformance reports relative to the respective Work Package have been resolved. The Concessionaire/Design-Builder shall submit with each application for payment evidence of the QA/QC reviews, including any checklists, summary data, high-level/outline calculations or design checks, and evaluations of the work and the qualifications of the responsible personnel that completed the work, etc., that the relevant QA or QC reviewer relied on to make its determination the work is complete and conforms to the requirements of the Construction and Contract Documents.

5.21.6 The Concessionaire/Design-Builder shall provide, prior to final application for Payment, a complete set of Project records that included, but are not limited to the following:

.1 Project correspondence

.2 Project diaries

.3 As-built Record Documents

.4 Test reports

.5 Invoices

.6 Materials books

.7 Certified survey records

.8 DBE-SWaM/EEO records

.9 Warranties

.10 Maintenance Manual

.11 Special Tools, etc.

5.22 Department Inspection Validation and Administration Process

5.22.1 As set forth in Part 5, Section 105.03 or as otherwise set out in the Comprehensive Agreement for P3 projects, the Department shall have the right to audit, monitor, inspect and test the Work as it progresses and Concessionaire/Design-Builder shall accommodate this process. Appendix 4, Table A-4 delineates Department's construction oversight of items of work and identifies requirements for Preparatory, Intermediate, and Completion Inspections to be performed by the Concessionaire/Design-Builder. Additionally, the Department will perform Owners Independent Assurance (OIA) and Owner Verification Sampling and Testing (OVST), observations and oversight and will independently assess and validate work items as set out in this Section 5 and Appendix 4, Table A-4.

5.23 Preparatory Inspections and Testing

5.23.1 Prior to the start of each new construction phase, type of work or after a change in previously approved types of materials, the Concessionaire/Design-Builder's QAM and Construction Manager shall meet with representatives of the Department for the Preparatory Inspection for that work in accordance with Section 5.3 of this Guide. The purpose of the Preparatory Inspection is to verify that the pre-construction activities, such as approval of design documents, permits, certifications, reference documents, safety training, material approvals, scheduled inspections, and test types, locations and frequencies have been satisfactorily completed prior to beginning the work.

5.23.2 At the Preparatory Inspection, the QAM shall identify the type and frequency of inspections and testing that will be performed by QA and QC personnel, as documented in the QA/QC Plan and as approved by the Department. All project work activities shall be preceded by a Preparatory Inspection and Testing as identified in this Section 5 and Appendix 4, Table A-4.

5.24 Intermediate Inspection and Testing

5.24.1 Throughout the course of construction, the Concessionaire/Design-Builder shall accommodate Department's performance of Intermediate Inspections and Testing. Details regarding the frequency and types of inspections and testing are described in this Section 5 and Appendix 4, Table A4.

5.25 Completion Inspection and Testing

5.25.1 Some types of work may require inspection and testing by the Department upon substantial completion. Completion Inspection and Testing will allow the Department Project Manager's verification that all necessary and supporting documentation is available to support Concessionaire/Design-Builder's application for final payment as identified in the approved CPM schedule.

5.26 Punch out Inspection

5.26.1 Concessionaire/Design-Builder shall be responsible for punch out inspection. The punch list shall be maintained by the QAM and shall be created near the end of the

Project or at the time of Substantial Completion. The punch out inspection shall be performed on all definable features of the Work, against approved Construction Plans, Specifications and other related Construction and Contract Documents and note any discrepancies thereof. The QAM shall review the project records to ensure that all items addressed by non-conformance reports; including areas where Department OIA and OVST testing produced discrepancies; have been corrected, or have been included on the punchlist for corrective action.

5.26.2 The Department will monitor the development of the Concessionaire/Design-Builder's punchlist for the Project. The Department will review the Concessionaire/Design-Builder's punchlist documentation prior to the final acceptance walkthrough to determine that all punchlist activities have been performed and shall physically verify correction of a minimum of 10% of the punchlist items in the field. Discrepancies found in the physical verification by the Department may result in a greater percentage of physical verification of punchlist items depending on the severity, at Concessionaire/Design-Builder's sole expense. Increase in frequency or percentage of verification will be made at Department's sole discretion.

5.27 Construction Inspection Checklists

5.27.1 The Concessionaire/Design-Builder's QA/QC Plan shall include inspection checklists for all anticipated construction operations and/or processes. These checklists shall be used by the Concessionaire/Design-Builder's QA and QC inspection personnel. The individual checklists shall be approved by the Department as part of the overall approval of the Concessionaire/Design-Builder's QA/QC Plan. The checklist for each work activity shall include the construction requirements stated in the standard specifications or Contract for that work activity. As a minimum each checklist shall address the following as shown in **Table 5-3**:

Table 5-3: Minimum Requirements for Construction Inspection Checklists

Checklist Item	Item Description
Date and Time:	Date and time inspection was performed
Location:	.1 Pier or structure component .2 Drainage Structure Number .3 Compaction Report (referenced to Centerline Station and Sub-grade Elevation, etc.)
Specification Requirement:	List of applicable specifications for this item
Frequency:	Indicated test or inspection frequency, if any
Elements or Items Inspected:	List of elements or items inspected

Checklist Item	Item Description
Conformation to Specifications:	Check that work and materials meet the appropriate specification/standard
Deficiencies Noted:	Note any deficiencies to specifications/standards
Individual Notified:	Individual notified for corrective action
Corrective Action Noted:	What form of corrective action is recommended
Action Taken:	What corrective action was taken
Material Documentation:	List and attach a copy of all required documentation (test reports—such as, but not limited to, compaction, aggregate gradation, mill tests, manufacture's certification, and catalog cut or product specifications).
Responsible Party Notified:	Name of the foreman or worker responsible for the work
Signature of Inspector:	Signature of Inspector who performed inspection

5.27.2 Appendix 6 contains sample checklists for standard work items commonly used on Department Projects. The Concessionaire/Design-Builder shall confirm the completeness and suitability of the lists for the Project and shall develop the checklists for its QA/QC Plan based upon the style and format of the appended sample checklists.

5.28 Project Communications and Submittals

5.28.1 A timeline and process for making decisions and managing communications shall be established as part of the QA/QC Plan. These processes are to ensure that required information is provided in a timely and efficient manner and that decisions are made at the lowest appropriate level of authority. The processes shall include the guidelines for communications generated by the Concessionaire/Design-Builder Team (designers, production forces, the QC personnel, and the QA personnel) and the Department.

5.29 Quality Assurance and Quality Control Documents Order of Precedence

5.29.1 This Guide together with certain referenced standards and publications details the Department's minimum testing and inspection requirements and frequencies which the Concessionaire/Design-Builder is to perform. It is recognized that contract requirements will vary from project to project and therefore project specific contract requirements will always take precedent in case of conflict. If the QA/QC testing and inspection requirements set forth in this Guide are more stringent than Federal and State QA/QC testing and inspection requirements, then those set forth herein shall govern.

5.29.2 In the event of a conflict among any standard, provision or publication applicable to the Project, the Department shall have the right to determine, in its sole discretion, which provision applies regardless of the order of precedence of the documents in which such standards, provisions or publication are referenced. Concessionaire/Design-Builder shall request in writing Department's determination respecting the order of precedence involving the referenced standards, provisions and publication promptly upon becoming aware of any such conflict.

Appendix 1

Definitions of Terms, Abbreviations and Acronyms

Terms, Abbreviations and Acronyms

Terms, Abbreviations and Acronyms shall be as stated in Section 101.01 of the VDOT 2007 Road and Bridge Specifications. Additional or key terms and abbreviations relative to the Department's Requirements for Contractor QA/QC Plans on Design-Build Projects are as follows:

Approved for Construction (AFC) Issued for Construction (IFC) Documents – All drawings, specifications, revisions thereto, and any other items necessary to construct the Work, sealed by a professional engineer licensed by the State.

Audit - A documented activity performed in accordance with written procedures or checklists to verify, by examination and evaluation of objective evidence, that applicable elements of the Quality Assurance and Quality Control program have been developed, documented, and effectively implemented in accordance with specified requirements.

Concessionaire/Design-Builder – Any individual, partnership, corporation, or joint venture that contracts with the Department to perform the Contract.

Contract – Any contract, subcontract, or other form of agreement to perform any part of the Work or provide any materials, equipment or supplies for the Project and/or the utility relocations included in the Work, on behalf of the Concessionaire/Design Builder or any other Person with whom any Contractor further subcontracted any part of the Work, at all tiers.

Contractor – As applicable to P3 procurements, means any Person with whom the Concessionaire has entered into any contract to perform any part of the Work or provide any materials, equipment or supplies for the Project and/or the Utility Relocations included in the Work, on behalf of the Concessionaire, and any other Person with whom any Contractor has further subcontracted any part of the Work, at all tiers. The term "Contractor" will include the Design-Build Contractor and the Operations and Maintenance (O&M) Contractor.

Construction Documentation – All Design Documentation, AFC or IFC Documents, and all shop drawings, working drawings, fabrication plans, material and hardware descriptions, specifications, construction quality control reports, construction quality assurance reports and samples necessary for construction of the Project and/or the Utility Relocations included in the Work, in accordance with the Agreement and the other Project Agreements.

Construction QA/QC Plan – Used interchangeably with the Construction Quality Management Plan (CQMP) for P3 Projects. The plan developed by the Concessionaire/Design-Builder that provides the organization, relationship and

procedures that define clear lines of responsibility and well defined approach for meeting Project requirements and innovation in construction approach, as described in more detail in the Contract Documents.

Design Documentation – Such plans, drawings, specifications and other design documentation (including design standards, design or durability reports, models, samples and calculations) in computer readable and written formats prepared by or on behalf of the Concessionaire/Design-Builder for the purposes of the performance of the Work or any component thereof in accordance with the Design Build Contract and /or Comprehensive Agreement.

Design QA/QC Plan – Used interchangeably with the Design Quality Management Plan (DQMP) for P3 Projects. The plan developed by the Concessionaire/Design-Builder that provides the organization, relationship and procedures that define clear lines of responsibility and well defined approach for meeting Project requirements and innovation in design approach.

Hold Point – Mandatory verification points identified within the QA/QC Plan and CPM schedule beyond which work cannot proceed until mandatory verification is performed and a written release is granted by the Department.

Inspection Technician – Staff who performs on-site inspection.

Quality Assurance Manager Independent Assurance (QAM IA) – Inspection performed by the QAM to independently evaluate all sampling, equipment and testing procedures used by quality control that are used in the acceptance program. This may include split samples, calibration checks and/or observations.

Quality Assurance Manager Independent Verification Sampling and Testing (QAM IVST) – Inspection performed by the QAM that serves as an oversight role for the Concessionaire/Design-Builder's QA/QC Team. Independent Verification and Testing is performed to satisfy the QAM's verification process for documenting that proper QA/QC is being performed on the Project and to provide adequate assurance that the public is receiving the desired quality in the project undergoing construction.

OIA – Owner Independent Assurance (OIA) – Oversight performed by the Department (or agent) to satisfy VDOT and FHWA's requirements for documenting that proper QC and QA management is being performed. This oversight provides an independent assessment of Concessionaire/Design-Builder's implementation of and compliance with the approved Quality Control and Quality Assurance plan.

Owner Verification Sampling and Testing (OVST) – Oversight performed by the Department (or agent). The focus of owner validation is to verify Concessionaire/ Design-Builder's QC and QA compliance and confirm that the quality characteristics of the products incorporated in the project are valid for acceptance and payment in accordance with Part 4, Article 6 or applicable portions of the P3 procurement documents.

Punch List – Itemized list of Work which remains to be completed after Substantial Completion of the Project has been achieved and before Final Acceptance, the existence,

correction, and completion of which will have no adverse effect on the normal uninterrupted and safe use and operation and which can be performed without shutting down a traffic lane or shoulder.

Quality Assurance (QA) – The overall process performed independently of the construction contractor (contractor's production forces) for the purpose of determining the conformance of the work by examining the QC data and/or providing objective evidence (independent sampling and testing), to verify the contractor's quality control sampling and testing. The contractor will (organizationally through services independent of production forces) provide the QA inspection normally provided by VDOT or its consultant on a traditional Design-Bid-Build project.

Quality Assurance/Quality Control Plan (QA/QC Plan) – Used interchangeably with Quality Management System Plan (QMSP) for P3 Projects. The plan developed by the Concessionaire/Design Builder that defines the quality management systems during the design, construction and for P3 procurements, the operations and maintenance phases of the Project. This plan details how the Concessionaire/Design-Builder will provide quality control (QC) and quality assurance (QA) for both the design and construction elements of the project, obtain samples for Design- Builder quality control testing, perform tests for Concessionaire/Design-Builder quality control, provide inspection, and exercise management control (e.g. quality assurance testing) to ensure the work conforms to the contract requirements. This document includes the Design QA/QC Plan (DQMP) and the Construction QA/QC Plan (CQMP).

Quality Assurance Manager (QAM) – The Concessionaire/Design-Builder's designee responsible for providing Quality Assurance of the Work, and ensuring conformance with the Contract Documents is the individual with overall responsibility for the development of and adherence to the Design-Build QA/QC Plan. The QAM is responsible for supervising the performance of all field materials tests performed by the Concessionaire/Design-Builder including but not limited to, density, moisture, air content of concrete, slump, and other required materials field tests.

