

STATE OF DELAWARE



DEPARTMENT OF TRANSPORTATION

DESIGN-BUILD PROJECT

for

DOVER TRANSIT CENTER

Dover Transit Center
State Contract # 25-020-01
Federal Contract # ERRA-2009(31)

SCOPE OF SERVICES PACKAGE

CONTRACT DOCUMENTS

PART 3

**DESIGN REQUIREMENTS AND
PERFORMANCE SPECIFICATIONS**

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1.0 GENERAL

1.1 PURPOSE

This Part 3 – Design Requirements and Performance Specifications establishes basic design and performance requirements to be used in the design and construction of the Project.

Section 2 provides direction on certain aspects of design applicable throughout the Project and the requirements to be followed for the design in the event a Project element or component is not covered by a Performance Specification.

Section 3 includes both the broad design and performance parameters, usually in the form of recognized standards, under which components and elements of the Project are to be designed and the specifically defined design and performance requirements relative to the Project. More detailed Performance Specifications are included in Appendix A to this Part 3 of the Contract Documents.

2.0 DESIGN REQUIREMENTS

The goal of the Project Design to develop a plans and specifications that minimize construction and maintenance costs and allow that for future development of the site without impacting or disturbing transit operations.

2.1 SCOPE

Low Impact design (LID) – using or following the principles of the design requirements, as defined by standards, references, and project-specific requirements (*see* Section 2.5), are contained in each Performance Specification that governs the design of that Project element. Each Performance Specification lists the precedence of the design requirements.

See Part 1 of the Contract Documents for more detailed information pertaining to the Project scope.

2.2 PROCEDURES

2.2.1 Format

The Design-Builder shall prepare Design Plans and Project Specifications for the Project to the Department's standards for general content and format and in accordance with the Contract and Section 2.3.3.

2.2.2 Deviations

Deviations may be made within the framework of these design requirements to meet the requirements and goals of this Section 2.0 and the Performance Specifications, in order to meet the requirements of a particular Project element or component. Deviations from the design requirements or Performance Specifications included in the Contract may be allowed with the approval of the Department's Project Manager prior to incorporation into the design. Determination as to whether the Design-Builder's solution to a Project element is acceptable shall be in the sole opinion of the Department. It is the responsibility of the Design-Builder to identify, explain, and justify any deviation from, discrepancy from, or innovative solution to the established criteria and to secure approval(s) from the Department's Project Manager. Refer to Part 2 DB Section 111-13 Design Exceptions and Part 2 DB Section 105-13 Value Engineering Proposals as applicable.

2.3 SUPPORTING ENGINEERING INFORMATION

2.3.1 Mapping and Surveying

Existing mapping and survey information is contained in the *Reference Documents* Section of the Scope of Services Package.

2.3.2 Geotechnical

Existing geotechnical data, including any supplemental data obtained by the Department during the Proposal phase, is contained within the *Reference Documents* Section of the Scope of Services Package. The Design-Builder shall conduct additional geotechnical investigations, analyses, design, and construction in accordance with the *Geotechnical Requirements* Performance Specification (*see Appendix A to this Part 3 – Design Requirements and Performance Specifications*).

2.3.3 CADD

CADD formatting for Design Plans and Record (as-built) Drawings shall conform to the Department's CADD drafting standards and CADD design standards as defined in the Plan Development Guidelines available from the Department's Project Development Resource Center. Resource Center information can be found at <http://www.deldot.gov/information/business/drc/index.shtml>.

2.3.4 Traffic Data

Existing and Design Traffic Data is contained in the *Roadway Geometrics* Performance Specification (*see Appendix A to this Part 3 – Design Requirements and Performance Specifications*).

2.4 DESIGN CODES AND MANUALS

In addition to the requirements listed in this Section 2.0 and the Performance Specifications, the Designer must comply with all other applicable and currently effective engineering codes, building codes, and standards, including those of the various federal, state, and local jurisdictions.

If codes, standards, and/or manuals are specified herein for the design of an element of the Project, then the edition(s) in effect on the Proposal due date shall be applicable to the Project. Responsibility for design remains with the Design-Builder in accordance with the terms and conditions of the Contract. If a code, manual, or standard is subsequently modified, the Design-Builder shall notify the Department of such modification(s), providing potential cost and schedule impacts to the Project, and request the Department's decision regarding application of the modification(s). If the Department directs the Design-Builder to comply with the modifications and any change in the cost or time of performance results, such change shall be processed by a change order.

The governing precedence of Parts 1 through 8 of the Contract Documents is specified in DB Section 102-1. Specific codes and standards include, but are not limited to, the following listed in order of governing precedence for this Part 3 of the Contract Documents unless otherwise specified in a Performance Specification:

- A) Scope of Services Package – Contract Documents Part 3 – Design-Build Performance Specifications;
- B) Scope of Services Package – Contract Documents Part 4 – Design-Build Special Provisions;
- C) ~~Scope of Services Package – Contract Documents Part 6 – Directive and Indicative Plans;~~

- D) Delaware Department of Transportation “Road Design Manual,” the latest edition with Revisions as of the issue date of this RFP;
- E) AASHTO, “A Policy on Geometric Design of Highways and Streets (Green Book),” the latest edition with Revisions as of the issue date of this RFP;
- F) AASHTO, “Roadside Design Guide,” the latest edition with Revisions as of the issue date of this RFP;
- G) AASHTO, “Guide for the Planning, Design and Operation of Pedestrian Facilities,” *the latest edition with Revisions as of the issue date of this RFP*;
- H) TRB, “Highway Capacity Manual,” *the latest edition with Revisions as of the issue date of this RFP*;
- I) DNREC – “GREEN TECHNOLOGY: THE DELAWARE URBAN RUNOFF MANAGEMENT APPROACH,”
<http://www.swc.dnrec.delaware.gov/Pages/SedimentStormwater.aspx>
- J) FHWA, “Manual of Uniform Traffic Control Devices (MUTCD),” the latest edition with Revisions as of the issue date of this RFP; and
- K) AASHTO, “Roadway Lighting Design Guide,” the latest edition with Revisions as of the date of the issue of this RFP.

2.5 PROJECT-SPECIFIC DESIGN PARAMETERS

Project-specific design parameters are included under their appropriate and respective Performance Specifications. Project-specific design parameters may include, but are not limited to, design parameters specific to the Project, such as, bridge loadings, bridge and structure scour, design life, design speed, forecasted traffic volumes, number of lanes and lane widths, stopping sight distance, horizontal curvature, superelevation, vertical curves, horizontal and vertical alignments, grades, roadside clear zone width, minimum main span bridge navigational clearances, and aesthetic requirements.

See Part 1 of the Contract Documents for additional design parameters.

2.6 ROADWAY GEOMETRICS AND STORMWATER MANAGEMENT

2.6.1 Geometrics

Roadway geometrics shall be in accordance with the codes and standards of Section 2.4 of this Part 3 – Design Requirements and Performance Specifications and the *Roadway Geometrics* Performance Specifications in Appendix A to this Part 3.

2.6.2 Stormwater Management

Stormwater management approaches shall be in accordance with the codes and standards of Section 2.4 of this Part 3 – Design Requirements.

2.7 DESIGN EXCEPTIONS AND DEVIATIONS

No design exceptions to the roadway geometric requirements specified in the Roadway Geometrics Performance Specification in Appendix A to this Part 3 shall be permitted. Any requests for deviations from the Contract requirements shall be submitted to the Department for review and approval in accordance with Part 2 – DB Section 111-13.

3.0 PERFORMANCE SPECIFICATIONS

The Performance Specifications included in this Part 3 – Design Requirements and Performance Specifications, establish requirements that the Design-Builder’s Work shall achieve. The Performance Specifications provide clear requirements for how the finished product is to perform while allowing the Design-Builder considerable flexibility in selecting the design, means, materials, components, and construction methods used to achieve the specified performance.

