

ROADWAY PERFORMANCE SPECIFICATION

1.0 INTRODUCTION

The Design-Builder shall design and construct roadways and related work, including main roadways, crossroads, intersections, ramps, travel lanes, shoulders, barriers, transitions, and all other roadway-related facilities as required by this Roadway Performance Specification and by the Project Scope (*see* Part 1 Design-Build (DB) Agreement, Appendix A – Project Scope), required for the safe operation of the new roadways. The design shall provide a workable solution to the Project's needs. The roadway and bridge geometry shall meet the goals established herein, as well as all standards for roadway design as outlined within this performance specification.

The Design-Builder may, however, find ways to improve this geometry. Any innovative alternatives that increase benefits and/or savings to the Louisiana Department of Transportation and Development (LA DOTD) and/or the Design-Builder are encouraged and will be evaluated accordingly.

2.0 PERFORMANCE GOALS

The roadway designs required by this Roadway Performance Specification shall be performed and completed such that the roadways and other features are designed and constructed in a manner that is equal to a standard of care which is practiced by engineers performing successful designs for LA DOTD. All roadway geometries shall be designed in accordance with the standards listed and referenced in this Roadway Performance Specification. The objective of this design work is to result in constructed Project facilities within specified criteria while allowing the Design-Builder the flexibility to make changes that produce benefits or savings to the LA DOTD or the Design-Builder without impairing essential functions and characteristics of the Project, including, safety, traffic operations, desired appearance, and maintainability. The primary performance goals for the Project include the following:

- A) Roadway and related features designed and constructed to national Interstate standards;
- B) Horizontal alignment design that is typical of national Interstate standards and that produces horizontal curves of at least 2,100 feet in length;
- C) No use of horizontal reverse curvature;
- D) Provision of a safe facility for the traveling public;
- E) Permanent signage that is clearly visible, provides clear direction and information for users, and complies with all applicable Manual of Uniform Traffic Control Devices (MUTCD) requirements;
- F) Permanent pavement markings that give sufficient illumination and reflectorization in daytime and at night and comply with all applicable MUTCD and LA DOTD requirements;
- G) Provision of driver safety and awareness features (i.e., rumble strips/stripes);
- H) A smooth horizontal and vertical ride for the traveling public;
- I) Roadway and median barriers that meet National Cooperative Highway Research Program (NCHRP) Report 350, Test Level requirements and provide a functional and safe environment for the public and maintenance crews, as well as provide adequate glare screening;

- J) Provision of adequate sight distance for curves and at intersections; and

3.0 STANDARDS AND REFERENCES

Standards and references specifically cited in the body of this Roadway Performance Specification establish the LA DOTD's standards and suggested reference guidelines. Should the requirements in any standard or reference conflict with those in another, the standard or reference highest on the lists presented below shall govern. Standards constitute a further elaboration of the requirement and must be complied with by the Design-Builder. Listed under references are guidelines that the Design-Builder may use in addressing the project requirements as it deems appropriate. It is the Design-Builder's responsibility to obtain clarification of any unresolved ambiguity prior to proceeding with design or construction.

3.1 STANDARDS

- A) Louisiana Department of Transportation and Development's Design Standards for Freeways (F3 Roadway Classification. With a design exception that a 10 foot outside shoulder will be permitted, if existing pavement in travel lanes is retained);
- B) Manual of Uniform Traffic Control Devices;
- C) Louisiana Department of Transportation and Development Engineering Directives and Standards Manual (EDSM);
- D) American Association of State Highway and Transportation Officials (AASHTO) Policy on Geometric Design of Highways and Streets (Green Book);
- E) American Association of State Highway and Transportation Officials Roadside Design Guide;
- F) Louisiana Department of Transportation and Development Standard Plans; and
- G) Louisiana Department of Transportation and Development Software and Deliverable Standards for Electronic Plans (http://www.altivasoft.com/ladotd/PDFs/DOTD_Software_Standards_for_Electronic_Plans.pdf).

3.2 REFERENCES

- A) Louisiana Department of Transportation and Development Roadway Design Procedures and Details¹;
- B) Highway Capacity Manual, Special Report 209, Third Edition;
- C) Federal Highway Administration (FHWA) Code of Federal Regulations (CFR);
- D) Louisiana Standard Specifications for Roads and Bridges, 2006 Edition;
- E) Louisiana Department of Transportation and Development Highway Specifications Workbook;
- F) Louisiana Department of Transportation and Development Special Details; and
- G) National Cooperative Highway Research Program Report 350.

¹ Section 2.3 EXCEPTIONS TO DESIGN STANDARDS AND POLICIES. Delete the first paragraph in its entirety and replace with the following:

“Every effort shall be made to meet the approved LA DOTD Design Standards for all roadway or bridge projects. Exceptions to design standards shall only be considered when the exception supports an alternative technical concept or value engineering or on a case-by-case basis, at specific locations, where the Design-Builder demonstrates that substantial benefits to the LA DOTD and the public would accrue from the Design-Builder’s recommendation. However, no assurance is made that such Design Exceptions will be approved. All Design Exception Requests shall be submitted in accordance with the Louisiana DOTD Design Exception Request Process utilizing the ‘Design Exception/Design Waiver Form.’”

4.0 SCOPE

The Design-Builder shall design all roadway geometrics, including, but not limited to, horizontal alignments, vertical alignments, superelevation, typical sections, median barriers, permanent pavement markings, rumble strips/stripes, and all other required roadway features. The design and construction of this Project will be a six-lane divided Interstate in accordance with the requirements of the Contract. The new six-lane roadway will be built completely within the existing state-owned Right-of-Way (ROW).

The Design-Builder shall clearly document any changes to the alignment and stationing of the centerline and maintain a complete record of all such changes for LA DOTD reference.

5.0 REQUIREMENTS

5.1 Design Criteria

- A) The roadway design criteria shall be in accordance with Section 3.1 of this Roadway Performance Specification.
- B) Ramp modifications and ramp design will be in accordance with LA DOTD Standard Plans SC-01 and SC-02.
- C) Highway guardrail design shall be in accordance with LADOTD Standard Plans GR-200, GR-201, and GR-202.

5.2 Permanent Pavement Markings

- A) 1½ inch black contrast backing will be required for white centerline pavement striping used on concrete pavements.
- B) All other requirements for pavement markings shall be in accordance with the MUTCD and LA DOTD Standard Plan PM-01.

5.3 Rumble Strips

- A) Rumble strips are required at the edges of the innermost and outermost travel lanes and according to LA DOTD special details.
- B) Rumble strips are not allowed more than 2 inches beyond the inside edge of final striping.
- C) Rumble strip application will be as follows:

Type of Surfacing	Inside Shoulder	Outside Shoulder
Asphaltic Concrete Pavement	Raised Pavement Markings	Existing Rumble Strip to Remain

Type of Surfacing	Inside Shoulder	Outside Shoulder
PCC Pavement	Raised Pavement Markings	Existing Rumble Strip to Remain

5.4 Median Barriers

- A) Median barriers are required if the final median width (travel lane to travel lane) is less than 60 feet.
- B) Required median barriers will be concrete and constructed at a location beyond the 12-foot width of the inside shoulder section and on an independent reinforced concrete footing.
- C) Median barriers shall meet National Cooperative Highway Research Program Report 350 Test Level 5 requirements.
- D) Median barriers shall not be less than 54 inches in height.
- E) Cable barriers will not be allowed.
- F) Incidental concrete paving shall be provided within the median if median width between the barrier rails is equal to or less than 20 feet.