Quality Control (QC) – Performed by the Concessionaire/Design-Builder to assess and adjust design, production and construction processes to ensure conformance with contract requirements and to control the level of quality being produced in the Project. The purpose of QC is to measure those quality characteristics and to inspect those activities that affect the production at a time when corrective action can be taken to substantially decrease the likelihood that appreciable non-conforming material will be incorporated in the Project.

Testing Technician – Staff who performs on-site materials testing.

Verification – The act of reviewing, inspecting, testing, checking, auditing, or otherwise determining and documenting whether items, processes, services, or documents conform to specified requirements.

Witness Point – Points where critical characteristics are to be measured and maintained, and/or at points where it is nearly impossible to determine the adequacy of either materials or workmanship once work proceeds past this point. Advance notification is to

be given to the Department so that it may observe the status of the work at witness points. Work may proceed beyond a witness point with or without participation by VDOT provided proper notification has been given.

Appendix 2

Minimum Requirements for Design QA/QC Plans

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

The project design control plan includes:

- Written documentation and definition of the project's design criteria, standards, and processes;
- Procedures for the performance of senior experienced engineers' detailed checks of all design reports, calculations, drawings and specifications;
- Directions for interdisciplinary reviews by technical and management staff to provide coordination and uniformity among section designs; and
- Execution of design/build constructability reviews to facilitate the timely planning of construction activities.

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

Individual design discipline leaders are responsible for the completion of all QC functions within the section and for the coordination of actual audit dates established by the Design Manager. Concessionaire/Design-Builder shall prepare and update a schedule for audits to reflect changes or refinements in the scope of the project work and the project schedule.

The Concessionaire/Design-Builder shall correct all nonconforming practices before plans are submitted to the Department. Copies of all audit reports shall be retained in the Design Manager's QA File.

The Concessionaire/Design-Builder provides the Department the necessary verification that the design submittals and plans released for construction will meet all project requirements. Documents which are "issued or approved for construction" are accompanied by a Form that is signed by the Design Manager certifying that the "construction items" shown on the plans have been audited for and satisfy compliance with the Design Control Plan, all requirements of the contract documents, including the Concessionaire/Design-Builder's Proposal and for P3 procurements, the Comprehensive Agreement.

The Design Manager verifies the implementation and effectiveness of the corrective measures using informal observation and review or with a formal audit. The time allowed for such follow-up activities depends on the importance of the corrective action required.

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

A Table of Contents is provided that illustrates the minimum contents of the Project design QA/QC procedures.

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3.10 Documentation and Transmission of Design Directives and Revisions

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3.13 Implementation of Corrective and Preventive Action

3.14 Quality Control of Utility Design

3.15 Training

The Design Manager shall maintain close communication with Concessionaire/Design-Builder's Project Manager and shall ensure the Project is completed in accordance with the requirements of the Contract Documents. The Design Manager shall perform all of the design oversight reviews. The Department may participate in these reviews. Unless otherwise set out in the Contract, the Department retains the ultimate approval and disapproval authority for conformance with contract requirements. Under this procedure, the Design Manager will provide the Department with draft design plans for review and approval to confirm that the design work complies with the requirements of the Contract Documents herein prior to initiation of construction activities on the Project.

Plans to be reviewed shall be submitted to the Department's Project Manager in accordance with contract requirements. The Department's Project Manager will distribute plans for review and/or approval. The Department shall have the right to review and comment on all draft plans and specifications for compliance with the requirements of the contract documents and reference documents. The Concessionaire/Design- Builder shall be responsible to satisfy all such requirements.

The Concessionaire/Design-Builder shall revise and modify all draft design plans so as to fully reflect all comments and shall deliver the revised submittal to VDOT's Project Manager, who will distribute plans to appropriate VDOT staff for review and comments.

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

Table A-3: Part 1 – Material Testing

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*
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			
				QC Frequency	IA Frequency*	VST Frequency	OIA Frequency*	OVST Frequency*
1.	**Moisture Density Relations – Standard Proctor, Atterberg Limits, Grain Size Analysis & CBR** (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[1].	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.

[1] 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			
				QC Frequency	IA Frequency*	VST Frequency	OIA Frequency*	OVST Frequency*
1.	**In-Place Density Tests – Box Culverts and Pipes, Drop Inlets, Manholes, Abutments. Retaining Walls (including MSE Walls)**		VTM 10	One (**1**) per **100**LF length, each lift, alternating sides (alternating side applies to box culverts and pipes only); minimum one (**1**) test per **150**CY; minimum one (**1**) test per work shift at each location and whenever there is a change in material or compaction equipment/method. For drop inlets, minimum one (**1**) test every other lift around perimeter after first 4" (100 mm) bedding layer. 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.	One (**1**) test per **1500**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 of QC sample locations and results are compared against D2S. Minimum one (**1**) test per drop inlet. Minimum one (**1**) test per manhole.	One (**1**) test per **1500**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 Minimum one (**1**) test per drop inlet. Minimum one (**1**) test per manhole.	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.	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.

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.	**HYDRAULIC CEMENT CONCRETE (HCC) STRUCTURAL**	VDOT Section 217						
	HCC Entrained **1. Air Content** **a) Pressure Meter** **b) Volumetric Meter** **2. HCC Slump** **3. HCC Unit Weight** **4. HCC Temperature**		 ASTM C231 ASTM C173 ASTM C143 ASTM C138 ASTM C 1064	Test every load	One (1) test per 100 yds^3 performed on the Subcontractor's QC; minimum one test per project.	One (1) test per 500 yds^3; minimum one test per project.	One (1) test per 5,000 yds^3 performed on QAM's VST; minimum one (1) test per project.	One (1) test per 5,000 yds^3; minimum one (1) test per project
	HCC Compressive Strength		ASTM C31 / C39	One (**1**) set of three (**3**) cylinders per every 100 yds^3; minimum one (1) set of three (3) cylinders per day.	One (1) set of three (3) cylinders per every 1,000 yds^3 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^3: minimum one (1) set of three (3) cylinders per project.	One (1) set of three (3) IA cylinders every 10,000 yds^3 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^3;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
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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^3; minimum one (1) set of two (2) cylinders per day.	One (1) set of two (2) cylinders per every 1,000 yds^3 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^3; minimum one (1) set of two (2) cylinders per project.	One (1) set of two (2) IA cylinders every 10,000 yds^3 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^3; 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.

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.	**Concrete Reinforcing Steel (Corrosion Resistant Bar)** **1 - Stainless** **2 - Stainless Steel Clad** **3 - Low Carbon/ Chromium**		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.	**SOILS / SUBGRADE / EMBANKMENT (This is not redundant with Backfill requirements.)**	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
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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*
3.	**Moisture Density Relations Of Soils – Standard Proctor, Atterberg Limits, Grain Size Analysis & CBR** (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	**Once** weekly 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.	**Once** every five (**5**) weeks during production for each QC personnel (**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	**Once** every five (**5**) weeks during production. 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.

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*
3.	**In-Place Density** (Soils/Subgrade/ Embankment)	Density control of Embankments and Backfill (Density Control SP dated July 2010)	VTM 10	One (**1**) per **500**LF interval each lift; minimum one (**1**) test per **500**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 **50,000** 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 **5,000**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						

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.	**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 or 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
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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*
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 or 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.

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.	**ASPHALT CONCRETE PLACEMENT**	VDOT Section 315						
	Pavement Density by Nuclear Method with In Place Pavement Density by Cores serving the VST function (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.
	Pavement Density by Core/Plug Method with In Place Pavement Density by Cores serving the VST function (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
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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 patter/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
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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
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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*
7.	**HYDRAULIC CEMENT CONCRETE (HHC) - PAVEMENT**	VDOT Section 217						
	HCC Entrained **1. Air Content** **a) Pressure Meter** **b) Volumetric Meter** **2. HCC Slump** **3. HCC Unit Weight** **4. HCC Temperature**		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.
	Compressive Strength of Concrete Cylinders (HCC Pavement)		ASTM C31/39	One (1) set of three (3) cylinders for every 500 yds^3 minimum one (1) set of three (3) cylinders for each days concreting operation.	One (1) set of three (3) cylinders for every 5000 yds^3 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^3; minimum one (1) set of three (3) cylinders per project.	One (1) set of three (3) cylinders for every 20,000 yds^3 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^3; 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
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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*
8.	**HYDRAULIC CEMENT CONCRETE (HCC) – Miscellaneous Items**	VDOT Section 217						
	HCC Entrained **1. Air Content** **a) Pressure Meter** **b) Volumetric Meter** **2. HCC Slump** **3. HCC Unit Weight** **4. HCC Temperature**		ASTM C231 ASTM C173 ASTM C143 ASTM C138 ASTM C1064	One (**1**) test per load	One (1) test per 250 yds^3 performed on the Subcontractor's QC; minimum one test per project.	One (1) test per 1,250 yds^3; minimum one (1) test per project.	One (1) test per 12,500 yds^3 performed on QAM's VST; minimum one (1) test per project.	One (1) test per 12,500 yds^3;; minimum one (1) test per project
	Compressive Strength of Concrete Cylinders (Miscellaneous Items)		ASTM C31/ ASTM C39	One (**1**) set of three (**3**) cylinders per every 250 yds^3; minimum one (1) set of three (3) cylinders per day.	One (**1**) set of three (**3**) cylinders per every 2,500 yds^3 (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^3 (cumulative); minimum one (1) set of three (3) cylinders per project.	One (1) set of three (3) cylinders every 25,000 yds^3 (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^3 (cumulative); minimum one (1) set of three (3) cylinders per project.

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.

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.	**Clearing and Grubbing**	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.	**Pre-cast Structures**	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.	**Erosion and Siltation Control**	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	
				Contractor	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.	**Load Bearing Piles**	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

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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		
7.	**Structural Steel**	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 documen-tation 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 insure they remain in good well lubricated condition.	The docu-mentation shall be reviewed to insure all parts are present and that the required tests have been performed by the producers and that the markings match the suppliers. The results of the VST shall be reviewed to insure 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 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 insure 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
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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		
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
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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		
8.	**Protective Coating of Metal Structures**	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

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.	**Underdrains**	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.	**Storm Sewer and Culvert Post-Installation Inspection**	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.	**Guardrail**	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.	**Fencing**	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.	**ROW Monuments**	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.	**Maintenance of Traffic**	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.	**Sound Barrier Walls**	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.	**Topsoil and Seeding**	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.	**Planting**	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.	**Traffic Signs**	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.	**Traffic Signals**	VDOT Section 703	Table A3					
	Monitor installation for conformance with plans and specifications			Daily	Weekly	Review documentation monthly	Weekly	Review documentation upon completion
20.	**Water and Sewer Facilities**	VDOT Section 520	Table A3					
	Monitor installation for conformance with plans and specifications.			Daily	Weekly	Review documentation monthly	Weekly	Review documentation upon completion
21.	**Specialty Contract Items**							
	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

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Appendix 4 - Table A-4
Concessionaire/Design-Builder's Minimum Requirements for Inspection, Sampling and Testing of Definable Features of Work
January 2012

No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
1.	**Clearing and Grubbing (C&G)** **VDOT Section 301**	Design-Builder's QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Monitor that the QAM is confining effort to C&G activities and to areas so designated for C&G within the plans and scheduled within the next 30 days. Areas not worked within 30 day period should be temporarily seeded.	Physical field inspection performed with final payment
		Verify approval of design documents for locations of work to be performed.	For testing and inspection of Clearing and Grubbing refer to frequencies specified in Table 105.4, Part 2 and/or VDOT Construction and/or Materials Manual of Inspection	OVST Final document review.
		The Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan		
		Identify items of work and the frequency of OIA and OVST Inspections		

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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Appendix 4 - Table A-4
Concessionaire/Design-Builder's Minimum Requirements for Inspection, Sampling and Testing of Definable Features of Work
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No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
2.	**Excavation and Backfill of Structures** **VDOT** **Contract Special Provisions** **&** **Section 303/304/401**	Design-Builder's QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Verify by observation or review of the QAM's records, that each foundation has been probed or tested and has been accepted by the QAM. Frequency - On key structures identified by the VDOT Project Manager	Review TL-124(s), to verify that the appropriate frequency of testing was performed during the operation.
		QAM to verify work related design documents have been approved.	Verify that proper lift depths and density tests are being performed as required. Review the completed TL-124(s) to verify that the appropriate frequency of testing was performed. Frequency - Weekly	Physical field inspection performed with final payment.
		Verify the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan	QC one per 100 lf or 150 cy QAM IA one per 1,500 cy QAM VST one per 1,500 cy For QC and QAM IA & VST testing requirements and frequencies see Table 105-4.	
		Identify items of work and the frequency of OIA and OVST Inspections	For OIA and OVST testing requirements and frequencies see Table 105-4	
		Verify backfill material has been approved and density requirements established. Changes in backfill material shall be similarly reviewed/approved.	Provide written notice of non-compliant materials to the design-Builder's QA Manager. Frequency - 1% of proctors (no less than 1)	

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
3.	**Pipe Culverts, Storm Drains and Pre-cast Structures** **VDOT Contract Special Provisions & Section 302/404 VTM – 10 & VTM - 123**	Design-Builder's QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Verify QAM and QC personnel's inspection of pipe culverts, storm drains and pre-cast structures to ensure that bedding material is properly placed and shaped. Frequency - Weekly	Verify that all structures are accurately documented in the QA/QC personnel's diaries
		Design documents that relate to the work to be performed have been approved.	Verify that pipe is not damaged, joints are properly sealed and bell/spigot ends are at the proper orientation. Frequency - Weekly	Physical field inspection performed with final payment
		Verify the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan	Verify proper installation (pipe joints, cover height limits, backfill density and thickness) per QC. Verify that proper lift depths and density tests are being performed as required by QC. Review the completed TL-124(s) to verify that the appropriate frequency of testing was performed. Insure inspection and testing personnel have a Soils and Aggregate Field certification. Verify nuclear gauges have been calibrated in the last year.	Contractor completes post-installation inspection. QAM IA inspector present at post-installation inspection. Post-installation inspection report included with project file and sent to VDOT Central Office for permanent storage.
		Identify items of work and the frequency of OIA and OVST Inspections	Contractor QC – Daily as noted above QAM IA – Once per structure or run of pipe QAM VST – verify density test reports and documentation monthly	
		Verify material to be used has been approved.	OIA confirm 10% of structures or runs of pipe OVST Verify 10% of QAM VST	
		Verify by observation or review of the QAM's records, that each foundation has been probed or tested in another manner and accepted by the QAM.		