3.1 STANDARDS AND REFERENCES

Standards and references are cited within the Performance Specifications. The following distinction between “standards” and “references” apply. Standards constitute a further elaboration of the requirement. References constitute advisory or informational material provided for the Design-Builder’s benefit. This advisory information need not be followed, but in some cases provide acceptable solutions already used by the Department. In some cases, specific parts of the reference are cited in Performance Specifications as requirements. In case of conflict between the standards and the references, the standards shall govern unless specifically approved in writing by the Department.

3.2 LIST OF PERFORMANCE SPECIFICATIONS

The following is a list of the Performance Specifications contained in Appendix A to this Part 3 – Design Requirements and Performance Specifications:

- L) Aesthetic Requirements;
- M) Concrete Paving System Requirements
- N) Engineering Requirements;
- O) Geotechnical Requirements;
- P) Inspection, Maintenance and Construction Requirements;
- Q) Passenger Canopy Requirements
- R) Public Outreach Requirements; and
- S) Warranty Requirements.

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PART 3 – APPENDIX A

PERFORMANCE SPECIFICATIONS

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**AESTHETIC REQUIREMENTS
PERFORMANCE SPECIFICATION**

1.0 INTRODUCTION

This Performance Specification specifies the minimum aesthetic requirements to be considered and addressed by the Design-Builder during the design development of the project.

2.0 STANDARDS AND REFERENCES

The Work shall be in accordance with this *Aesthetic Requirements* Performance Specification and the relevant requirements of the following standards, unless otherwise stipulated herein. Standards and References specifically cited in the body of this Performance Specification establish requirements that shall have precedence over all others. Should the requirements in any standard conflict with those in another, the standard highest on the list shall govern. Listed under References are guidelines that the Design-Builder may use in addressing the requirements as the Design-Builder sees fit. It is the Design-Builder's responsibility to obtain clarification of any unresolved ambiguity prior to proceeding with design or construction.

2.1 STANDARDS

- A) None specified.

2.2 REFERENCES

- A) AASHTO, "A Guide for Achieving Flexibility in Highway Design," the latest edition with all current Interims as of the issue date of this RFP; and
- B) TRB, "NCHRP Report 480: A guide to Best Practices for Achieving Context Sensitive Solutions".

3.0 REQUIREMENTS

As part of the design development, the Design-Builder shall address how the design meets or exceeds the following aesthetic requirements.

3.1 CONTEXT SENSITIVE DESIGN

The Design-Builder shall strive to achieve a context sensitive design with the following minimum considerations:

- A) Provide accent or aesthetic lighting. Excessive illumination shall be avoided. Roadway lighting shall be provided;
- B) Protection from graffiti;
- C) Railings, and barriers that discourage use by skateboarders and skaters as objects on which to perform stunts;
- D) A consistent overall architectural theme that is suitable for the surroundings.

3.2 PUBLIC INVOLVEMENT

The Design-Builder may choose, at his option, to include the public in the final selection of architectural and/or aesthetic details as specified in the *Public Outreach Requirements* Performance Specification included in Part 3 of the Contract Documents. Should the Design-Builder propose to involve the public in the selection of aesthetic treatments, the proposed methods of public involvement shall be carried out and the results implemented into the Work at no additional cost to the Department.

**CONCRETE PAVING SYSTEM
PERFORMANCE SPECIFICATION**

1.0 INTRODUCTION

The Design-Builder shall provide concrete paving system meeting the requirements of this section and other Department requirements. The Design-Builder shall abide by the specifications and standards in this Performance Specification and in other applicable sections as they pertain to concrete paving.

2.0 STANDARDS AND REFERENCES

The design and construction of drainage system facilities and appurtenances, including those required for environmental purposes, shall be in accordance with this Performance Specification and the relevant requirements of the following standards, unless otherwise stipulated in this Performance Specification. Standards and references specifically cited in the body of the Drainage system Performance Specification establish requirements that have precedence over all others. Should the requirements in one standard conflict with those in another, the standard highest on the list shall govern. Listed under references are guidelines that the Design-Builder may use to address the requirements, as the Design-Builder sees fit. It is the Design-Builder's responsibility to obtain clarification of any and all unresolved ambiguity prior to proceeding with any design or construction.

2.1 STANDARDS

Specific codes and standards include, but are not limited to, the following listed in order of governing precedence.

2.1.1 Specifications

- A) Delaware Department of Transportation "Supplemental Specifications, Revisions and Corrections to the August 2001 Standard Specifications" (Part 4 - Appendix A);
- B) Delaware Department of Transportation "Standard Specifications for Road and Bridge Construction" Dated 2001; and
- C) Delaware Department of Transportation, "Standard Construction Details," the latest edition with Revisions as of the issue date of this RFP;

2.1.2 Coordination with other Design Standards

- A) Delaware Department of Transportation "Road Design Manual" the latest edition as of the issue date of this RFP;

2.2 REFERENCES

- A) Delaware Department of Transportation, Design Guidance Memorandums;
- B) AASHTO, "Standard Specifications for Transportation Materials and Methods of Sampling and Testing," the latest edition with Revisions as of the issue date of this RFP;
- C) AASHTO, "Roadside Design Guide," the latest edition with Revisions as of the issue date of this RFP.

3.0 REQUIREMENTS

- A) The Design-Builder shall develop a concrete paving system meeting the provisions offered herein. The Design-Builder shall determine the concrete mix design subject to

approval by the Department.

3.2 DESIGN CRITERIA

- A) **Mix Design** – the minimum 28-day compressive strength shall be 3,500 psi when tested in accordance to AASHTO T 22. In addition to the minimum compressive strength, the maximum 28-day compressive strength shall be 5,000 psi when tested in accordance to AASHTO T 22. Any strength tests below the minimum or above the maximum will be subject to penalty in accordance with DeDOT Standard Specification Section 602.25. Test strengths above the maximum will be administered using a similar penalty calculation procedure used for test strength below minimum criteria.
- B) **Dowel Placements** – the Design-Builder shall submit to the Department their intended joint layouts for the concrete pavement. The dowel bar and any reinforcing steel details shall also be submitted for review and approval prior to starting the concrete placement operation. In order to assure proper placement and alignment of the reinforcing steel, the design builder shall use a properly calibrated MIT Scan-2 testing device to verify dowel bar and any other reinforcing steel locations of all joints. The Design-Builder shall provide to the Department a printed version of each joint tested with the MIT scanner showing the steels alignment and depth.
- 1) Tolerances for the placement of the steel shall be as referenced in the Standard Construction Details P-1 (2001), sheet 5.
 - 2) If the data shows the above tolerances are exceeded, the Design-Builder shall submit to the Department their proposed action to remedy the non-conforming joint for review and approval.
- C) **Texturing** – the Design-Builder shall use a texturing system that provides a smooth, quiet, and safe pavement surface. The final finish shall be a carpet drag longitudinally along the pavement before the concrete has attained its initial set. The drag shall be mounted on a bridge. The dimensions of the drag shall be the width of the concrete placed by a longitudinal length having sufficient surface contact to produce a texture satisfactory to the Engineer.
- The carpeting for the carpet drag shall be an artificial grass type having a molded polyethylene pile face with a blade length of 5/8 – 1 inch and a total minimum weight of 70 oz/square yard. The backing shall be of a strong, durable material not subject to rot that shall be adequately bonded to the facing to withstand use as specified.
- D) **Smoothness Requirements** – the concrete pavement shall be tested for smoothness in accordance with DeDOT Standard Specification Section 501.17 except that bonuses will not be paid for this work and all areas shall be considered Secondary Surfaces for testing purposes.
- E) **Hiperpav** - The Design-Builder may use the **HIPERPAV**[®] (**HIgh PERformance Concrete PAVing**) analysis system and reference its use in their Quality Control Plan. This analysis may be used to ensure the internal strength of the concrete is greater than the internal stresses based upon the actual inputs into the software system. If the stresses are calculated to be greater than the strength, the Design-Builder shall take remedial steps to ensure strength is greater than stress to minimize cracking.