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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Concessionaire/Design-Builder's Minimum Requirements for Inspection, Sampling and Testing of Definable Features of Work
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No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
4.	**Cast-In-Place Structures** **VDOT** **Contract Special Provisions** **&** **Section 302**	Design-Builder's QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Verify formwork and rebar conforms to the plans and specifications and is free of debris. Frequency - Weekly	Monitor curing based on the current and forecasted weather conditions. Control cylinders cast should be cured in the same manner as the in-place concrete.
		Verify design documents that relate to the work to be performed have been approved.	Verify that two (2) Certified Concrete Field QC Inspectors are present during placement and that proper testing methods are being implemented. Frequency - Weekly	Physical field inspection performed with final payment
		Verify the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan	Verify that the proper frequency of testing and material samplings is performed by the QAM and QC personnel. QC- fresh concrete properties – each load. QAM IA fresh concrete – 10th load QAM VST – fresh concrete – 50th load	
		Review items of work and the frequency of OIA and OVST Inspections	Test results on the TL-28 Coding Form – Concrete Batch Report at the frequency previously approved. OIA fresh concrete – 1 per 10 QAM VST. OVST fresh concrete – anytime before 500th load	
		Verify by observation or review of QAM's records, that each foundation has been probed or tested in another manner and accepted by the QA Manager	On an OVST tests for consistency (slump) and air entrainment; take cylinders at a ratio of one (1) OVST for each two (2) QAM VST.	
		Verify hydraulic cement mix design has been approved for applications. Review any special design requirements.	Provide written notice of non-compliant materials to the Design-Builder's QA Manager. Frequency – As required	

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
4.	**Cast-In-Place Structures (Continued)**	Review concrete strength requirements prior to the placement of superimposed concrete or backfill	Perform OIA testing at a rate of one (1) every ten (10) QAM VST tests for consistency (slump), air entrainment, unit weight, temperature and at a rate of one (1) for every two (2) QAM VST for strength (3 cylinders) and permeability.	

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
5.	**Erosion and Siltation Control** **VDOT Sections 107.16(a), 245 303 DCR E&SC Handbook**	Design-Builder's QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work. Prior to start of any land disturbing activities, verify that all applicable permits are on file, as required, per contract documents. Insure inspection personnel certified.	Conduct weekly inspections of all Erosion and Sedimentation control, and as otherwise required by Specification 107.16(a). Frequency - Weekly	Verify that temporary erosion and siltation control devices are removed at the completion of and prior to acceptance of the Project
		Ensure silt fence has test results from GRI certified laboratory.	Monitor the Design-Builder's Erosion and Siltation Control devices for proper installation and maintenance. Frequency - Weekly	Physical field inspection performed with final payment
			Verify that proper incremental seeding is performed. Frequency - Weekly	
			Monitor Design-Builder's completion of Form C-107 for proper completion and signatures of both the Design-Builder's QAM and Construction Manager. Frequency - Monthly	

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
6.	**Embankments** **VDOT** **Contract Special Provisions** **&** **Section 303** **&** **VTM 10**	Design-Builder's QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Verify by observation or review of the QAM's records that density testing was performed as required. Frequency – Weekly during fill operations	Review the completed TL-124(s), Report of Nuclear Embankment Densities, to verify that the appropriate frequency of testing was performed during the operation
		Verify design documents that relate to the work to be performed have been approved.	Visually observe the placement of embankment material and monitor that proper nuclear density testing and depth of placement of the material is being performed by the QAM and QC personnel. Frequency – Weekly during fill operations Provide written notice of discrepancies to Design-Builder's QA Manager	Monthly or at conclusion of (Work Package) Operation.
		Verify the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan	Review the completed TL-124(s), Report of Nuclear Embankment Densities, to verify that the appropriate frequency of testing was performed during the operation. Frequency - Weekly during fill operations QC – one per 500 lf or 500 cy QAM IA – one per QC person per 50,000 cy QAM VST – one per 5,000cy	Monthly or at conclusion of (Work Package) Operation.
		Verify items of work and the frequency of OIA and OVST Inspections	Monitor that the QAM and QC Inspectors utilize a nuclear density gauge, which had been calibrated within the previous 12 months by an approved calibration service. Frequency – Bi-Monthly	
		Verify embankment fill material has been approved and density requirements have been established.	Perform OIA testing at a rate of one (1) OIA density test for every ten (10) QAM IA density tests for the placement of embankment material. Perform OVST testing at a rate of one (1) OVST density test for every ten (10) QAM VST density tests for the placement of embankment material.	

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
6.	**Embankments (Continued)**	Verify approval and density requirements for any backfill material changes during the operations	Perform OIA at a rate of one (1) OIA proctors for every ten (10) QAM IA proctors of embankment material. Perform OVST at a rate of one (1) OVST proctors for every ten (10) QAM VST proctors of embankment material.	Monthly or at conclusion of (Work Package) Operation.
			Perform OIA testing at a rate of one (1) every ten (10) QAM IA density tests for the placement of embankment material. Verify the results of at least 1%, but no less than one (1), of the submitted forms.	

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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Concessionaire/Design-Builder's Minimum Requirements for Inspection, Sampling and Testing of Definable Features of Work
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No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
7.	**Undercut Excavation** **VDOT** **Contract Special Provisions** **&** **Section 303**	Design-Builder's QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	**If undercut excavation is part of a claim of differing site conditions** continuously monitor and document the location, conditions, equipment used, personnel used and hours worked for undercut operation. Upon completion of the excavation, verify the quantity of material removed. Frequency - Continuously	Review the completed TL-124(s), Report of Nuclear Embankment Densities, to verify that the appropriate frequency of testing was performed during the operation.
		If the undercut excavation is claimed as a differing site condition, review the area and document the condition prior to start of work.	Intermittently monitor the operation. Review the QAM's daily records for any undercut operations to ensure that they adequately document the location, conditions, equipment used, personnel used and hours worked for the undercut excavation and backfill. Frequency - Weekly	Review the completed TL-124(s), Report of Nuclear Embankment Densities, to verify that the appropriate frequency of testing was performed during the operation.
		If the undercut excavation is claimed as a differing site condition, review the area and document the condition prior to start of work.	Monitor that nuclear density tests are performed by the Design-Builder's QAM and QC personnel in accordance with the Embankment Fill procedures. Frequency - Weekly	Review the completed TL-124(s), Report of Nuclear Embankment Densities, to verify that the appropriate frequency of testing was performed during the operation.

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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Appendix 4 - Table A-4
Concessionaire/Design-Builder's Minimum Requirements for Inspection, Sampling and Testing of Definable Features of Work
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No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
8.	**Aggregate Base Material** **VDOT** **Contract Special Provisions** **and** **Section 304/305/308/309**	Design-Builder's QA Manager to schedule and conduct preparatory Inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Verify that subgrade has been accepted by the QAM. Monitor that the subgrade material has been graded to proper tolerances and properly scarified. Frequency - Prior to first placement (per location). Weekly (for tolerances and scarification)	Review 10% of the completed nuclear density test reports during the operation.
		Verify design documents that relate to the work to be performed have been approved.	Verify that each lift has been accepted by the QAM. Frequency - Weekly	Physical field inspection performed with final payment.
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan	Intermittently observe the placement of aggregate base material and monitor that proper nuclear density testing of the material is being performed by the QAM and QC personnel. Insure inspection and testing personnel have a Soils and Aggregate Field certification. Verify nuclear gauges have been calibrated in the last year. Frequency - Weekly QC – one test per 0.5 mile/lane width QAM IA – one per roadway in first five VST tests. (2% of QC) QAM VST – one per 5 miles per lane (10% of QC)	
		Review items of work and the frequency of OIA and OVST Inspections	Monitor each Control Strip and Test Section for compliance with approved procedures. Frequency - Observe the first control strip and test section that each QAM and QC personnel member on the Project performs. Spot check thereafter. OIA – one per QAM IA personnel OVST – one random test/project or year	

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
8.	**Aggregate Base Material (Continued)**	Verify the material to be used has been approved.	Review 10% of the completed nuclear density test reports, to verify appropriate frequency of testing was performed during the operation. Frequency - Weekly	
			Perform OVST at a rate of one (1) OVST density test for every fifty (50) miles per lane width.	
			Perform OIA testing at a rate of one (1) OIA density test for every fifty (50) miles of lane width for each QAM's IA personnel for the placement of aggregate base material	

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
9.	**Cement Treated Aggregate Base Material** **VDOT Contract Special Provisions and Section 304/305/307/308/309**	Design-Builder's QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Verify that subgrade has been accepted by the QAM. Monitor that the subgrade material has been graded to proper tolerances and properly scarified. Frequency - Prior to first placement (per location). Weekly (for tolerances and scarification)	Review 10% of the completed nuclear density test reports during the operation.
		Verify design documents that relate to the work to be performed have been approved.	Verify that each lift has been accepted by the QAM. Frequency - Weekly	Physical field inspection performed with final payment.
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan	Intermittently observe the placement of cement treated aggregate base material to monitor that compacting and finishing operations are within specified time limits and allowable moisture content range as well as monitoring that the curing procedures are being followed. Also monitor that proper nuclear density testing of the material is being performed by the QAM and QC personnel. Insure inspection and testing personnel have a Soils and Aggregate Field certification. Verify nuclear gauges have been calibrated in the last year. Frequency - Weekly	
		Review the items of work and the required frequency of OIA and OVST Inspections.	Monitor each Control Strip and Test Section for compliance with approved procedures. Frequency - Observe the first control strip and test section that each QA/QC personnel member on the Project performs. Spot check thereafter.	

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
9.	**Cement Treated Aggregate Base Material (Continued)**	Verify the material to be used has been approved.	Review 10% of the completed nuclear density test reports, to verify appropriate frequency of testing was performed during the operation. Frequency - Weekly	
			Perform OIA testing at a rate of one (1) OIA density test for every fifty (50) miles of lane width, for each QAM's IA personnel for the placement of aggregate base material	

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
10.	**Soil Stabilization – Lime & Cement** **VDOT Sections 304/305/306/307**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Monitor that roadbed has been graded to proper tolerances and properly scarified. Verify acceptance by the QAM after application of soil stabilization material. Frequency - Prior to the first placement of material in an area.	Monitor that the material is being properly cured on a weekly basis.
		Verify design documents that relate to the work to be performed have been approved.	Perform check of tolerances, scarification and installed to the specified depth. Frequency - Weekly	Physical field inspection performed with final payment
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan	Review the completed nuclear density test reports. Frequency - Weekly	
		Review items of work and the frequency of OIA and OVST Inspections	Monitor (visually) that the material is being properly cured or by review of the QAM and QC documentation. Frequency - Weekly	
		Review application rate calculations.	Monitor that the QAM and QC Inspectors are certified and utilize a nuclear density gauge, which has been calibrated within the previous 12 months by an approved calibration service. Ensure proper and uniform rate of application of cement or lime. Frequency – Bi-Monthly	

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
11.	**Stabilized Open-Graded Material** **VDOT Sections 304/305/307**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Verify through direct observation or review of QAM documents that the material has been accepted by the QA Manager after placement. Frequency - Weekly	Verify material has been accepted by the QAM after placement
		Verify design documents that relate to the work to be performed have been approved.	During placement of hydraulic cement concrete, verify that two (2) Certified Concrete Field Inspectors are present. Frequency - Weekly	Physical field inspection performed with final payment.
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan		
		Review items of work and the frequency of OIA and OVST Inspections.		
		Verify material proposed for use has been approved.		
11a.	**Asphalt Stabilized Open-Graded Drainage Layer**	Design-Builder QA Manager to schedule and conduct prep. insp. meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Verify through direct observation or review of QAM documents that the material has been accepted by the QA Manager after placement. Frequency - Weekly	Verify material has been accepted by the QAM after placement
		Verify design documents that relate to the work to be performed have been approved.	During placement of asphalt stabilized open graded drainage layer verify that an Asphalt Field Technician is present. Frequency - Weekly	Physical field inspection performed with final payment.
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan		
		Review the items of work and the required frequency of IA and VST Inspections at the plant.		
		Verify material proposed for use has been approved.		

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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12.	**Asphalt Surface Treatment** **VDOT** **Section 314 / Special Provisions**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Monitor and verify that one (1) Certified Field Slurry Seal or Surface Treatment Technician is present during the entire operation. Monitor and verify that one (1) Certified Field Slurry Seal or Surface Treatment inspector is present during the entire operation. Frequency - Weekly	Verify that the each section of asphalt surface treatment has been accepted by the QA Manager. The QA Manager's records should indicate proper rate of application of liquid asphalt and cover material.
		Verify design documents that relate to the work to be performed have been approved.	Verify that the each section of asphalt surface treatment has been accepted by the QAM. The QAM records should indicate the proper rate of application of liquid asphalt and cover material. Frequency - Weekly	Physical field inspection performed with final payment.
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan		
		Review items of work and the frequency of OIA and OVST Inspections.		
		Verify materials proposed for use has been approved		

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
13.	**Asphalt Concrete Pavement** **VDOT** **Section 315/317/515/Special Provision**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work..	Review the subbase for conformity with the requirements of the contract and proper surface grading of the material. Frequency - Per each mobilization of paving crew If the subbase is an existing surface which required pavement planning, visually verify proper depth of planing.	Verify, either through direct observation or through review of the QA Manager's records, that each lift has been accepted by the Quality Assurance Manager.
		Verify design documents that relate to the work to be performed have been approved.	Verify that two (2) Certified Asphalt Field Technician QC Inspectors are present during the entire placement and that proper testing methods are being implemented. Frequency - Weekly	Physical field inspection performed with final payment.
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan	Verify, either through direct observation or through review of the QAM's records, that each lift is being accepted by the Quality Assurance Manager. Frequency - Weekly	
		Review items of work and the frequency of OIA and OVST Inspections.	Intermittently observe the placement of asphalt concrete material and monitor that proper nuclear density testing or cores/plugs of the material is being performed by appropriate QAM and QC personnel. Frequency - Weekly Provide written notice of discrepancies to Design-Builder's QA Manager.	
		Verify the asphalt concrete mix design to be used has been approved.	Monitor the creation of each control strip and test section for compliance with approved procedures. Frequency - Observe the first control strip and test section that each QAM/QC personnel member on the Project performs.	

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
13.	**Asphalt Concrete Pavement (Continued)**		Review 10% of forms TL-56, 57, 58, and 59 Frequency - Monthly	
		Review the subbase for conformity with the requirements of the contract and proper surface grading of the material. If the subbase is an existing surface which required pavement planning, visually verify proper depth of planing.	Review 10% of the completed density test section reports to verify that the appropriate frequency of testing was performed during the operation. Frequency - Weekly	
			Monitor that the QAM and QC Inspectors utilize a calibrated nuclear density gauge (within last 12 months) or working scales. Frequency – Bi-Monthly	
			Perform OVST at a rate of two cores/plugs per every ten lots of material placed. OVST consists of two plugs/cores located in two separate sub-lots in a lot of accepted material.	
			Perform OIA on 10% of the control strips. Perform OIA on 10% of the QAM VST cores.	

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
14.	**Hydraulic Cement Concrete Pavement** **VDOT Section 217/316/515**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Visually review the subbase for general conformity with the requirements of the contract and proper surface grading of the material. Frequency - Per each section of concrete pavement If the subbase is an existing surface which required pavement planing, visually check for proper depth of planing.	Verify, either through direct observation or through review of the QA Manager's records, that each section has been accepted by the Quality Assurance Manager.
		Verify design documents that relate to the work to be performed have been approved.	Monitor the QA/QC operations and verify that two (2) Certified Concrete Field QC Inspectors are present during the entire placement and that proper testing methods are being implemented. Frequency - Weekly	Monitor that the in-place concrete is properly cured based on the current and forecasted weather conditions. Control cylinders and flexural beams cast should be cured in the same manner as the in-place concrete.
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan	Verify that the proper frequency of testing and material sampling is performed by the QAM/QC personnel. Monitor the installation of joint reinforcement material. Frequency - Weekly	Physical field inspection performed with final payment.
		Review items of work and the frequency of OIA and OVST Inspections.	Perform OVST testing at a rate of one (1) OVST test per ten (10) days production for consistency (slump), air entrainment, unit weight, temperature. Perform OVST testing at a rate of one (1) IA test per five (5) QAM VST for strength (3 cylinders) and permeability. Record the results of the OVST tests on a TL-28.	

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
14.	**Hydraulic Cement Concrete Pavement (Continued)**		Monitor that the in-place concrete is properly cured based on the current and forecasted weather conditions. Control cylinders and flexural beams cast should be cured in the same manner as the in-place concrete. Frequency - Weekly	
			Intermittently monitor the sealing of joints and any required repairs of cracks and honeycombs. Frequency - Per each section of concrete pavement	
			Perform OIA testing at a rate of one (1) OIA test per five (5) days production for consistency (slump), air entrainment, unit weight, temperature. Perform OIA testing at a rate of one (1) OIA test per two (2) QAM VST for strength (3 cylinders) and permeability.	

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
15.	**Load Bearing Piles** **VDOT** **Section 403** **&** **2005 Construction Manual**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Verify by observation or review of the QAM's records, that each pile foundation has been accepted by the QA Manager. Frequency - 10% of the foundations on the Project.	Review the completed pile driving records and center of gravity calculations to verify that the appropriate QA/QC monitoring was performed during the operation.
		Verify design documents that relate to the work to be performed have been approved	Monitor the pile driving operation and verify that one (1) QC Inspector is present while piles are driven and results are documented for each pile. Frequency - Weekly	
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan	Perform Center of Gravity Calculations on one (1) out of 50 piles corresponding to a QAM IA.	
		Review items of work and the frequency of OIA and OVST Inspections.		
		Verify the material to be used has been approved.		
		Verify the equipment to be used has been approved		
		The OIA and OVST Manager shall verify, either through direct observation or through review of the QAM's records, that each pile foundation has been accepted by the QAM.		

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
16.	**Bridge Hydraulic Cement Concrete Operations** **VDOT** **Section 217/404/406/412**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Verify formwork and rebar conforms to the plans and specifications and is free of debris. Frequency - 10% of concrete placements Observe the screed dry run for bridge decks and bring deficiencies to the attention of the QA Manager.	Monitor that the in-place concrete is properly cured based on the current and forecasted weather conditions. Control cylinders cast should be cured in the same manner as the in-place concrete.
		Verify design documents that relate to the work to be performed have been approved.	Monitor the QA/QC operations and verify that two (2) Concrete Field Certified QC Inspectors are present during the entire placement and that proper testing methods are being implemented. Verify that the proper frequency of testing and material samplings is performed by appropriate QA and QC personnel. Frequency - Weekly or continuously for bridge decks	Physical field inspection performed with final payment.
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan	Perform OVST testing at a rate of one (1) every ten (10) QAM VST tests for consistency (slump), air entrainment, unit weight, temperature and at a rate of one (1) for every two (2) QAM VST for strength (3 cylinders) and permeability. This is an independent sample (not a split sample). VDOT Project Manager shall record the results of the VDOT VST tests on a TL-28.	
		Review items of work and the frequency of OIA and OVST Inspections.	Monitor that the in-place concrete is properly cured based on the current and forecasted weather conditions. Control cylinders cast should be cured in the same manner as the in-place concrete. Frequency - Weekly	

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
16.	**Bridge Hydraulic Cement Concrete Operations (Continued)**	Verify the material to be used has been approved.	Perform OIA testing at a rate of one (1) every ten (10) QAM VST tests for consistency (slump), air entrainment, unit weight, temperature and at a rate of one (1) for every two (2) QAM VST for strength (3 cylinders) and permeability. This is a split sample with QAM.	
		Verify the equipment to be used has been approved and calibrated.		

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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17.	**Hydraulic Cement Concrete Items** **VDOT Sections 217/404/412/502**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	**Greater than 25 cubic yards** - monitor the QAM VST and QC operations and verify that two (2) Certified Concrete Field QC Inspectors are present during the entire placement and that proper testing methods are being implemented. **Incidental concrete placements less than 25 cubic yards** - monitor the QAM VST and QC operations and verify that one (1) Certified Concrete Field QC Inspector is present during placement activity placement and that proper testing methods are being implemented. Frequency - Weekly Verify that the proper frequency of testing and material samplings is performed by the QA/QC personnel.	Monitor that the in-place concrete is properly cured based on the current and forecasted weather conditions. Control cylinders cast should be cured in the same manner as the in-place concrete.
		Verify design documents that relate to the work to be performed have been approved.	Perform OVST tests for consistency (slump) and air entrainment at a rate of one (1) OVST for each ten (10) QAM VST and take cylinders at a ratio of one (1) OVST test for each two (2) QAM VST tests. This is an independent sample (not split). Provide written notice of non-compliant materials to the Design-Builder's QA Manager.	Physical field inspection performed with final payment.
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan	Monitor that the in-place concrete is properly cured based on the current and forecasted weather conditions. Control cylinders cast should be cured in the same manner as the in-place concrete. Frequency - Weekly	

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
17.	**Hydraulic Cement Concrete Items (Continued)**	Review items of work and the frequency of OIA and OVST Inspections.	Perform OIA tests for consistency (slump) and air entrainment at a rate of one (1) OIA for each ten (10) QAM VST and take cylinders at a ratio of one (1) OIA test for each two (2) QAM VST tests. This is a split sample.	
		The hydraulic cement concrete mix design to be used has been approved.		

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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18.	**Structural Steel** **VDOT** **Section 407**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Verify by observation or review of the QAM's records, that the structure has been accepted by the Quality Assurance Manager. Frequency - 10% of the structures on the Project	Verify, either through direct observation or through review of the QAM's records, that each structure has been accepted by the QAM.
		Verify design documents that relate to the work to be performed have been approved.	Monitor structural steel erection operations and observe the QC Inspections of weld quality and bolt torque. Frequency - Weekly; but no less than once per span Directly observe the QC inspections of weld quality and bolt torque – each 4 hour shift.	Physical field inspection performed with final payment.
		Review the shop drawings and/or erection drawings and verify they have been approved.		
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan.	QC – Obtain samples of bolts for lab (ROT- CAP) testing, Ensure wrenches are calibrate and Turn of the Nut test is performed on 10% each connection. Frequency - Daily QAM IA – Observe daily calibration of wrench and observe/monitor crew during each 4 hour shift. Frequency - Daily QAM VST sample of bolt for (ROT –CAP) each lot of bolts and verify Turn of the Nut test on 25% of each slip critical connection. Frequency - Daily	

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
18.	**Structural Steel**	Review items of work and the frequency of OIA and OVST Inspections.	OIA – Observe QAM VST ROT-CAP testing twice (2) at design builder's lab. OIA - Witness calibration of wrench on project and, monitor installation by each crew. OIA - witness QAM IA and QAM VST on Turn of the Nut test. OIA Frequency – Weekly OVST – test 10% QAM VST for ROT CAP, tension and galvanization. OVST – perform one independent ROT-Cap test OVST – Verify Skidmore test equipment on the project and at design builders lab calibrated in last 12 months.	
		Verify the material to be used has been approved.	QC – review bolt documentation	

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
19.	**Protective Coating of Metal in Structures** **VDOT Section 411**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Monitor the surface preparation of the structure prior to application of protective coatings and during the coating operation to verify that proper QAM and QC Inspection procedures are followed. Frequency - Weekly	Spot check coating thickness on the structure at a rate determined by the QAM IA and VST requirements but no less than once per structure.
		Verify design documents that relate to the work to be performed have been approved. Verify contractor certifications (SSPC, CIH, PE) and reference documents/specifications such as SSPC, NACE etc are available. Environmental plan where needed		Physical field inspection performed with final payment.
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan.	QC – 3 surface profiles and 5 spot thickness measurements - daily QAM IA – 2 profiles - weekly QAM IA 1 spot thickness measurement – daily QAM VST -1 surface profile and 1 spot thickness measurements - monthly	
		Review items of work and the frequency of OIA and OVST Inspections.	OIA – Observe 10% of QAM IA profiles and thickness OVST – perform one independent surface profile and spot measurement – quarterly (3 mo.)	
		Verify the coating system to be used has been approved.		

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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20.	**Underdrains** **VDOT** **Section 501**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Check cut areas for springs and seepage after heavy rains. If problems are found, an investigation by the designer is required. Frequency - Per each heavy rainfall event	Verify that QAM has checked pipe outlets to ensure they are not been crushed or displaced during construction.
		Verify design documents that relate to the work to be performed have been approved.		Physical field inspection performed with final payment.
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan	QC – inspect all outlet locations and 10% of longitudinal sections (VTM 108) QAM IA – Observe 10% of outlet locations and 1% of longitudinal sections QAM VST – inspect 4% outlet locations independent of QAM IA. Frequency - Weekly	
		Verify items of work and the frequency of OIA and OVST Inspections.	OIA – observe 20% of QAM IA OVST – select one independent site	
		Verify the material to be used has been approved.		