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**DRAINAGE SYSTEM
PERFORMANCE SPECIFICATION**

1.0 INTRODUCTION

The Design-Builder shall provide a drainage system designed to safely handle storm runoff consistent with the Design-Builder's design and to satisfy all environmental commitments (*see* Part 6 – Permit Requirements) and other Department requirements. The design and construction of all drainage and other drainage facilities shall adequately address runoff control, safety, functionality, erosion mitigation, durability, ease of maintenance and repair, and maintenance access. The Design-Builder shall abide by the specifications and standards in this Performance Specification and in other applicable sections as they pertain to drainage facilities, including NPDES and other permit requirements.

2.0 STANDARDS AND REFERENCES

The design and construction of drainage system facilities and appurtenances, including those required for environmental purposes, shall be in accordance with this Performance Specification and the relevant requirements of the following standards, unless otherwise stipulated in this Performance Specification. Standards and references specifically cited in the body of the Drainage system Performance Specification establish requirements that have precedence over all others. Should the requirements in one standard conflict with those in another, the standard highest on the list shall govern. Listed under references are guidelines that the Design-Builder may use to address the requirements, as the Design-Builder sees fit. It is the Design-Builder's responsibility to obtain clarification of any and all unresolved ambiguity prior to proceeding with any design or construction.

2.1 STANDARDS

Specific codes and standards include, but are not limited to, the following listed in order of governing precedence.

2.1.1 Design

- A) FHWA HTA-22, Hydraulic Engineering Circular 22 (HEC-22) FHWA-NHI-01-021, "Urban Drainage Design Manual," Second edition, August, 2001;
- B) AASHTO, "Model Drainage Manual," the latest edition as of the issue date of this RFP;

2.1.2 Specifications

- A) Delaware Department of Transportation "Supplemental Specifications, Revisions and Corrections to the August 2001 Standard Specifications" (Part 4 - Appendix A);
- B) Delaware Department of Transportation "Standard Specifications for Road and Bridge Construction" Dated 2001;

2.1.3 Coordination with other Design Standards

- A) Delaware Department of Transportation "Road Design Manual" the latest edition as of the issue date of this RFP;

2.2 REFERENCES

- A) Delaware Department of Transportation, Design Guidance Memorandums;
- B) Delaware Department of Transportation, "Standard Construction Details," the latest

edition with Revisions as of the issue date of this RFP;

- C) AASHTO, "A Policy on Geometric Design of Highways and Streets (Green Book)," the latest edition with Revisions as of the issue date of this RFP;
- D) AASHTO, "Roadside Design Guide," the latest edition with Revisions as of the issue date of this RFP.

3.0 REQUIREMENTS

The Design-Builder shall develop a drainage system satisfying the requirements of NPDES and provisions offered herein.

3.1 DESIGN CRITERIA

- A) The Design-Builder shall determine the design storm for the Project subject to approval by the Department.
- B) The minimum allowed design storm recurrence interval shall be the ten-year storm. This value shall be used regardless of any Design-Builder research, analysis or calculations that indicate a lesser design storm recurrence interval. Should the Design-Builder's research, analysis and/or calculations indicate an increase in the recurrence interval for the design storm, then the Design-Builder shall use the higher recurrence interval for design.

3.1.2 Drainage Device Discharge

- A) The Design-Builder shall determine the volume of runoff collected at devices for the design of piping, downspouts, collectors, cleanouts, trench drains, splash blocks, and any other such materials for the proper conveyance of collected discharge from the expansion joint devices.
- B) The Design-Builder shall design piping, downspouts, scuppers, trench drains, and any other such materials for the conveyance of collected discharge from devices with an efficiency of 50% to estimate the condition when the system may be partially clogged by debris and sediment.
- C) All piping, downspouts, cleanouts, floor drains, collectors, connections and other such materials required for the complete assembly of the drainage system for expansion joint device discharge shall be ductile iron conforming to the requirements of *ASTM A746* with asphaltic coating. The asphaltic coating shall be a minimum of 1 mil in thickness after curing.
- D) Minimum allowable pipe size for expansion joint discharge shall be 6 inch DIP size. Minimum allowable diameter for cleanouts and round floor drains shall be 6 inches.
- E) Slopes of pipe laterals shall be determined by the Design-Builder. The minimum allowable slope for piping laterals shall be 3%.
- F) Slopes for trench drains shall be determined by the Design-Builder. The minimum allowable slope for trench drains shall be 1%.
- G) The minimum width and depth of trench drains shall be 6 inches. Trench drains shall be supplied with gratings and shall conform to *ASTM A48*, Class 30.
- H) Drainage outlet pipes shall be placed such that the free-fall discharge height is less than 2 feet above splash blocks.

**ENGINEERING REQUIREMENTS
PERFORMANCE SPECIFICATION**

1.0 INTRODUCTION

This Performance Specification specifies the Engineering requirements for the project.

The Work performed under this section shall include, without exception, all Engineering required to complete to the satisfaction of the Department, all aspects and all phases of the project, including both temporary and permanent portions thereof. It shall include all labor, travel costs, equipment, computers, other hardware, software, printing and all miscellaneous materials required to conduct, complete, check, document, present and convey the results from each individual aspect of the engineering effort, both to the Department and to all appropriate members of the Design-Builder's team.

2.0 STANDARDS AND REQUIREMENTS

Engineering Work shall be in accordance with all Delaware Professional Engineering ethics standards, regulations and standards of care. All engineering shall be conducted by and/or under the direct supervision of Professional Engineers registered in the State of Delaware.

Each individual aspect of the Engineering Work shall be conducted, prepared and documented in conformance with the provisions of Part 2 - DB Section 111 – Design Management and Design Quality Control.

Each individual aspect of the Engineering Work shall be conducted in conformance with the Project design criteria and design code(s) and shall result in work product/documents that meet all aspects of the specified design codes, construction codes, special provisions, performance specifications and all other Contract requirements.

Qualifications of each "Responsible Engineer" shall be submitted to the Department for approval. Each element and aspect of the design, including calculations, reports, supplemental studies, record drawings and other design drawings, shall be signed and sealed by one of the Design-Builder's Responsible Engineers registered in the State of Delaware.

These standards and requirements apply to all individuals involved in any design activity whether employed directly by the Design-Builder or by the Design-Builder's Responsible Engineer, Subcontractor(s) or Subconsultant(s).

3.0 RELEASE OF ENGINEERED WORK FOR CONSTRUCTION

It is expected that individual portions of engineered work will be released by the Design-Builder for construction prior to completion of all design and/or construction Engineering Work. Individual groups of working drawings, engineered work methods, plans, specifications or other documents and information presenting engineered work may be "Released for Construction" to the field crews to begin work, provided all aspects of the work have been prepared, reviewed, checked, independently checked, certified and fully coordinated with all other aspects of the works.

This shall include, but not be limited to, for each item to be "Released for Construction": Preliminary Design, Semi-Final Design and Final Design submittals and each of the provisions of Part 2 - DB Section 111-12.5.

Each sheet of each document, regardless of type, size, title or nature, which has been authorized by the Design-Builder as “Released for Construction”, shall include a stamp with the words “Released for Construction” and shall be both initialed and dated individually by the Design Manager, the Design QC Manager and signed and sealed by the Responsible Engineer(s).

No documents shall be in use for actual construction of any temporary or permanent aspect of the work that do not include the “Released for Construction” stamp including all appropriate initials and dates.