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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21.	**Guardrail** **VDOT** **Section 505**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work..	Verify that the operation is monitored by a QC Inspector with at current GRIT certification. Frequency - Daily	Review the installation and report noted deficiencies to the QAM.
		Verify design documents that relate to the work to be performed have been approved.		Physical field inspection performed with final payment.
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan	Verify that the operation is monitored by a QC Inspector with at current GRIT certification. QC performed daily: QAM IA – check height every 50 feet QAM VST – check height every 500 feet	
		Review items of work and the frequency of OIA and OVST Inspections.	OIA – observe QAM VST – one/mile OVST – select one independent site – height check	
		Verify the material to be used has been approved.	Verify end treatments and material documentation	

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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22.	**Fencing** **VDOT** **Section 507**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	N/A	Review the final installation and document that installation and material type is acceptable; report noted deficiencies to the QAM.
		Verify design documents that relate to the work to be performed have been approved.	N/A	Physical field inspection performed with final payment.

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
23.	**Right-of-Way Monuments** **VDOT** **Section 503**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	N/A	Review the final installation and document that installation and material type is acceptable; report noted deficiencies to the QAM.
		Verify design documents that relate to the work to be performed have been approved.		Physical field inspection performed with final payment.
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan	QC- verify 10% - type and location QAM IA – observe 1% - type and location QAM VST – Review documentation - monthly	
		Review items of work and the frequency of OIA and OVST Inspections.	OIA – 1% of QAM IA OVST – Review documentation on completion	
		Review the material to be used has been approved.		

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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24.	**Maintenance of Traffic** **VDOT** **Section 512**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Monitor that Flaggers are certified and properly attired. Frequency - Daily	Review the site to make sure that signs are removed after completion of the operation.
			Review the weekly Work Zone Safety Checklists completed by the QAM and QC personnel for completeness and accuracy. Frequency - Monthly	Physical field inspection performed with final payment.

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

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No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
25.	**Pavement Marking** **VDOT** **Section 704** **&** **VTM 94**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	During Operations, verify that one (1) Certified Pavement Marking Technician is present and observing application thickness and bead rate testing. Frequency - Daily	Review the completed installation for uniformity and conformance with the requirements of the specifications.
		Verify design documents that relate to the work to be performed have been approved.		Physical field inspection performed with final payment.
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan	QC – perform VTM 94 at start and every 3 hours – Daily QAM IA – observe start up calibrations, take one plate sample and review C85 – Daily QAM VST – Randomly select 3 areas (10 ft) for visual inspection (day and night)	
		Review items of work and the frequency of OIA and OVST Inspections.	OIA – review 5% C85 for compliance with VTM 94 OVST – two (day and night) driving inspections	
		Verify the material to be used has been approved.		

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

Virginia Department of Transportation
Appendix 4 - Table A-4
Concessionaire/Design-Builder's Minimum Requirements for Inspection, Sampling and Testing of Definable Features of Work
January 2012

No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
26.	**Sound Barrier Walls** **VDOT** **Section 519**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	N/A	Review the final installation and document that installation and material type is acceptable; report noted deficiencies to the QAM.
		Verify design documents that relate to the work to be performed have been approved.	Ensure foundation types correct and to proper depth.	Physical field inspection performed with final payment.
		Review shop drawings and verify they have been approved.		
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan		
		Review items of work and the frequency of OIA and OVST Inspections		
		Verify the material to be used has been approved.		
		Ensure Geotechnical investigation for Sound wall foundation has been completed.		

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
27.	**Topsoil and Seeding** **VDOT** **Sections 303/602/603**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	N/A	Review the final installation and report noted deficiencies to the QAM. Inspect for proper growth establishment.
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan.	Ensure seeding and mulching of slopes performed in time frames.	Physical field inspection performed with final payment.
		Review items of work and the frequency of OIA and OVST Inspections	Verify that proper material is utilized at application rates specified in plans. Frequency – As Required	
		Verify the material to be used has been approved		

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

Virginia Department of Transportation
Appendix 4 - Table A-4
Concessionaire/Design-Builder's Minimum Requirements for Inspection, Sampling and Testing of Definable Features of Work
January 2012

No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
28.	**Planting** **VDOT** **Section 605**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Monitor that plants are properly cared for during the establishment period. Frequency - Monthly	Inspect for damaged plantings and report noted deficiencies to the QAM.
		Verify design documents that relate to the work to be performed have been approved.		Physical field inspection performed with final payment.
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan.		
		Review items of work and the frequency of OIA and OVST Inspections		
		Verify the material to be used has been approved.		

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

Virginia Department of Transportation
Appendix 4 - Table A-4
Concessionaire/Design-Builder's Minimum Requirements for Inspection, Sampling and Testing of Definable Features of Work
January 2012

No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
29.	**Traffic Signs** **VDOT** **Section 700/701**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Verify that all messages and symbols are correct and conform to the requirements of the MUTCD and sign stands are properly rated and stamped as such according to the contract (i.e. NCHRP 350). Frequency - Weekly	Inspect traffic signs prior to ensure that the finished sign panels are free from cracks, gaps, streaks, wrinkles, blisters, discoloration, buckles and warps and have a smooth surface of uniform color.
		Verify design documents that relate to the work to be performed have been approved.		Physical field inspection performed with final payment.
		Review shop drawings and verify they have been approved.		
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan.		
		Review items of work and the frequency of OIA and OVST Inspections		
		Verify the material to be used has been approved.		

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

Virginia Department of Transportation
Appendix 4 - Table A-4
Concessionaire/Design-Builder's Minimum Requirements for Inspection, Sampling and Testing of Definable Features of Work
January 2012

No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
30.	**Traffic Signals** **VDOT** **Section 700/703**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Monitor the installation of traffic loop detectors for proper installation procedures. Frequency - Weekly	Verify that all traffic signals are functioning properly and that the Contractor furnished instructions for installing and maintaining the equipment and that the condition of the material is acceptable.
		Verify design documents that relate to the work to be performed have been approved including foundation design parameters.		Physical field inspection performed with final payment.
		Review shop drawings and verify they have been approved.		
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan.		
		Review items of work and the frequency of OIA and OVST Inspections.		
		Verify the material to be used has been approved.		

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

Virginia Department of Transportation
Appendix 4 - Table A-4
Concessionaire/Design-Builder's Minimum Requirements for Inspection, Sampling and Testing of Definable Features of Work
January 2012

No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
31.	**Water and Sewer Facilities** **Road & Bridge Section 520 VDOT Contract Special Provisions, Road & Bridge Standards EP-1**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Monitor pipe installation including bedding material and joint connections. Frequency - Weekly	Verify, that each line has been disinfected, if required, tested for leaks and accepted by the QAM.
		Verify design documents that relate to the work to be performed have been approved.		Physical field inspection performed with final payment.
		Review shop drawings and verify they have been approved.		
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan.		
		Review items of work and the frequency of OIA and OVST Inspections		
		Verify the material to be used has been approved.		

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

Virginia Department of Transportation
Appendix 4 - Table A-4
Concessionaire/Design-Builder's Minimum Requirements for Inspection, Sampling and Testing of Definable Features of Work
January 2012

No.	Item of Work Spec. Section	Preparatory Inspection	Intermediate Inspections	Completion Inspection
32.	**Specialty Contract Items**	Design-Builder QA Manager to schedule and conduct preparatory inspection meeting (hold point) to review work prior to beginning construction activity on feature of Work.	Monitor installation of work, as agreed. Frequency - Weekly	Physical field inspection performed with final payment.
		Verify design documents that relate to the work to be performed have been approved.		
		Review the Quality Assurance (QAM IA & VST) and Quality Control (QC) requirements as specified in the Design-Builder's QA/QC Plan.		
		Review items of work and the frequency of OIA and OVST Inspections		

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

PUBLICATIONS

Publications are available from the residency and district offices. All inspection personnel should have available the following items:

1. *VDOT Road and Bridge Specifications, 2007, including all revisions*
2. *VDOT Road and Bridge Standards, Volumes I and II (2008) including all revisions*
3. *VDOT Construction Manual, 2005*
4. *VDOT Construction Inspection Manual, April 2008*
5. *Manual of Instruction for Materials Division*
6. *VDOT 2011 Work Area Protection Manual*
7. *DCR Virginia Erosion and Sediment Control Handbook, Third Edition 1992*
8. *VDOT Guardrail Installation Training Manual ("GRIT"), May 2011.*
9. *Current VDOT Instructional & Information Memorandums*
10. *VDOT Post-Construction Manual, May 2011*
11. *VDOT Survey Manual (2010 Edition)*

WEB SITES

The following web sites are available to assist in the performance of Inspection duties:

1. http://virginiadot.org/business/const/default.asp
2. http://coweb/MaterialsNet/
3. http://coweb/construction/saap_Manual/INSPECTION_MANUAL_DEC2001.PDF
4. http://www.virginiadot.org/business/const/resources/2005%20Construction%20Manual.pdf

Note – Unless otherwise specified, minimum frequencies of testing for Intermediate Inspections are specified in Table A-3 – Parts 1 and 2, the VDOT Construction Manual of Instruction, and/or the VDOT Materials Manual of Instruction.

APPENDIX 5 - SPECIAL PROVISION FOR PROJECT COMMUNICATION AND DECISION MAKING

VIRGINIA DEPARTMENT OF TRANSPORTATION

S100B00-0708

January 3, 2005c
Reissued July 2008

I. DESCRIPTION

The intent of this provision is to establish procedures, processes and guidelines for making decisions and managing communications regarding work under contract on construction and maintenance projects. The information contained herein is not meant to be all inclusive but to serve as a minimal general framework for promoting efficient and effective communication and decision making at both the project and, if needed, executive administrative level. It is also not meant to override the decision-making processes or timeframes of specific contract requirements.

II. DEFINITIONS

For the purposes of this provision the following terms will apply and be defined as follows:

Submittals – Documents required by the contract that the Contractor must submit for the Department's review, acceptance or approval. These may include shop drawings, working drawings, material test reports, material certifications, project progress schedules, and schedule updates. The Contractor shall produce submittals as early as practicable when required by the contract so as not to delay review and determination of action.

Confirmation of verbal instructions (COVI) - Contractor requested written confirmation of agreements and instructions developed in negotiations with the Department concerning the Work under contract. Agreements must be able to be quantified using existing contract procedures and will, in the vast majority of cases, not impact contract time and cost. When time and/or cost are impacted, they must be clearly spelled out in the COVI.

Requests for information (RFI) – Requests generated by either the Contractor or the Department that the other party supplies information to better understand or clarify a certain aspect of the Work.

Requests for owner action (ROA) – Requests when the Contractor asks that the Department take certain action(s) the Contractor feels is required for proper completion of a portion of the Work or project completion.

Contract change requests (CCR) - Request where the Contractor asks the Department to make an equitable adjustment to the contract because of excusable and/or compensable events, instructions that have or have not been given or other work requiring time and/or cost beyond that specified or envisioned within the original contract.

Requests for contractor action (RCA) – Request generated by the Department where the Department asks the Contractor to take certain action that is in the best interests of the project and/or is required for proper completion of a portion of the Work or for project completion.

Contract change directives (CCD) – Directive by the Department which instructs the Contractor to perform work beyond that specified or envisioned in the original contract and which may specify instructions, time, and cost(s) to make an equitable adjustment to the original contract.

Responsible Person – The individual in the normal or escalated resolution process, for either the Contractor or the Department, having the direct authority, responsibility and accountability to formulate and respond to each category of information request.

III. PROCESS FOR DECISION MAKING

Project teams composed on responsible individuals directly involved in the administration, prosecution, and inspection of the Work from the Contractor and the Department shall define and agree upon the field decision-making process during the pre-construction conference. This information relative to the process should be written down and distributed to all parties of the process once it is established. Where there are responsibility, authority or personnel changes associated with this process such changes shall be distributed to all affected parties as quickly as practicable after they are effective so as not to delay or impede this process.

The process for making field decisions with respect to the Work detailed in the contract basically requires the following steps:

1. The Contractor and the Engineer agree on the decision-making process, the identity, authority and accountability of the individuals involved and on the cycle times for response for each category of decision.
2. The party requiring the information generates the appropriate request documents, and calls for a decision from the individual who is accountable for the particular facet of the Work under consideration within the agreed period.
3. The responding party has an internal decision-making process that supports the individual who is accountable and provides the information required within the agreed period for each category of request.
4. The party receiving the decision has an internal process for accepting the decision or referring it for further action within an agreed period of time.

The process also requires that clear and well-understood mechanisms be in place to log and track requests, document the age and status of outstanding requests and actions to be taken on requests that have not been answered within the agreed period.

Both the Department and the Contractor shall agree on the following:

- The documentation and perhaps format to be developed for each category of information requested,
- The name (as opposed to organizational position) of all individuals with the responsibility, authority and accountability to formulate and respond to each category of information requested. The District Administrator (DA) or Chief Executive Officer (CEO) of the Contractor may delegate the responsibility and authority for formulating and responding to requests, however, the accountability for meeting the established response time(s) remains with the District Administrator and CEO.
- The cycle times for each stage in the decision-making process,
- The performance measures to be used to manage the process,
- The action to be taken if cycle times are not achieved and information is not provided in a timely manner.

The following general guideline and timeframe matrix will apply to the various requests for action. Again, please note these guidelines are general in scope and may not apply to specific contract timeframes for response identified within the requirements of the Contract documents. In such cases, specific contract requirements for information shall apply.