4.0 ENGINEERING WORK AND ASSOCIATED ACTIVITIES

Engineering Work and associated activities shall include, but are not limited to, the following:

- A) Verification of Pre-Bid Engineering – Immediately after NTP, the Design-Builder shall instruct the Responsible Engineer(s) to commence without delay in preparing design calculations, including all QA/QC requirements, which check, verify and validate the pre-bid engineering design work, including preliminary material quantities. This work shall be prepared, documented and presented in the first engineering review meetings: Design Mobilization Meeting (*See Part 2 – DB Section 105-12.2*); Preliminary Design Review (*See Part 2 – DB Section 111-9.1*); and Design Workshop (*See Part 2 – DB Section 111-16*).
- B) Preparation of Preliminary, Semi-Final and Final Engineering submittals, including QA/QC requirements, for each component of both the temporary and the permanent portions of the work, including falsework, temporary equipment and temporary facilities (including engineering for removal of temporary items).
- C) Preparation for, attendance and participation (including presentations) by the Design Manager (and Responsible Engineers as appropriate) in the design mobilization meeting, each design review meeting, each pre-construction meeting, each value engineering meeting, site mobilization meeting, each progress meeting, each independent assurance meeting, partnering meetings and each special meeting initiated by either the Design-Builder or the Department’s Project Manager. Attendance by the Design-Builder’s Responsible Engineer to any (or all) Construction Review Meetings may also be required by the Department’s Project Manager and without additional compensation to the Design-Builder.

In any meeting, the Responsible Engineer will be required to present design methodologies, design results and other appropriate information relative to each design related topic(s) discussed at the meeting.

- D) Preparation for, attendance and participation (including presentations) by the Responsible Engineer may be required in public and/or public involvement meetings.
- E) Preparation and presentation/discussion of Responsible Engineer responses to Department review comments, questions, etc. in support of the comment resolution process. Such review of comments and response preparation by the Responsible Engineer may include supplemental calculations, engineering analyses, computer modeling, drawings, additional meetings/travel and presentation preparation/materials.
- F) Preparation of drawings, renderings and computer animations of the design related information.

Geotechnical investigations, analyses, reports, review of existing geotechnical information and all related activities. This shall include but not be limited to, temporary

and permanent foundation designs, hydraulic/scour evaluations, cofferdams and the development and use of engineering soil-to-structure interaction parameters.

- G) Roadway related engineering, including roadway geometry and all surveying.
- H) Maintenance of traffic (MOT) plan development, including engineering analyses and presentation/justification of all such information to the Department and Department's representatives.
- I) Design, plan preparation and specification preparation for electrical systems, maintenance, navigational and safety lighting systems, aesthetic lighting systems, and lightning protection systems.
- J) Utility system design, plan preparation, specification preparation and coordination with utility companies and/or owners and the Department and/or Department representatives.
- K) Development and justification of each proposed design exception and/or non-standard feature (as may be identified or classified as such by either the Design-Builder or the Department). Design exceptions will be required to be part of a Value Engineering submittal after selection of the successful Design-Builder, as stipulated in Part 2 – DB Section 105.
- L) Environmental related permits and environmental control plan(s) development.
- M) Responsible Engineer participation in dispute resolution meetings as may be requested by either the Design-Builder or the Department.
- N) Responsible Engineer participation in arbitration meetings as may be requested by either the Design-Builder or the Department.
- O) Design scheduling, progress tracking and reporting.
- P) Design quality records development and documentation.
- Q) Evaluation of equipment interaction(s) with temporary works and permanent portions of the structure.
- R) Construction engineering and development of supporting engineering information.
- S) Engineering analyses, drawings, procedures and other support, relevant to corrective actions and/or repairs to non-conforming element(s).
- T) Engineering analyses, drawings, procedures and other support, relevant to changed or differing site conditions.

All required critical path schedule (CPM) development, monitoring, updates and reports
(See the Project Control System Development Plan and CPM Schedule Updates and/or Revised Updates Special Provisions in Part 4 of the Contract Documents).
- U) Engineering analysis and/or review of project related test data.
- V) Load rating and drawings of as-built condition.

5.0 ENGINEERING SOFTWARE

All computer based engineering calculations, checks and studies shall be performed with fully documented engineering software. Checking must be performed using independent proprietary software or independent commercially available software other than the software used for original calculations. The Responsible Engineer shall be required to validate all computer software (before use of the

application is made by the Design-Builder/Responsible Engineer) and document quality control checks.

6.0 APPROVAL OF AS-BUILT CONDITIONS

The Design-Builder (including the Design Manager, Construction Manager, and Quality Control Manager) shall be required to provide written acceptance of the as-built conditions after conducting final field reviews, completing Record Drawings (and other such documents) and resolving all Non-Conformance Reports.

The written as-built acceptance by each party shall clearly state that all aspects of the structure were found to comply with all aspects identified in the Contract relative to the design criteria, standards of construction and all project Performance Specifications and Special Provisions. Disclaimers, exceptions, or other such terms, shall not be included or considered acceptable in any written as-built acceptance.

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**GEOTECHNICAL REQUIREMENTS
PERFORMANCE SPECIFICATION**

1.0 INTRODUCTION

The Design-Builder shall perform Geotechnical Work including investigations, analyses, design, construction, and monitoring in accordance with all applicable standards and codes and in accordance with this *Geotechnical Requirements Performance Specification*. The Design-Builder’s geotechnical investigations and analyses should be sufficient to adequately characterize the subsurface conditions and provide all the necessary information for a suitable design including soil improvements and erosion control techniques.

2.0 APPLICABLE STANDARDS AND REFERENCES

The Geotechnical Work shall be in accordance with this Geotechnical Performance Specification and the relevant standards and codes, including the following, unless otherwise stated in this Performance Specification. If there is a conflict with other applicable codes or standards, the standards and references specifically cited herein shall prevail over all others. Should the requirements in any standard conflict with those in another, the Design-Builder’s Geotechnical Engineer shall clearly identify such conflicts in the design and provide explanations for following one standard over another. Typically, the standard resulting in the more conservative result shall govern for the design check being considered. References are guidelines that the Design-Builder may use in developing the design as the Design-Builder sees fit. It is the Design-Builder’s responsibility to obtain clarification from the Department’s Project Manager for any discrepancies prior to proceeding with design or construction.

2.1 STANDARDS

Cited publications refer to the most recent issue, including interim publications, in effect on the Proposal due date, unless otherwise specified.

- A) Scope of Services Package – Contract Documents Part 3 – Design-Build Performance Specifications;
- B) Scope of Services Package – Contract Documents Part 4 – Design-Build Special Provisions;
- C) Delaware Department of Transportation, “Supplemental Specifications, Revisions and Corrections to the August 2001 Standard Specifications,” (Part 4 – Appendix A);
- D) Delaware Department of Transportation, “Standard Specifications for Road and Bridge Construction,” Dated 2001; and

2.2 REFERENCES

- A) AASHTO, “Manual on Subsurface Investigations” the latest edition with all current Interims as of the issue date of this RFP;
- B) ASTM D 2487, “Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)”;
- C) ASTM D 2488, “Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)”;
- D) FHWA, “Geosynthetic Design and Construction Guidelines,” FHWA HI-95-038, the latest edition as of the issue date of this RFP;

- E) FHWA, “Geotechnical Instrumentation,” FHWA HI-98-034, 1998;
- F) FHWA, “Ground Improvement Methods – Reference Manual,” FHWA NHI-04-001, the latest edition as of the issue date of this RFP;
- G) FHWA, Geotechnical Engineering Circular No. 5: “Evaluation of Soil and Rock Properties,” FHWA-IF-02-034, April 2002;
- H) FHWA, “Soils and Foundations Workshop Manual,” FHWA NHI-00-045, 2000; and
- I) Delaware Department of Transportation, “Construction Manual,” January 2004, with Revisions as of the issue date of this RFP.

Additional geotechnical reference documents may be found in the Federal Highway Administration’s publications library (http://www.fhwa.dot.gov/engineering/geotech/library_listing.cfm). When further references to these Standards and References are made within this Performance Specification, the edition and date will not be repeated, but are understood to cite the complete reference included in this Section 2.0.

3.0 REQUIREMENTS

3.1 GEOTECHNICAL PLANNING REPORT

The Design-Builder shall prepare a Geotechnical Planning Report for the Project and submit the report for review and written comment from the Department prior to the preliminary design review. The Geotechnical Planning Report shall include a detailed method statement describing the general philosophy and anticipated methods of investigation, analysis, design, construction, and construction monitoring. The report shall include a discussion of the rationale for selection of the proposed construction methods for all geotechnical and foundation aspects of the Project. The method statement shall indicate how material and design details are chosen to match selected construction and monitoring methods, construction details, soils, and the groundwater environment for the site. The Geotechnical Planning Report shall be prepared, checked, and reviewed in accordance with the Preliminary Design Submission requirements specified in the Contract Documents - Part 2, DB Section 111.

The Design-Builder shall provide details of equipment and methods proposed for foundation and earthwork construction and demonstrate how they are consistent with the design approach and assumptions. The details presented shall demonstrate compliance with the Geotechnical Performance Specification requirements and shall demonstrate an understanding of the ground conditions and Project constraints as defined within this Contract.

The Design-Builder shall submit the following technical information with the Geotechnical Planning Report:

- A) Description of geology and various ground types to be encountered within the project limits;
- B) A description of the geotechnical information that was collected and/or analyzed in developing the interpretation used to develop the Design-Builder’s Proposal and pricing for the Project;
- C) Assessment of the engineering properties of all soil types, including the expected average and range of soil strengths and deformation properties;
- D) Recommended design parameters (preliminary) for all soil types;

- E) Support of excavation and groundwater control considerations;
- F) A narrative describing how any interpretation was derived from the geotechnical data;
- G) Consideration for, discussion of, and rationale for protection of existing structures, embankments, bodies of water, and utilities; and
- H) Any pertinent geotechnical data used as a basis for selection, design, and installation of the proposed foundation elements.

The Geotechnical Planning Report shall define the engineering and design approach that will be followed in order to develop technically and environmentally acceptable and durable foundations, cut and fill slopes, retaining structures, and geotechnical designs for the Project. The Geotechnical Planning Report shall discuss all aspects of the required geotechnical effort and design and analysis, including the following:

- 1) Subsurface investigations;
- 2) Determination of geotechnical and foundation design parameters, including parameters of lateral loading response of soils;
- 3) Erosion control measures including design and analysis;
- 4) Ground improvement or treatment of in-situ soils;
- 5) Selection, design, and analysis of foundation and base course systems;
- 6) Lateral and vertical earth pressures on structures;
- 7) Expected serviceability and durability of proposed solutions; and
- 8) Other items related to soil structure interaction or site conditions that may affect design or construction.

The Final Geotechnical Report shall incorporate the findings from the above investigations and analyses. The Final Geotechnical Report shall be prepared and signed and sealed by the Responsible Geotechnical Engineer meeting. The report shall be submitted to the Department for review and comment.

3.2 SUBSURFACE INVESTIGATION AND DATA ANALYSIS

3.2.1 General

The Department has performed a systematic subsurface investigation of the Project site. Information generated from previously completed investigations is included in the Reference Documents to the Scope of Services Package.

The Design-Builder shall conduct additional post-award investigations in accordance with the minimum scope specified herein and any additional investigations the Design-Builder deems necessary to establish the geotechnical conditions and to perform all geotechnical and foundation design and analyses.

These additional investigations and testing shall be conducted in accordance with the reference items identified in Section 2.2 of this Specification and shall include proper coordinates, stations, offsets, and elevations based off of the horizontal and vertical survey control systems established for the Project.

The Design-Builder shall form its own interpretation of the existing geotechnical data and satisfy itself as to the nature of the ground and sub-soil, the form and nature of the site, and nature of the Work that may

affect its detailed design, construction method, and tools. The Department neither assumes nor implies any warranty regarding the data provided, other than that the information was obtained at locations and depths indicated and to the accuracy of the data at the time of testing.

The additional investigations, if any, to be performed by the Design-Builder shall supplement the data provided by the Department. The Design-Builder shall determine the number and location of additional investigations in accordance with the requirements presented in Table 3.2.1. Existing investigation borings may be combined with the additional investigations to comply with the requirements presented in Table 3.2.1. In borings, split spoon soil samples with standard penetration testing shall be taken at five-foot intervals for the first twenty-five feet and every ten feet, thereafter as a minimum, and a minimum of one (1) undisturbed soil sample shall be taken in each unique cohesive soil deposits. Cone Penetration Test soundings may be considered as an alternative to borings where the Design-Builder considers it appropriate provided that a sufficient number of borings are performed at Cone Penetration Test sounding locations to develop reliable correlation between the boring and Cone Penetration Test results and that the Cone Penetration Testing reaches a suitable depth for design of the foundation elements. The Design-Builder shall provide the results of investigations to the Department in a memo as follows:

- A) The logs of borings, cone penetration test sounding, and related field records of any site investigations or testing; and
- B) Laboratory test results and classifications for all samples.

The Design-Builder shall classify soils in accordance with *Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System) ASTM D 2487* and, *Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) ASTM D 2488*.

Except as specified herein, the Department and AASHTO standards shall be followed with respect to planning and performing subsurface exploration programs.

Table 3.2.1 Minimum Requirements for Additional Investigations

Geotechnical Feature	Minimum Investigation Locations
Roadways	As required by the Design-Builder’s Geotechnical Engineer.
Embankments and Cuts	As required by the Design-Builder’s Geotechnical Engineer to define the existing geological conditions for stability analysis and to properly design for settlement.

Note: Except as specified herein, the Department and AASHTO standards shall be followed with respect to planning and performing subsurface exploration programs.

3.3 EROSION CONTROL AND DRAINAGE

Slopes in both cut and fill areas are subject to erosion and deterioration through the action of water, wind and freeze/thaw cycles. Erosion control and drainage measures shall be evaluated, considered and designed for all new and existing slopes within the Project Limits. Erosion of slopes presents a significant maintenance issue and stability problem on slopes. Each cut and fill slope that requires erosion control and drainage measures shall be evaluated for the following:

- A) Reduction of Water Flow across Slope;
- B) Slope Revegetation;
- C) Slope Armor; and

D) Subsurface Water Control.

3.4 MISCELLANEOUS CONSTRUCTION CONSIDERATIONS

The Design-Builder shall evaluate existing and develop designs for new temporary excavation support required for construction, and such design will consider short-term loading due to earth pressures, groundwater pressures, surcharge pressures, and construction equipment loading. Design Builder shall ensure Working Plans are signed and sealed by a Delaware-licensed Professional Engineer.

The Design-Builder shall include surcharge pressures due to structures, point, line and area loads in lateral earth pressure diagrams. Appropriate construction materials and equipment loads shall be determined by the Design-Builder's Geotechnical Engineer and shall be consistent with the methods actually used.

3.5 SUBMITTALS

- Geotechnical Planning Report (*See* Section 3.1) to the Department's Project Manager for Consultation and Written Comment;
- Final Geotechnical Report (*See* Section 3.1) to the Department's Project Manager for review and comment;
- Revised Geotechnical Report to the Department's Project Manager, as required for conformity with the Contract Documents; and
- Qualifications and experience for all specialty service personnel to the Department's Project Manager prior to work beginning.

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**INSPECTION, MAINTENANCE AND CONSTRUCTION REQUIREMENTS
PERFORMANCE SPECIFICATION**

1.0 INTRODUCTION

The Design-Builder shall design and construct the Project so as to meet ease of inspection and maintenance goals for the Project in accordance with all applicable Criteria and Standards cited herein and in accordance with this specification.

2.0 APPLICABLE STANDARDS AND REFERENCES

2.1 STANDARDS

- A) InterNational Electrical Testing Association (NETA), “The Maintenance Specifications,” the latest edition as of the issue date of this RFP;
- B) NFPA, “NFPA-70: National Electric Code,” (NEC) the latest edition as of the issue date of this RFP;
- C) Illuminating Engineering Society of North America, “Roadway Lighting ANSI Approved Reaffirmed in 2005,” IES-RP-8-00;
- D) Delaware Department of Transportation, “Standard Construction Details,” the latest edition as of the issue date of this RFP;
- E) Delaware Department of Transportation, “Supplemental Specifications, Revisions and Corrections to the August 2001 Standard Specifications,” (Part 4 – Appendix A); and
- F) Delaware Department of Transportation, “Standard Specifications for Road and Bridge Construction,” Dated 2001.