PROCESS GUIDELINES FOR REQUESTS GENERATED BY THE CONTRACTOR

Process	Situation	Normal resolution process		Escalated process		Final resolution
		By	Within (calendar days)	By	Within	
Submittal	Where the Contractor requests the Department's review, acceptance or approval of shop drawings, materials data, test reports, project progress schedules, or other submittals required by standard Specifications or other contract language.	Department's Designated Project Manager	• Acknowledge: 3 days[1] • Accept or Return: 14 days • Final Determination\Approve: 30 days or as outlined in contract documents.	DA or their designee*	7 days	Submit ROA or CCR
Confirmation of Verbal Instruction (COVI)	Resolving routine field issues, within the framework of the Contract, in negotiation with Owner field personnel.	Department's Appropriate field personnel	• Confirmation: 1 day [2]	Submit RFI, ROA or CCR	7 days	(See process for RFI, ROA, or CCR)
Request for Information (RFI)	Requests the Department to supply information to better understand or clarify a certain aspect of the work.	Department's Designated Project Manager	• Action: 14 days (or appropriate Action Plan)	DA or their designee*	7 days	Submit ROA or CCR
Request for Owner Action (ROA)	Requests that the Department take certain action the Contractor feels is required for proper completion of a portion of the Work or project completion.	Department's Designated Project Manager	• Acknowledge: 3 days [1] • Action: 14 days (or appropriate Action Plan)	DA or their designee*	7 days	Submit CCR
Contract Change Request (CCR)	Requests the Department to make an equitable adjustment to the contract because of excusable and/or compensable events, instructions that have or have not been given or other work requiring time and/or cost beyond that specified or envisioned within the original contract.	Department's Designated Project Manager	• Acknowledge: 3 days [1] • Action: 30 days (45 days if federal oversight project)	DA or their designee*	7 days	Established dispute resolution and claims process

[1] Process initiated on the last business day of a week shall be acknowledged before 5 pm on the next VDOT business day.

[2] The absence of a written confirmation from the Owner to a Contractor's written request for confirmation of a verbal instruction shall constitute confirmation of the verbal instruction.

PROCESS GUIDELINES FOR REQUESTS GENERATED BY THE OWNER

Process	Situation	Normal resolution process		Escalated process		Final resolution
		By	Within (calendar days)	By	Within	
1. RFI	Requests the Contractor to supply information to better understand or clarify a certain aspect of the work. (RFI)	Contractor's Project Superintendent	• Action: 14 days (or appropriate written Action Plan)	Contractor's Project Manager	7 days	Submit RCA or CCD
2. RCA	Requesting the Contractor take certain action(s) that is in the best interests of the project and/or is required for proper completion of a portion of the work or for project completion. (RCA)	Contractor's Project Superintendent	• Response or Action to safety and environmental issues: 1 day • Otherwise acknowledge: 3 days [1] • Action: 14 days (or appropriate Action Plan)	Contractor's Project Manager	7 days	Submit CCD
3. CCD	Instructs the Contractor to perform work beyond that specified or envisioned in the original contract and undertakes action(s) to make an equitable adjustment to the contract. (CCD)	Contractor's Project Superintendent	• Acknowledge: 3 days [1] • Action: 30 days	CEO or their designee**	7 days	Established dispute resolution and termination process

[1] Process initiated on the last business day of a week shall be acknowledged before 5 p m on next project business day.

Appendix 6
Sample Checklists

The following checklists may be used as a guide for the Design-Builder in developing the checklists and forms required for the project QA/QC Plan.

VDOT Virginia Department of Transportation	***CLEARING AND GRUBBING INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN REVIEWED & APPROVED			
INTERMEDIATE			
EROSION CONTROL INPLACE			
CHECK CLEARING LIMITS			
VERIFY AREA STAKED AND MARKED IS IAW PLANS			
CHECK FOR BURN PERMITS			
IF BURNING PERMITTED CHECK WEATHER FOR WINDS AND DRY CONDITIONS			
STUMPS LEFT IN PLACE MAXIMUM 6” ABOVE EXISTING GROUND SURFACE			
STUMPS REMOVED IN SHALLOW FILLS			
CLEARED MATERIAL DISPOSED OF PROPERLY			
CHECK FOR DAMAGE OUTSIDE R/W			
AREA OF CLEARING CALCULATED			
DAMAGED EROSION CONTROL ITEMS REPAIRED			
TEMPORARY SEEDING WITHIN 15-DAYS (IF NECESSARY)			
COMPLETION			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:_____

_____

_____

_____

Sample

VDOT Virginia Department of Transportation	***BACKFILL OF STRUCTURES INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN APPROVED			
BACKFILL MATERIAL APPROVED & TESTING REQUIREMENTS ESTABLISHED			
STRUCTURES INSPECTED PRIOR TO BACKFILL			
INTERMEDIATE			
PERIMETER FILLS PLACED IN 6" LIFTS			
FLOWABLE BACKFILL IN PLACE IAW PLANS & SPECS			
EACH LIFT COMPACTED AT ±20% OPTIMUM MOISTURE			
EACH LIFT COMPACTED TO MINIMUM 95% DENSITY			
DENSITY TEST IAW ESTABLISHED REQUIREMENTS			
PROCTORS PERFORMED IAW ESTABLISHED REQUIREMENTS			
PERFORM INDEPENDENT VERIFICATION/ASSURANCE TESTING AS REQUIRED			
COMPLETION			
VERIFY TESTING DOCUMENTATION FOR COMPLETION AND ACCURACY			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:_____

_____

_____

_____

Sample

VDOT Virginia Department of Transportation	***PIPE AND DRAINAGE STRUCTURE INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
MATERIALS APPROVED AND CERTIFICATIONS VERIFIED			
QA/QC PLAN APPROVED			
INTERMEDIATE			
VERIFY LAYOUT			
MINOR STRUCTURE EXCAVATION CALCULATION (IF APPLICABLE)			
CHECK TRENCH WITDTH/SHORING			
CHECK FOUNDATION			
DEWATERING			
BEDDING MATERIAL (DEPTH AND SHAPING IAW PLANS & SPECS)			
VERIFY PIPE/STRUCTURE ALIGNMENT AND GRADE			
JOINING/SEALING OF PIPE			
STRUCTURE INVERT			
PIPE/STRUCTURE BACKFILL AND DENISTY TESTING			
WEEP HOLES			
STRUCTURE TOP			
COMPLETION			
TL-124'S REVIEWED FOR COMPLETION AND ACCURACY			
FINAL FIELD INSPECTION PERFORMED			

ADDITIONAL PIPE/STRUCTURE INFORMATION:

STRUCTURE TYPE:_____ PIPE SIZE:_____

STRUCTURE ID.: STR. #_____ PIPE ID: STR#_____TO STR#_____

ACTUAL INV. ELEVATION:_____ PLAN LENGTH:_____

FINAL DI HEIGHT:_____ ACTUAL LENGTH:_____

DENSITY TESTS RECORD NO'S: _____

REMARKS: _____

_____

Sample

VDOT Virginia Department of Transportation	***CAST-IN-PLACE STRUCTURES INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
APPROVED MATERIALS SOURCE			
APPROVED MIX DESIGN			
QA/QC PLAN APPROVED & TESTING REQUIREMENTS ESTABLISHED			
INTERMEDIATE			
STRENGTH REQUIREMENTS IAW PLANS & SPECS FOR PRECEDING WORK			
PROPER SUBSURFACE & BEDDING IAW PLANS & SPECS			
PROPER FORMWORK & REINFORCING STEEL IAW PLANS & SPECS			
AREA FREE OF DEBRIS, WATER, & MUD			
2 INSPECTORS PRESENT DURING ENTIRE PLACEMENT OF CONCRETE			
PROPER TESTING METHODS PERFORMED & RECORDED			
PROPER PROTECTION & CURING METHODS IAW PLANS & SPECS			
CONTROL CYLINDERS CURED IN SAME MANNER AS IN-PLACE CONCRETE			
VERIFY 28-DAY STRENGTH TESTS RESULTS IAW PLANS & SPECS			
PERFORM INDEPENDENT VERIFICATION/ASSURANCE TESTING AS REQUIRED			
COMPLETION			
VERIFY TESTING DOCUMENTATION FOR COMPLETION AND ACCURACY			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:_____

_____

_____

Sample

VDOT Virginia Department of Transportation	***EROSION & SILTATION CONTROL INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
VERIFY ALL APPLICABLE PERMITS ARE ON FILE PER CONTRACT DOCUMENTS			
INTERMEDIATE			
ARE ALL CONTROLS SHOWN ON PLAN IN PLACE, & WITHIN SPECIFICATIONS			
DENUDED AREAS STABILIZED			
DO SEEDED AREAS REQUIRE MAINTENANCE FERTILIZER, SEED, OR MULCH			
IS SEDIMENT LEAVING SITE			
PERIMETER TRAPS IN PLACE			
CUT AND FILL SLOPES STABILIZED			
EVIDENCE OF INCREASED OFF-SITE EROSION SINCE BEGINNING OF JOB			
CHANNELS AND OUTLETS STABILIZED			
INLETS PROTECTED FROM SEDIMENT			
WORK ONGOING IN LIVE STREAMS THAT REQUIRES STABILIZATION			
UTILITY TRENCHES BACKFILLED AND STABILIZED			
MUD ON PUBLIC ROADS			
ANY CONTROLS THAT CAN BE REMOVED			
CONTROLS THAT REQUIRE REPAIR OR CLEAN OUT			
ANY DEFICIENCIES NOT CORRECTED FROM LAST REPORT			
COMPLETION			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:_____

_____

_____

Sample

VDOT Virginia Department of Transportation	***EMBANKMENT INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN ACCEPTED			
MATERIAL ACCEPTED & TESTING REQUIREMENTS ESTABLISHED			
INTERMEDIATE			
VERIFY EMBANKMENT MATERIAL BEING USED IS CONSISTENT WITH APPROVED & TESTED MATERIAL (CHECK FOR MUD, MUCK, ROOT MAT, FROZEN MATERIAL, BOULDERS.)			
VERIFY INSTALLATION PROCEDURES ARE ADEQUATE (COMPACTION EQUIPMENT, BENCHING, LIFT THICKNESS)			
EACH LIFT COMPACTED AT ±20% OPTIMUM MOISTURE			
EACH LIFT COMPACTED TO MINIMUM 95% DENSITY			
FINAL GRADE AND SLOPES FORMED IAW PLANS, SPECS & TYPICAL SECTION			
EROSION & SILTATION CONTROLS MAINTAINED & TEMP OR FINAL SEEDING IAW PLANS & SPECS			
PERFORM INDEPENDENT VERIFICATION/ASSURANCE TESTING AS REQUIRED			
COMPLETION			
VERIFY TESTING DOCUMENTATION FOR COMPLETION AND ACCURACY			

REMARKS:_____

_____

_____

_____

Sample

VDOT Virginia Department of Transportation	***UNDERCUT EXCAVATION INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATOTY			
AREA OF UNDERCUT REVIEWED & DOCUMENTED			
INTERMEDIATE			
VERIFY WITH CONTRACTOR THE UNSUITABLE SOIL CONDITIONS DICTATING UNDERCUT EXCAVATION			
MONITOR & RECORD LOCATIONS, CONDITIONS, EQUIPMENT USED & MANPOWER HOURS FOR UNDERCUT OPERATIONS			
INSPECT, MEASURE AND RECORD EXCAVATED AREA PRIOR TO PLACEMENT OF APPROVED BACKFILL MATL			
BACKFILL IAW PLANS & SPECS			
PROPER DENSITY TESTS PERFORMED AND RECORDED			
MEASUREMENT & PAYMENT IAW PLANS, SPECS & CONTRACT PROVISIONS			
COMPLETION			
VERIFY TESTING DOCUMENTATION FOR COMPLETION AND ACCURACY			

REMARKS:_____

_____

_____

_____

Sample

VDOT Virginia Department of Transportation

AGGREGATE BASE MATERIAL INSPECTION FORM

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN REVIEWED & ACCEPTED			
APPROVED MATERIALS			
INTERMEDIATE			
EXISTING SURFACE (SUBGRADE) PREPARED IAW PLANS & SPECS			
BASE COURSE MATL MIXED IAW APPROVED METHODS			
VERIFY INSTALLATION PROCEDURES (USE OF SPREADER BOX, WATER TRUCK, SMOOTH DRUM ROLLERS)			
CONTROL STRIP & TEST SECTION PERFORMED IAW PLANS & SPECS			
MAXIMUM 6” LIFT THICKNESS OBSERVED (UNLESS OTHERWISE APPROVED)			
PROPER DEPTH & DENSITY TESTS PERFORMED AND RECORDED			
PROPER COMPACTION BETWEEN LIFTS			
FINAL SURFACE PROTECTION IAW PLANS & SPECS			
PERFORM INDEPENDENT VERIFICATION/ASSURANCE TESTING AS REQUIRED			
COMPLETION			
VERIFY TESTING DOCUMENTATION FOR COMPLETION AND ACCURACY			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:_____