2.2 REFERENCES

- A) Scope of Services Package – Contract Documents Part 3 – Design-Build Performance Specifications;
- B) Scope of Services Package – Contract Documents Part 4 – Design-Build Special Provisions; and
- C) Delaware Department of Transportation, “Road Design Manual,” the latest edition as of the issue date of this RFP.

3.0 REQUIREMENTS

The Design-Builder is to design and build permanent structures in accordance with the requirements outlined in Performance Specifications for Structures. Structures so designed are expected to perform for periods as follows:

Bus Shelter/Canopy	20 years
Bus Loop	20 years
Parking lot and other paving systems	20 years
Site Amenities	5 Years

During the above service life of the structures, inspection and maintenance activities will need to be performed. The Design-Builder is required to take inspection and maintenance activities into consideration during the design and construction.

3.1 INSPECTION AND MAINTENANCE MANUAL

3.1.1 Inspection Requirements

The Design-Builder shall perform a detailed “inventory” inspection upon Final Acceptance of the Work. This detailed inspection shall be in accordance with Department guidelines.

3.2 LIGHTING

The Design-Builder shall be responsible for providing roadway and pedestrian lighting features for the Transit Center. The Transit Center lighting Work shall include design, furnishing and installation of all conduits, junction boxes, pull boxes, pole bases, supports, anchor bolts, cabling, wiring, controls, poles, luminaries, and other light fixtures and assemblies as required by the Contract Documents.

4.0 ROADWAY

4.1 DRAINAGE SYSTEM

Design-Builder shall provide drainage structures at all drainage channels and equalizers as needed to prevent backwater flooding. Bends in drain pipes should be <45 degrees.

4.2 SLOPE PROTECTION (EROSION CONTROL)

Erosion control measures shall be designed in accordance with the DelDOT *Erosion/Sediment Control /Stormwater Management Design Guide*. The Design-Builder shall provide a construction erosion control plan as part of the plan development.

5.0 CONSTRUCTION REQUIREMENTS

5.1 NO WORK AREAS

No Work Areas may be delineated in the referenced Environmental Assessment. The Design-Builder shall take all necessary precautions to avoid areas stipulated in the Environmental Assessment.

5.2 MAINTENANCE DURING CONSTRUCTION

The Design-Builder shall comply with the maintenance requirements specified in Part 2 – DB Section 105-8.

6.0 SUBMITTAL REQUIREMENTS

6.1 CORROSION CONTROL PLAN

6.2 INVENTORY INSPECTION

- A) Detailed inspection report to be submitted within one month of Final Acceptance of the Work.

6.3 MAINTENANCE MANUAL

- A) To be submitted within two months after substantial completion of construction.

7.0 WARRANTY INFORMATION

- A) List of replaceable items and associated warranties.

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**PASSENGER CANOPY REQUIREMENTS
PERFORMANCE SPECIFICATION**

1.0 INTRODUCTION

The Design-Builder shall provide a passenger canopy designed to safely providing coverage as passengers travel from/to buses as well as between the bus stalls. This Performance Specification specifies the minimum requirements to be considered and addressed by the Design-Builder during the design development of the passenger canopy.

The canopy shall provide coverage as passengers travel from/to busses as well as between the bus stalls. The design and construction of passenger canopy shall adequately address runoff control, safety, functionality, durability, and ease of maintenance and repair.

The Design-Builder shall also design the passenger canopy in a manner that is consistent with the Aesthetic Requirements for the project.

2.0 STANDARDS AND REFERENCES

The design and construction of the passenger canopy shall be in accordance with this Performance Specification and the relevant requirements of the following standards, unless otherwise stipulated in this Performance Specification. Standards and references specifically cited in the body of this Performance Specification establish requirements that have precedence over all others. Should the requirements in one standard conflict with those in another, the standard highest on the list shall govern. Listed under references are guidelines that the Design-Builder may use to address the requirements, as the Design-Builder sees fit. It is the Design-Builder's responsibility to obtain clarification of any and all unresolved ambiguity prior to proceeding with any design or construction.

2.1 STANDARDS

Specific codes and standards include, but are not limited to, the following listed in order of governing precedence.

2.1.1 Design

- A) ADA Requirements of 49 CFR Parts 27, 27, and 38; and
- B) State of Delaware Architectural Accessibility Standards

2.1.2 Specifications

- A) Delaware Department of Transportation "Supplemental Specifications, Revisions and Corrections to the August 2001 Standard Specifications" (Part 4 - Appendix A);
- B) Delaware Department of Transportation "Standard Specifications for Road and Bridge Construction" Dated 2001;

2.1.3 Coordination with other Design Standards

- A) Delaware Department of Transportation "Road Design Manual" the latest edition as of the issue date of this RFP;

2.2 REFERENCES

- A) Delaware Department of Transportation, Design Guidance Memorandums;
- B) Delaware Department of Transportation, “Standard Construction Details,” the latest edition with Revisions as of the issue date of this RFP;
- C) AASHTO, “A Policy on Geometric Design of Highways and Streets (Green Book),” the latest edition with Revisions as of the issue date of this RFP;
- D) AASHTO, “Roadside Design Guide,” the latest edition with Revisions as of the issue date of this RFP.

3.0 REQUIREMENTS

The Design-Builder shall develop a drainage system satisfying the requirements of the provisions offered herein.

3.1 DESIGN CRITERIA

- A) The Design-Builder shall determine the design loads for the passenger canopy subject to approval by the Department.
- B) The passenger canopy design load shall be to meet all local and state codes for design, snow, wind, and seismic loads.
- C) Drainage from the roof structure shall be collected and either distributed to the stormwater collection system or stored for re-use in landscaping other purpose. Water shall not be directed to the bus loop, sidewalks or passenger waiting areas.

3.1.2 Passenger Canopy Features

- A) Advertising – The design of the passenger canopy should allow for DTC to sell advertising on wall panels or other means.
- B) Schedules – The passenger canopy shall include cases for displaying six printed bus schedules. Each schedule is 24 inches by 24 inches. In the future schedules may be displayed on an electronic variable message sign. Each bus stall shall be designed to allow for 11” x 6’-5” x 5” variable message sign, weighting approximately twenty (20) lbs., to be mounted on the passenger canopy.
- C) Bus Numbers – Each bus stall shall be numbered so that the passengers can easily identify where their bus will arrive.
- D) Lighting – The passenger canopy shall include lighting that provides a minimum of 1 foot-candle at ground level of lighting along the entire waiting area. Lighting shall be designed not to create glare for the bus drivers. Lighting shall be designed so that it can be reduced during non-operating hours, but shall provide enough lighting for security purposes.



- E) **Wind Screening - The design and location of the passenger canopy shall provide wind screening for passengers. If glass panels are used to provide wind screening, the glass shall be a minimum 1/2” (12 mm) tempered safety glass.**
- F) Seating – Seating shall be provided under the passenger canopy. They can either be integrated into the passenger canopy structure or be free standing. The seating shall be design to discourage people from lying down or sleeping on the benches. Bench finishes shall deter vandalism and be easily cleaned. The configuration of the benches shall be

designed such that skateboarders are discouraged from using them for tricks.