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Sample

VDOT Virginia Department of Transportation	***CEMENT TREATED AGGREGATE INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN REVIEWED & ACCEPTED			
APPROVED MATERIALS			
INTERMEDIATE			
EXISTING SURFACE (SUBGRADE) PREPARED IAW PLANS & SPECS			
BASE COURSE MATL MIXED IAW APPROVED METHODS			
VERIFY INSTALLATION PROCEDURES (USE OF SPREADER BOX, WATER TRUCK, SMOOTH DRUM ROLLERS)			
CONTROL STRIP & TEST SECTION PERFORMED IAW PLANS & SPECS			
MAXIMUM 6” LIFT THICKNESS OBSERVED (UNLESS OTHERWISE APPROVED)			
PROPER DEPTH & DENSITY TESTS PERFORMED AND RECORDED			
PROPER COMPACTION BETWEEN LIFTS			
FINAL SURFACE PROTECTION IAW PLANS & SPECS			
PERFORM INDEPENDENT VERIFICATION/ASSURANCE TESTING AS REQUIRED			
COMPLETION			
VERIFY TESTING DOCUMENTATION FOR COMPLETION AND ACCURACY			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:_____

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Sample

VDOT Virginia Department of Transportation	***STABILIZED OPEN-GRADED MATERIAL INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
APPROVED MATERIALS			
INTERMEDIATE			
PROPER SURFACE CONDITIONS OBSERVED IAW SPECS			
2 INSPECTORS PRESENT DURING ENTIRE PLACEMENT			
STABILIZATION MATL PROPORTIONING APPLIED IAW APPROVED PLANS, SPECS & CONTRACT PROVISIONS			
TEMPERATURE REQUIREMENTS IAW PLANS & SPECS			
EQUIPMENT USED IS ADEQUATE			
PROPER TESTING PROCEDURE PERFORMED AND RECORDED			
CURING PROCEDURES OBSERVED IAW PLANS & SPECS			
COMPLETION			
VERIFY TESTING DOCUMENTATION FOR COMPLETION AND ACCURACY			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:

Sample

VDOT Virginia Department of Transportation	***SOIL STABILIZATION INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN REVIEWED & ACCEPTED			
APPROVED MATERIALS			
INTERMEDIATE			
PREPARATION OF EXISTING SURFACE IAW PLANS & SPECS			
MATERIAL SCARIFIED & PULVERIZED IAW PLANS & SPECS			
CEMENT & OTHER APPROVED ADMIXTURES APPLIED IAW APPROVED PROCEDURES (MIX-IN-PLACE OR CENTRAL PLANT METHOD)			
COMPACTION AND FINISHING PROCEDURES PERFORMED IAW PLANS & SPECS			
CONSTRUCTION JOINTS IAW PLANS & SPECS			
DENSITY & THICKNESS TESTING PERFORMED AND RECORDED			
PROPER PROTECTION & CURING PROCEDURES OBSERVED IAW PLANS & SPECS			
COMPLETION			
VERIFY TESTING DOCUMENTATION FOR COMPLETION AND ACCURACY			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:_____

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Sample

VDOT Virginia Department of Transportation	***ASPHALT SURFACE TREATMENT INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN REVIEWED & ACCEPTED			
MATERIALS FROM APPROVED SOURCE			
EQUIPMENT PROPERLY CALIBRATED			
INTERMEDIATE			
SURFACE PREPARATION IAW PLANS & SPECS			
LIQUID ASPHALT APPLICATION RATE IAW APPROVED PLAN, SPECS & CONTRACT PROVISIONS			
COVER MATERIAL APPLICATION RATE IAW APPROVED PLAN, SPECS & CONTRACT PROVISIONS			
COMPLETION			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:

Sample

VDOT Virginia Department of Transportation	***ASPHALT CONCRETE PAVEMENT INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN REVIEWED & ACCEPTED			
ASPHALT MIX DESIGN APPROVED			
INTERMEDIATE			
FINAL SUBBASE INSPECTION FOR PROPER LINE, GRADE, AND CONFORMITY IAW PLANS, SPECS AND CONTRACT PROVISIONS			
2 INSPECTORS PRESENT DURING ENTIRE PLACEMENT OPERATIONS			
EQUIPMENT CALIBRATION OBSERVED AND APPROVED			
CONTROL STRIPS PERFORMED, OBSERVED, TESTED AND APPROVED			
ROLLER PATTERNS PERFORMED, OBSERVED, TESTED AND APPROVED			
TACK PLACEMENT AND APPLICATION RATE IAW PLANS & SPECS			
PROPER MATERIAL LIFTS OBSERVED AND APPROVED			
DENSITY TESTING PERFORMED			
RE-TEST WHERE COMPACTION TESTS VARY GREATER THAN 2%			
PERFORM INDEPENDENT VERIFICATION/ASSURANCE TESTING AS REQUIRED			
COMPLETION			
VERIFY TESTING AND MATERIALS DOCUMENTATION FOR COMPLETION AND ACCURACY			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:_____

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Sample

VDOT Virginia Department of Transportation	***HYDRAULIC CEMENT CONC. PAVEMENT INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN REVIEWED & ACCEPTED			
APPROVED MIX DESIGN			
INTERMEDIATE			
FINAL SUBBASE INSPECTION FOR PROPER LINE, GRADE AND CONFORMITY IAW PLANS, SPECS AND CONTRACT PROVISIONS			
WHERE APPLICABLE, PROPER REINFORCEMENT STEEL PLACEMENT AND TIED IAW PLANS & SPECS			
2 INSPECTORS PRESENT DURING ENTIRE PLACEMENT OPERATIONS			
PROPER FIELD TESTING BEING PERFORMED AND RECORDED			
JOINT CONSTRUCTION IAW PLANS & SPECS			
PROPER CURING PROCEDURES OBSERVED			
CONTROL CYLINDERS CURED IN SAME MANNER AS IN-PLACE CONCRETE			
JOINT SEALS INSTALLED IAW PLANS & SPECS			
PERFORM INDEPENDENT VERIFICATION/ASSURANCE TESTING AS REQUIRED			
COMPLETION			
VERIFY TESTING AND MATERIALS DOCUMENTATION IS COMPLETE AND ACCURATE			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:_____

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Sample

VDOT Virginia Department of Transportation	***LOAD BEARING PILES INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN REVIEWED & ACCEPTED			
MATERIALS APPROVED			
EQUIPMENT APPROVED			
INTERMEDIATE			
VERIFY TYPE PILE TO BE USED IN STRUCTURE FROM PLANS			
ENSURE TESTING REQUIREMENTS OF PILING HAVE BEEN MET. (HEAT #'S, QA STAMPS, ETC)			
VERIFY THAT DRIVING HAMMER IS APPROVED AND REQUIRED HAMMER BLOWS FOR REFUSALS			
CHECK ELEVATION OF EXCAVATION TO ENSURE PROPER ELEVATION			
CHECK PILING LOCATIONS AFTER CONTRACTOR HAS PERFORMED LAYOUT			
VERIFY LOCATIONS OF VERTICAL AND BATTERED PILING			
OBSERVE PILE DRIVING OPERATIONS TO VERIFY BLOW COUNTS			
ENSURE WELDING AT SPLICES ON STEEL PILES IS PERFORMED BY CERTIFIED WELDER (OBTAIN CERTIFICATION)			
VERIFY CORRECT NUMBER AND LENGTH OF SPLICES			
CALCULATE TOTAL LENGTH OF PILING DRIVEN FROM CUTOFF ELEVATION			
VERIFY CORRECT LOCATION OF PILINGS WHEN DRIVING IS COMPLETE. COMPUTE CENTER OF GRAVITY AS NEEDED.			
COMPLETE			
VERIFY TESTING AND MATERIALS DOCUMENTATION IS COMPLETE AND ACCURATE			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:_____

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Sample

VDOT Virginia Department of Transportation	***BRIDGE H.C.C. OPERATIONS INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN REVIEWED & ACCEPTED			
OBTAIN AN APPROVED MIX DESIGN FOR ALL CONCRETE MIXES TO BE USED			
EQUIPMENT APPROVED			
INTERMEDIATE			
VERIFY DIMENSIONS AND ELEVATIONS OF FORM WORK			
FORMWORK AND REINFORCEMENT STEEL (CORRECT SIZE, TYPE, GRADE AND PLACEMENT) IAW PLANS, SPECS & CONTRACT PROVISIONS			
SHOP DRAWINGS SUBMITTED AND APPROVED FOR SIP METAL DECK FORMS			
CHECK DECK SCREED FOR PROPER OPERATION AND GRADE			
VERIFY WEATHER / TEMPERATURE LIMITATION REQUIREMENTS ARE IAW PLANS AND SPECS			
ENSURE AUTHORIZATION FOR PUMPING OF CONCRETE IS APPROVED BY ENGINEER			
VERIFY PLACEMENT SEQUENCE IAW PLANS, SPEC, AND CONTRACT PROVISIONS			
2 INSPECTORS PRESENT DURING ENTIRE PLACEMENT OF CONCRETE			
OBSERVE PLACEMENT AND TESTING OF CONCRETE DURING PLACEMENT AND PERFORM INDEPENDENT VERIFICATION TESTING AS REQUIRED			
VERIFY LOCATION OF CONSTRUCTION JOINTS ARE IAW PLANS, SPECS, & CONTRACT PROVISIONS			

Sample

VDOT Virginia Department of Transportation	***BRIDGE H.C.C. OPERATIONS INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____ PAGE NO.:____2___

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
INTERMEDIATE - Continued			
ENSURE PROPER BONDING AND WATERPROOFING OF CONSTRUCTION JOINTS			
CHECK AND ENSURE REQUIREMENTS FOR FORM REMOVAL ARE MET			
ENSURE PROPER PROTECTION AND CURING METHODS ARE USED			
OBSERVE OVERDEPTH PROBES OF DECK CONCRETE AND VERIFY RECORDKEEPING OF SAME			
CONTROL CYLINDERS CURED IN SAME MANNER AS IN-PLACE CONCRETE			
VERIFY 28-DAY STRENGTH TESTS RESULTS IAW PLANS & SPECS			
CHECK DECK FOR IMPERFECTIONS AND REPAIR IF NECESSARY			
CHECK BRIDGE SEAT BEARING AREAS FOR LIMITS OF TOLERANCE			
COMPLETION			
VERIFY TESTING DOCUMENTATION FOR COMPLETION AND ACCURACY			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:

Sample

VDOT Virginia Department of Transportation	***HYDRAULIC CEMENT CONC ITEMS INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN REVIEWED & ACCEPTED			
MIX DESIGN APPROVED			
INTERMEDIATE			
PROPER SUBSURFACE & BEDDING IAW PLANS & SPECS			
PLACEMENT IAW PLANS & SPECS			
1 INSPECTOR PRESENT DURING ENTIRE PLACEMENT OF LESS THAN 25 CY			
2 INSPECTORS PRESENT DURING ENTIRE PLACEMENT OF GREATER THAN 25 CY			
REQUIRED ON-SITE TESTS TAKEN AND RECORDED			
PROPER CURING PRECEDURES OBSERVED			
CONTROL CYLINDERS CURED IN SAME MANNER AS IN-PLACE CONCRETE			
PERFORM INDEPENDENT VERIFICATION/ASSURANCE TESTING AS REQUIRED			
COMPLETION			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:

Sample

VDOT Virginia Department of Transportation	***STRUCTURAL STEEL INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN REVIEWED & AQCCEPTED			
VERIFY APPROVED SHOP DRAWINGS			
MATERIALS APPROVED			
INTERMEDIATE			
ENSURE PROPER STORAGE OF STRUCTURAL ITEMS (4" ABOVE GROUND)			
HOLES REAMED 1/8" MAXIMUM DURING ALIGNMENT			
VERIFY PROPER STRENGTH BOLTS USED			
ENSURE PROPER TORQUE OF BOLT TIGHTENING			
SPOT CHECK WELDS, BOLTED CONNECTIONS, ETC. FOR COMPLIANCE			
VERIFY PROPER PAINT SYSTEM IS USED			
COMPLETION			
VERIFY ACCEPTANCE BY QAM			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:

Sample

VDOT Virginia Department of Transportation	***PROTECTIVE COATINGS INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN REVIEWED & ACCEPTED			
MATERIALS APPROVED			
ENSURE THAT CONTRACTOR HAS ALL REQUIRED CERTIFICATIONS TO PERFORM PROTECTIVE COATINGS AND COATING REMOVAL OPERATIONS			
VERIFY PE CERTIFICATIONS REQUIREMENT FOR STRUCTURES WITH CONTAINMENT			
INTERMEDIATE			
INSPECT STRUCTURAL MEMBERS TO ENSURE PROPER REMOVAL OF EXISTING COATINGS AS REQUIRED			
INSPECT STRUCTURAL MEMBERS TO ENSURE PREP WORK IS SUFFICIENT (CLEANING/REMOVAL OF RESIDUE)			
ENSURE PROPER COATING SYSTEM AND COMPONENTS ARE USED			
VERIFY APPLICATION LIMITATIONS (TEMPERATURE, HUMIDITY, ETC.)			
VERIFY APPLICATION PROCEDURES IAW PLANS & SPECS			
CHECK MIL THICKNESS OF COATING			
COMPLETION			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:_____

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Sample

VDOT Virginia Department of Transportation	***UNDERDRAINS INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPATATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN REVIEWED & ACCEPTED			
APPROVED MATERIALS			
INTERMEDIATE			
INSTALLED IAW PLANS, SPECS & CURRENT STANDARDS			
SLOPES CHECKED AFTER HEAVY RAINFALL FOR SEEPAGE			
CORRECTIONS TAKEN IF NECESSARY			
VERIFY UPSTREAM ENDS RECEIVE PLUGS			
CHECK GEOTEXTILE FABRIC FOR PROPER INSTALLATION			
VERIFY PROPER AGGREGATE SIZE USED AND AGGREGATE MATERIAL IS CLEAN & FREE OF FOREIGN MATERIALS			
OUTLET PIPES VISUALLY CHECKED FOR CRUSHED, CLOGGED OR DISPLACEMENT			
VERIFY ENDWALL PLACEMENT HAS CORRECT ALIGNMENT AND IS BELOW FINAL SHOULDER ELEVATION			
COMPLETION			
FINAL FIELD INSPECTION PERFORMED			

Sample

REMARKS:_____

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VDOT Virginia Department of Transportation	***GUARDRAIL INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN REVIEWED & ACCEPTED			
MATERIALS FROM APPROVED SOURCE			
INTERMEDIATE			
GUARDRAIL INSTALLED IAW PLANS, SPECS, CURRENT STANDARDS, & SPECIAL PROVISIONS			
DAILY INSPECTION BY A GRIT CERTIFIED INSPECTOR			
VERIFY LON (LENGTH OF NEED) CALCULATIONS FOR END TREATMENTS			
SPOT CHECK HEIGHT AND ALIGNMENT			
COMPLETION			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:

Sample

VDOT Virginia Department of Transportation	***FENCING INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN REVIEWED & ACCEPTED			
MATERIALS FROM APPROVED SOURCE			
INTERMEDIATE			
FENCE INSTALLED IAW PLANS, SPECS, STANDARDS & SPECIAL PROVISIONS			
COMPLETION			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:

Sample

VDOT Virginia Department of Transportation	***RIGHT OF WAY MONUMENTS INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN REVIEWED & ACCEPTED			
MATERIAL CONFORMS TO THE SPECS			
INTERMEDIATE			
VERIFY LOCATION STAKEOUT IS CORRECT			
MONUMENTS PLACED IAW PLANS OR AS DIRECTED BY THE ENGINEER			
PROPER BACKFILL COMPACTION TO AVOID DISPLACEMENT OF MONUMENT			
COMPLETION			
FINAL FIELD INSPECTION REVIEW PERFORMED			

REMARKS:_____

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Sample

VDOT Virginia Department of Transportation	***MAINTENANCE OF TRAFFIC INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
TRAFFIC CONTROLS APPROPRIATELY DESIGNED TO MAINTAIN TRAFFIC			
INTERMEDIATE			
MATERIALS CONFORM TO THE SPECS			
SIGNALIZATION, BARRICADES, CHANNELIZING DEVICES, SAFETY DEVICES & PAVEMENT MARKINGS CONFORM TO SPECS, VIRGINIA WORK AREA PROTECTION MANUAL & MUTCD STANDARDS			
SIGNS PLACED IAW VIRGINIA WORK AREA PROTECTION MANUAL & MUTCD STANDARDS			
CERTIFIED FLAGGERS			
CONTRACTOR PROPER MAINTENANCE OF TRAFFIC CONTROL DEVICES			
COMPLETION			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:

Sample

VDOT Virginia Department of Transportation	***PAVEMENT MARKING INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN REVIEWED & ACCEPTED			
MATERIALS FROM APPROVED SOURCE			
INTERMEDIATE			
INSTALLED IN LOCATIONS SHOWN ON THE PLANS			
INSTALLED IAW VIRGINIA WORK AREA PROTECTION PLAN			
INSTALLED IAW MANUFACTURER'S RECOMMENDATIONS			
CERTIFIED PAVEMENT MARKING TECHNICIAN PRESENT AND OBSERVING APPLICATION			
COMPLETION			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:

Sample

VDOT Virginia Department of Transportation	***SOUND BARRIER WALLS INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN REVIEWED & ACCEPTED			
MATERIALS APPROVED			
SHOP DRAWING SUBMITTALS REVIEWED AND APPROVED			
INTERMEDIATE			
PILE INSTALLATION IAW PLANS & SPECS			
BARRIER WALL INSTALLED IAW PLANS, SPECS, & STANDARDS FOR TYPE SPECIFIED			
SPOT CHECK TOP FACE ALIGNMENT IS WITHIN DEVIATION ALLOWANCES			
COMPLETION			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:

Sample

VDOT Virginia Department of Transportation	***TOPSOIL AND SEEDING INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
QA/QC PLAN REVIEWED & ACCEPTED			
MATERIALS APPROVED			
INTERMEDIATE			
SITE LOCATION IAW PLANS			
TOPSOIL CLASSIFICATION IAW THE PLANS & SPECS			
BRUSH, ROOTS, STUMPS, LITTER REMOVED			
AREAS PROPERLY PREPARED TO RECEIVE SEED (SLOPES ARE COMPACTED AND GROOVED)			
AREA SEEDING TIME LIMITS ARE IAW PLANS, SPECS, CONTRACT PROVISIONS, & VIRGINIA DCR REQUIREMENTS			
SEED MIXTURE APPLIED IAW ROADSIDE DEVELOPMENT PLANS (INCLUDING SEED, LIME, FERTILIZER)			
MULCH APPLIED IAW PLANS & SPECS			
COMPLETION			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:_____

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Sample

VDOT Virginia Department of Transportation	***PLANTING INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
QA/QC PLAN REVIEWED & ACCEPTED			
MATERIALS APPROVED			
INTERMEDIATE			
PLANTS PROPERLY IDENTIFIED AND INSPECTED PRIOR TO PLANTING			
INSTALLATION IAW PLANS, SPECS, & CURRENT STANDARDS			
MULCHING, STAKING & GUYING, WRAPPINGS, WATERING, ETC. IAW PLANS, SPECS, & CURRENT STANDARDS			
PROPER DOCUMENTATION & CONTRACTOR NOTIFICATION OF ESTABLISHMENT PERIOD BEGIN AND END DATES IS COMPLETE			
AT THE END OF THE ESTABLISHMENT PERIOD, DEAD & DEFECTIVE PLANTS ARE REPLACED IAW PLANS, & SPECS			
COMPLETION			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:_____

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Sample

VDOT Virginia Department of Transportation	***TRAFFIC SIGNS INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN REVIEWED & ACCEPTED			
MATERIALS APPROVED			
SHOP DRAWING SUBMITTALS REVIEWED AND APPROVED			
INTERMEDIATE			
SIGN LOCATION LAYOUT IAW PLANS			
MESSAGES & SYMBOLS ARE CORRECT AND IAW MUTCD STANDARDS			
SIGN FOUNDATIONS AND POSTS INSTALLED IAW APPROVED SHOP DRAWINGS			
INSTALLATION IS IAW PLANS, SPECS, CURRENT STANDARDS, CONTRACT PROVISIONS & MUTCD STANDARDS			
SIGN PANELS ARE FREE OF CRACKS, GAPS, STREAKS, WRINKLES, BLISTERS, DISCOLORATIONS, BUCKLES, WARPS AND HAVE A SMOOTH SURFACE OF UNIFORM COLOR			
COMPLETION			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:_____

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Sample

VDOT Virginia Department of Transportation	***TRAFFIC SIGNALS INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN REVIEWED & ACCEPTED			
MATERIALS APPROVED			
SHOP DRAWING SUBMITTALS REVIEWED AND APPROVED			
INTERMEDIATE			
ENSURE ALL FOUNDATIONS, DEVICES, ETC. ARE CONSTRUCTED WITHIN THE R/W SHOWN ON THE PLANS			
FOUNDATIONS AND POLES INSTALLED IAW APPROVED SHOP DRAWINGS			
INSTALLATION IS IAW PLANS, SPECS, CURRENT STANDARDS, CONTRACT PROVISIONS & MUTCD STANDARDS			
VERIFY TRAFFIC LOOP DETECTORS INSTALLED IAW PLANS & SPECS			
SYSTEM TESTING IS COMPLETE AND ACCEPTABLE			
ALL SIGNALS ARE FUNCTIONING AS DESIGNED			
COMPLETION			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:_____

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Sample

VDOT Virginia Department of Transportation	***WATER & SEWER FACILITIES INSPECTION FORM***

REPORT NO.:_____ DATE OF WORK:_____

PROJECT NO.:_____CONTRACTOR:_____

LOCATION:_____

PLAN PAGE:_____INSPECTOR: _____

ITEM	INSPECTOR (INITIAL)	DATE	REMARKS
PREPARATORY			
DESIGN DOCUMENTS APPROVED			
QA/QC PLAN REVIEWED & ACCEPTED			
MATERIALS APPROVED			
SHOP DRAWING SUBMITTALS REVIEWED AND APPROVED			
INTERMEDIATE			
WATER & SEWER HORIZONTAL & VERTICAL MINIMUM SEPARATION REQUIREMENTS IAW PLANS & SPECS			
TRENCH EXCAVATION IAW SECT. 302			
PIPE & FITTINGS INSPECTED FOR CRACKS AND DEFECTS BEFORE LOWERED INTO TRENCH			
FOUNDATION APPROVED & BEDDING MATERIAL IAW PLANS & SPECS			
BACKFILL MATERIAL APPROVED AND INSTALLED IAW PLANS, SPECS & CURRENT STANDARDS			
VERIFY DISINFECTING, LEAK TESTING, AND SYSTEM TESTING IS COMPLETE AND APPROVED BY THE QAM			
COMPLETION			
PROPER DOCUMENTATION IS ON FILE WITH LOCALITY (IF APPLICABLE)			
FINAL FIELD INSPECTION PERFORMED			

REMARKS:_____

_____

_____

_____

Sample

Date _____ Page No: _____ of ___

Contract No: _____

Contractor: _____ Hours: From: To:

Weather: Low: _____ High: _____ Condition: _____

WORK CONDITIONS: ☐**GOOD** ☐**FAIR** ☐**POOR** ☐**UNWORKABLE**

VISITORS:

WORK IN PROGRESS:

Communications and instructions given to the Contractor and its QA/QC Team:

Sample

PLAN CHANGES:

REMARKS

Submittals Received
Independent Verification tests performed:
Independent Assurance performed:
Preparatory Inspections attended:
Intermediate Inspections performed :
Final Inspections performed :
Non-conformance reports received:
Reports of corrected and pending actions to correct Non-conformance Reports
Other Comments:

.

SIGNED

_____

NAME TITLE

Sample

VDOT Virginia Department of Transportation	***INSPECTOR'S DAILY REPORT***	REPORT NO:	

Date: _____ Page No: _____ of _____

Contract No: _____

Contractor: _____

Inspector: _____ Hours: From: _____ To: _____

Weather: Low: _____ High: _____ Condition: _____

WORK ACCOMPLISHED

TESTING ACCOMPLISHED					
ITEM TESTED	**LOCATION: FROM**	**LOCATION: TO**	**QUANTITY TESTED/LOT**	**RESULT**	**SPECIFICATION**

MATERIALS RECEIVED TODAY:				
MATERIAL	**SOURCE**	**CAR INVOICE OR TICKET NO.**	**QUANTITY**	**IDENTIFICATION**

Sample

VDOT Virginia Department of Transportation	***INSPECTOR'S DAILY REPORT***	REPORT NO:	

CONTRACTOR'S EQUIPMENT & MANPOWER	
EQUIPMENT	**MANPOWER**

REMARKS

Signed

Approval

_____ _____

Name Title

_____ _____

Name Title

Sample

VDOT Virginia Department of Transportation	***NONCONFORMANCE NOTIFICATION LOG***	Page	

PROJECT: _____ PROJECT NO: _____

CONTRACTOR: _____

Notification Number	Date	Spec Section	Defective/Rejected Work	Accepted	
				By	Date

Sample

VDOT Virginia Department of Transportation	***NONCONFORMANCE REPORT***

TO CONTRACTOR: _____ NOTIFICATION NO: _____

PROJECT: _____ PROJECT NO: _____

OWNER: _____ TIME: _____ AM/PM

ENGINEER: _____ OBSERVER: _____

Pursuant to the GENERAL CONDITIONS of the Contract, you are hereby notified of the following noncompliance violation:

Specification Section: _____ Paragraph: _____

Violation:

Contract Requirement:

Violation Detected by: ☐ Test ☐ Inspection ☐ Observation

Noncompliance Work is: ☐ Defective ☐ Rejected

Contactor's Proposed Recommendation

Received by:

Engineer: _____
Authorized Representative

Date: _____

_____
Contractor

_____
Title

_____
Date

Distribution:
1. Engineer
2. Owner
3. Field File

Sample

VDOT Virginia Department of Transportation	***NOTICE OF CORRECTION OF NONCONFORMANCE WORK***

TO _____ PREVIOUS NOTIFICATION NO: _____ DATE: _____

PROJECT: _____ PROJECT NO: _____

OWNER: _____

ENGINEER: _____

The below listed nonconformance work has been re-inspected and the results of the Contractor's corrective actions have placed the work in compliance with the Contract Documents.

Description of Violation:

Description of Correction:

Sample

Engineer: _____
Authorized Representative

Date: _____

Distribution:
1. Engineer
2. Owner
3. Field File

VDOT Virginia Department of Transportation	***PUNCH LIST***	DATE	

PAGE: 41 OF 41

PROJECT: _____ PROJECT NO: _____

CONTRACTOR: _____

INSPECTED BY: _____

Item	Location	Action Required	Accepted	
			By	Date

Sample