- G) Trash Cans – A minimum of 6 trash containers are needed around the loop and their location should be coordinated with the design of the passenger canopy.
- H) Finishes – All finishes shall be vandal resistant and easily cleaned/maintained. The design-builder shall provide a minimum 5-year warranty on all finishes.
- I) Levelness – The design of Passenger canopy shall account for any grade changes throughout the site so that all ADA requirements are met.
- J) ADA Compliance – The entire site and all amenities must be ADA compliant. The boarding/disembarking of buses, sight lines and travel paths must be ADA complaint. Areas for wheel chairs must be included in the seating design.
- K) Canopy Coverage – Describe the intended canopy coverage between the passenger waiting area and to each parked bus in a stall as well as movements between bus stalls.
- L) Headroom clearance – A minimum of 90 inches of headroom clearance shall be provided for all areas accessible to passengers under the Passenger Canopy.
- M) Connection to Future Building – The proposal should also indicate how the Passenger Canopy will integrate into the future building. It will be the responsibility of the designer to coordinate with City of Dover to determine if fire suppression is required under the canopy, now or in the future when the canopy is integrated into the building.

3.1.3 Submittal of Passenger Canopy Concept

- A) Submission – The Design-Builder shall submit a narrative on how their proposed Passenger Canopy design meets the requirements of the RFP. The narrative should outline any innovated design solutions and summarize any Green elements. The summary shall indicate what materials and finishes were selected for the Passenger Canopy, how these materials maintain the ambience of the surrounding community, and associated amenities, including the expected durability and warranties that will be supplied. The submittal shall also discuss the construction sequencing of the canopy and the use of any temporary stabilization or support elements required during the construction.

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**PUBLIC OUTREACH REQUIREMENTS
PERFORMANCE SPECIFICATION**

1.0 INTRODUCTION

This Performance Specification specifies the minimum requirements for the Design-Builder’s Public Outreach Plan, establishes responsibilities for the Design-Builder and the Department, identifies content requirements for informational materials, and establishes communication protocols for the implementation of the Public Outreach Plan.

The Public Outreach Program consists of both Department and Design-Builder activities, including the following:

- A) Public Hearings (as needed);
- B) Response to inquiries and comments (as needed);
- C) Public notices (as needed);
- D) Media relations (as needed); and
- E) Other activities included in Part 7 - The Design-Builder’s Proposal.

Awareness and support of transit users, residents, and communities within the area are critical to the successful completion of the Project. It is important that the Design-Builder utilizes a cooperative approach in handling community participation.

2.0 STANDARDS AND REFERENCES

The Work shall be in accordance with this Public Outreach Performance Specification and the relevant requirements of the following standards, unless otherwise stipulated herein. Standards and References specifically cited in the body of this Performance Specification establish requirements that shall have precedence over all others. Should the requirements in any standard conflict with those in another, the standard highest on the list shall govern. Listed under References are guidelines that the Design-Builder may use in addressing the requirements as the Design-Builder sees fit. It is the Design-Builder’s responsibility to obtain clarification of any unresolved ambiguity prior to proceeding with design or construction.

2.1 STANDARDS

- A) Design-Builder’s Public Outreach Plan.

2.2 REFERENCES

- A) AASHTO “A Guide for Achieving Flexibility in Highway Design,” the latest edition with all current Interims as of the issue date of this RFP; and
- B) TRB, “NCHRP Report 480: A guide to Best Practices for Achieving Context Sensitive Solutions.”

3.0 REQUIREMENTS

Public Outreach is intended to keep the public and media informed of major activities, decisions, and project changes through design and construction. This element will involve the preparation and

distribution of Project information to the assigned Department representative for further dissemination to the public and media.

The Design-Builder shall make a good faith effort to address any concerns the public may have, and take under consideration any suggestions or wishes they express if those suggestions are reasonable in regard to cost, time, and construction effort. Documentation shall be in the form of meeting minutes and correspondence, including e-mails. The Design-Builder shall respond to these requests in cooperation with the Department. All design or construction modifications are subject to written acceptance by the Department in consultation with the Design-Builder.

3.1 DEPARTMENT RESPONSIBILITIES

The Department and the Design-Builder both have responsibility for the Public Outreach Program. The Department's Project Manager and Office of Public Relations will be the lead on the Public Outreach effort. The Design-Builder shall have primary responsibility for performing the activities specified in this Performance Specification as well as in the Contract Documents.

The Department's responsibilities shall include the following activities:

- A) Maintain QA/QC of any approved Design-Builder communication efforts;
- B) Monitor the Design-Builder's performance for compliance with the Contract's Public Outreach requirements and the Design-Builder's Public Outreach Plan;
- C) Secure facilities for meetings;
- D) Review and distribute meeting minutes, when appropriate;
- E) Compile information provided by the Design-Builder for use in printed materials;
- F) Coordinate all printed materials including, but not limited to, newsletters, informational maps, press releases, public notices, advertising and correspondence;
- G) Review, approve, and distribute responses to inquiries and comments;
- H) Issue and advertise Public Meeting Notices;
- I) Provide official spokespersons for the Project. The Department-designated representatives will be the first point of contact for all media inquiries including, but not limited to, newspaper, magazine, radio, Internet, and television reporters and others as required in the Public Outreach Plan; and
- J) Host and maintain the Project Website.

3.2 DESIGN-BUILDER RESPONSIBILITIES AND REQUIREMENTS

3.2.1 Public Outreach Program

Within 30 Calendar Days of Notice to Proceed, the Design-Builder shall submit to the Department's Project Manager any request to modify or append the Public Outreach Plan originally included in the Design-Builder's Technical Proposal and included in Part 7 of the Contract Documents. The Department's Project Manager shall have the sole responsibility of determining the acceptability of any proposed changes to the Plan. The approved Public Outreach Plan and the Department's responsibilities specified in Section 3.1 of this Performance Specification shall comprise the overall Public Outreach Program.

3.2.2 Public Updates

The Department intends to periodically provide Public Updates for the duration of the Project. The

Public Update could take place in the form of workshops, presentations to groups, press releases, or media events. The Design-Builder shall coordinate and prepare for each update in close cooperation with the Department.

The Design-Builder shall provide the necessary staff, displays, renderings, models, hand-outs, and information to adequately portray the Transit Center concept and the Project's status at the time of each update. All materials to be used and/or distributed must be reviewed and approved for use by the Department prior to the update.

The initial Update is to be conducted within 30 Calendar Days of the Notice to Proceed for the Project and conducted periodically thereafter.

In the event a workshop is held, the Design-Builder shall submit a meeting summary within 2 Working Days of each Update Meeting. As a minimum, the summary shall include a list of attendees, comments received, issues or concerns raised, copies of hand-outs, displays, or other presentation materials.

3.2.3 Response to Inquiries and Comments

- A) The Design-Builder will have direct contact with the community in meetings and as otherwise required by this Public Outreach Performance Specification.
- B) If a resident, business, or other member of the public has a question or comment on the Project outside of a public meeting forum, the first and preferred point of contact should be the Department's Public Relations Office or the Department's Project Manager. The Design-Builder shall take necessary steps to facilitate such contact.
- C) If Design-Builder receives a complaint regarding Design-Builder's conduct of Work on the Project, the Design-Builder shall notify the Department's Project Manager within 24 hours. The Design-Builder shall provide necessary information, staff support, and representation to assist in resolving the issue.
- D) The Design-Builder shall provide a commitment of the Design-Builder's Project Manager to serve as a spokesperson for the Project, at the Department's request, for technical or any other Project issues.

The Design-Builder shall maintain a consistent system for documenting all contact with business owners, residents, media and property owner. The Design-Builder shall provide the Department's Project Manager, an electronic copy of all public contact records. The electronic file should be received by the 1st of each month and should include all contacts made prior to the 25th of the previous month.

3.2.4 Public Notices

The Design-Builder's planned construction activities may periodically result in temporary impacts to utility services, driveway entrances, and vehicular, pedestrian, and bicycle traffic. In such cases, the Design-Builder shall immediately notify the Department's Office of Public Relations and Project Manager. The Design-Builder and the Department will coordinate contacting the affected parties or general public of anticipated impacts or disruptions of services. Utility shut-off/diversion announcements shall be made in the form of a personal contact by the Design-Builder that shall include a written notice to the affected parties. Copies of the notice shall be provided to the Department's Project Manager and Public Relations Office. The Design-Builder shall provide the specific notifications listed in Table 3.2.4-1.

Table 3.2.4-1 - Notifications

Notice	Requirement
Closure	Written notices posted at least 7 days in advance of planned traffic lane or pedestrian walkway closures. Notice provided to the Department’s Traffic Management Center (TMC) and Public Relations Office 7 days in advance. Lane closures to be signed using Variable Message Signs (VMS) in addition to standard signage.
Critical Utility Shut-off/Diversion	Written notice at least 72 hours in advance of, but not more than 96 hours before, shut-off and/or diversions. Copy of notice to Department’s Project Manager and Public Relations Office.
72-hour Business/Commercial Utility Shutdown	Written notification of Utility shutdown or diversion for businesses and commercial property. Copy of notice to Department’s Project Manager and Public Relations Office.
48-hour Residential Utility Shutdown	Written notification of Utility shutdown or diversion for residential property. Copy of notice to Department’s Project Manager and Public Relations Office.
Weekly Construction Updates	A construction update will be provided to the Department.
Emergency Unforeseen Utility Disruptions, Hazardous Conditions, Traffic Emergencies, Security, and Loss of Access	See Section 3.2.11.
Road and Driveway Closures	Written notice and personal contact at least 72-hours in advance of, but no sooner than seven calendar days prior to, closure. Copy of notice to Department’s Project Manager and Public Relations Office.

3.2.5 Media Relations

An ongoing media relations campaign will occur and be managed by the Department. The Design-Builder shall assist in giving timely information to the Department regarding construction activities and situations that may have the potential for unplanned public focus or media coverage.

Neither the Design-Builder nor any Subcontractor nor their employees shall conduct or participate in media events or radio or television broadcasts without the written consent of the Department. In emergencies, the Design-Builder shall immediately notify the Department's Project Manager and Office of Public Relations to coordinate responses.

3.2.6 Photographs

The Design-Builder shall provide to the Department’s Project Manager high-resolution construction progress photographs in electronic format at least monthly or at any time that a new significant activity commences. Monthly submission should include a minimum of 20 (twenty) new progress photos. In addition, the Design-Builder will accommodate requests for specific photographs and make arrangements

for the Department to take additional photos on an as-requested basis

3.2.7 Other Activities

The Design-Builder is encouraged to provide additional, cost-effective services to enhance the overall Public Outreach Program. Additional public involvement activities might include soliciting feedback on multiple aesthetic treatment options and/or lighting schemes developed by the Design-Builder and implementing designs consistent with indicated preferences. Additional services are to be consistent with other requirements specified in this Performance Specification. Any such Public Outreach Program enhancements may be implemented at any time during the Project, subject to the Department’s written acceptance.

3.2.8 Emergency, Unforeseen Utility Disruptions, Hazardous Conditions, Traffic Emergencies, Security, and Loss of Access Notifications

The Design-Builder shall provide immediate response to emergencies by trained personnel from an incident response team within 30 minutes of receiving notification from the Department, law enforcement or fire suppression agencies, federal land management agencies, Utility Owners, and/or affected businesses and/or residents. The Design-Builder shall notify the Department’s Project Manager or designated alternative contact person immediately of such occurrences.

The Design-Builder shall establish and manage an emergency response telephone tree. All appropriate emergency response agencies, including federal land management agencies, shall be included on this telephone tree for immediate response in the event of an emergency. The telephone tree shall be divided into areas of expertise so the proper people are called for specific emergency situations.

All emergency and/or unforeseen disruptions shall be explained to affected residents or businesses immediately. The person making the contact shall provide to the affected parties the following information:

- A) Cause of disruption (i.e., whether it is construction oriented or not);
- B) Actions being taken to alleviate the problem
- C) Responsible party for the actions; and
- D) Anticipated duration of the disruption.

3.2.9 Changes to Access

Any proposed changes in access shall be submitted to the Department’s Project Manager, along with an access map, at least five Working Days prior to start of construction for the Department’s Project Manager’s written acceptance.

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WARRANTY REQUIREMENTS
PERFORMANCE SPECIFICATION

1.0 INTRODUCTION

The Design-Builder shall be required to meet minimum warranty requirements associated with the contract Work. This Performance Specification identifies items and systems to be warranted by the Design-Builder and the minimum terms associated with those items.

2.0 REQUIREMENTS

The Design-Builder shall unconditionally warrant to the Department all items specified within this Performance Specification, for the minimum period specified, to be free of defects and deficiencies in the design, manufacture or workmanship that would result in the loss of an essential quality or function. The minimum warranty periods specified shall be from the date of Final Acceptance by the Department.

With respect to any portion of the Work that is repaired or replaced, the remaining warranty period shall be the longer of one year from repair or replacement of the Work or the remainder of the original warranty period.

Nothing in these warranty requirements is intended to limit any manufacturer's warranty nor any warranty implied by Delaware law. The Design-Builder will provide the Department with all manufacturer's warranties prior to Final Acceptance of the Work.

See Part 2 – DB Section 104-6 of the Contract Documents for additional requirements.

2.1 EXPANSION JOINTS

The Design-Builder shall guarantee the performance of all expansion joint systems, including drainage troughs, for a minimum period of five (5) years. If any expansion joint fails to perform properly for any reason, including but not limited to normal wear and tear, then the Design-Builder shall replace the expansion joint system at no cost to the Department.

2.2 PAVING SYSTEMS

The Design-Builder shall guarantee the performance of all paving systems for a minimum period of two (2) years. If any portion of the overlay system fails to perform properly for any reason, including but not limited to normal wear and tear, cracking, or delamination, then the Design-Builder shall replace the failed portion at no cost to the Department.

2.3 LANDSCAPING

The Design-Builder shall guarantee the performance of all plantings for a minimum period of three (3) years. If any portion of the landscaping fails to establish properly for any reason the Design-Builder shall replace the failed plantings at no cost to the Department.

2.4 LIGHTING FIXTURES

The Design-Builder shall guarantee the performance of all lighting fixtures for a minimum period of two (2) years. If any internal or external lighting fixture fails to perform properly for any reason, including but not limited normal wear and tear or improper grounding then the Design-Builder shall replace the failed lighting fixture at no cost to the Department. Fluorescent and metal halide electronic ballasts shall be guaranteed for 5 years from the date of acceptance of the electronic ballast. If the ballast fails within the warranty period, the manufacture shall promptly replace the defective ballast and reimburse the Department \$50.00 (fifty dollars) per ballast, for replacement labor charges. Additionally, the Design-

Builder shall furnish to the Department an additional 10 percent (10%) of each lamp type specified over the quantity required to initially lamp the fixtures furnished. Replacement bulbs and fixtures shall be sufficient to meet the anticipated maintenance schedule included in the Design-Builder's Maintenance Manual. *See Part 3 – Performance Specifications, Inspection, Maintenance and Construction Requirements* for additional Maintenance Manual Requirements.

2.5 MECHANICAL AND ELECTRICAL SYSTEMS

The Design-Builder shall guarantee the performance of all mechanical and electrical equipment, apparatus, materials, and workmanship provided under the Contract for a minimum period of one (1) year. During the warranty period, any repairs or replacement needed to maintain satisfactory operation of the mechanical and electrical systems furnished shall be made by the Design-Builder at no cost to the Department.

2.6 ADDITIONAL ITEMS

Other items included in the Design-Builder's warranty proposal shall be guaranteed for the period and terms specified in the Technical Proposal included in the Contract Documents.

2.7 EXTENDED WARRANTY PERIODS

Any extended warranty periods beyond the minimum requirements specified in this Performance Specification shall be in accordance with the terms of the Design-Builder's warranty proposal included in the Contract Documents.

2.8 MAINTENANCE BOND

A Maintenance Bond shall be submitted to the Department per DB Section 103-2 for all guaranteed and warranted items.

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